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Explanation

The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. The Code is divided into 50 titles which represent broad areas subject to Federal regulation. Each title is divided into chapters which usually bear the name of the issuing agency. Each chapter is further subdivided into parts covering specific regulatory areas.

Each volume of the Code is revised at least once each calendar year and issued on a quarterly basis approximately as follows:
- Title 1 through Title 16 .............................................................. as of January 1
- Title 17 through Title 27 ................................................................. as of April 1
- Title 28 through Title 41 .............................................................. as of July 1
- Title 42 through Title 50 ............................................................. as of October 1

The appropriate revision date is printed on the cover of each volume.

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The contents of the Federal Register are required to be judicially noticed (44 U.S.C. 1507). The Code of Federal Regulations is prima facie evidence of the text of the original documents (44 U.S.C. 1510).

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To determine whether a Code volume has been amended since its revision date (in this case, January 1, 1999), consult the "List of CFR Sections Affected (LSA)," which is issued monthly, and the "Cumulative List of Parts Affected," which appears in the Reader Aids section of the daily Federal Register. These two lists will identify the Federal Register page number of the latest amendment of any given rule.

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Each volume of the Code contains amendments published in the Federal Register since the last revision of that volume of the Code. Source citations for the regulations are referred to by volume number and page number of the Federal Register and date of publication. Publication dates and effective dates are usually not the same and care must be exercised by the user in determining the actual effective date. In instances where the effective date is beyond the cutoff date for the Code a note has been inserted to reflect the future effective date. In those instances where a regulation published in the Federal Register states a date certain for expiration, an appropriate note will be inserted following the text.

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The Paperwork Reduction Act of 1980 (Pub. L. 96-511) requires Federal agencies to display an OMB control number with their information collection request.
Many agencies have begun publishing numerous OMB control numbers as amendments to existing regulations in the CFR. These OMB numbers are placed as close as possible to the applicable recordkeeping or reporting requirements.

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What is incorporation by reference? Incorporation by reference was established by statute and allows Federal agencies to meet the requirement to publish regulations in the Federal Register by referring to materials already published elsewhere. For an incorporation to be valid, the Director of the Federal Register must approve it. The legal effect of incorporation by reference is that the material is treated as if it were published in full in the Federal Register (5 U.S.C. 552(a)). This material, like any other properly issued regulation, has the force of law.

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(a) The incorporation will substantially reduce the volume of material published in the Federal Register.
(b) The matter incorporated is in fact available to the extent necessary to afford fairness and uniformity in the administrative process.
(c) The incorporating document is drafted and submitted for publication in accordance with 1 CFR part 51.

Properly approved incorporations by reference in this volume are listed in the Finding Aids at the end of this volume.

What if the material incorporated by reference cannot be found? If you have any problem locating or obtaining a copy of material listed in the Finding Aids of this volume as an approved incorporation by reference, please contact the agency that issued the regulation containing that incorporation. If, after contacting the agency, you find the material is not available, please notify the Director of the Federal Register, National Archives and Records Administration, Washington DC 20408, or call (202) 523-4534.

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An index to the text of “Title 3—The President” is carried within that volume.

The Federal Register Index is issued monthly in cumulative form. This index is based on a consolidation of the “Contents” entries in the daily Federal Register.
A List of CFR Sections Affected (LSA) is published monthly, keyed to the revision dates of the 50 CFR titles.

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RAYMOND A. MOSLEY,
Director,
Office of the Federal Register.

January 1, 1999.
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Redesignation tables appear in the Finding Aids section of the volume containing parts 60-139.

For this volume, Melanie L. Marcec was Chief Editor. The Code of Federal Regulations publication program is under the direction of Frances D. McDonald, assisted by Alomha S. Morris.
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SOURCE: Docket No. 25910, 62 FR 16298, Apr. 4, 1997, unless otherwise noted.

Special Federal Aviation Regulations
SFAR No. 58

EDITORIAL NOTE: For the text of SFAR No. 58, see part 121 of this chapter.

SFAR NO. 73—ROBINSON R–22/R–44 SPECIAL TRAINING AND EXPERIENCE REQUIREMENTS

Sections
1. Applicability.
2. Required training, aeronautical experience, endorsements, and flight review.
3. Expiration date.

1. Applicability. Under the procedures prescribed herein, this SFAR applies to all persons who seek to manipulate the controls or act as pilot in command of a Robinson model R–22 or R–44 helicopter. The requirements stated in this SFAR are in addition to the current requirements of part 61.

2. Required training, aeronautical experience, endorsements, and flight review.

(a) Awareness Training:
(1) Except as provided in paragraph (a)(2) of this section, no person may manipulate the controls of a Robinson model R–22 or R–44 helicopter after March 27, 1995, for the purpose of flight unless the awareness training specified in paragraph (a)(3) of this section is completed and the person’s logbook has been endorsed by a certified flight instructor authorized under paragraph (b)(3) of this section.

(2) A person who holds a rotorcraft category and helicopter class rating on that person’s pilot certificate and meets the experience requirements of paragraph (b)(1) or paragraph (b)(2) of this section may not manipulate the controls of a Robinson model R–22 or R–44 helicopter for the purpose of flight after April 26, 1995, unless the awareness training specified in paragraph (a)(3) of this section is completed and the person’s logbook has been endorsed by a certified flight
Federal Aviation Administration, DOT

instructor authorized under paragraph (b)(5) of this section.

(3) Awareness training must be conducted by a certified flight instructor who has been endorsed under paragraph (b)(5) of this section and consists of instruction in the following general subject areas:

(i) Energy management;
(ii) Mast bumping;
(iii) Low rotor RPM (blade stall);
(iv) Low G hazards; and
(v) Rotor RPM decay.

(4) A person who can show satisfactory completion of the manufacturer’s safety course after January 1, 1994, may obtain an endorsement from an FAA aviation safety inspector in lieu of completing the awareness training required in paragraphs (a)(1) and (a)(2) of this section.

(b) Aeronautical Experience:

(1) No person may act as pilot in command of a Robinson model R-44 unless that person:

(i) Has had at least 200 flight hours in helicopters, at least 50 flight hours of which were in the Robinson R-22; or
(ii) Has had at least 10 hours dual instruction in the Robinson R-22 and has received an endorsement from a certified flight instructor authorized under paragraph (b)(5) of this section that the individual has been given the training required by this paragraph and is proficient to act as pilot in command of an R-22. Beginning 12 calendar months after the date of the endorsement, the individual may not act as pilot in command unless the individual has completed a flight review in a Robinson R-22 within the preceding 12 calendar months and obtained an endorsement for that flight review. The dual instruction must include at least the following abnormal and emergency procedures flight training—

(A) Enhanced training in autorotation procedures;
(B) Engine rotor RPM control without the use of the governor;
(C) Low rotor RPM recognition and recovery; and
(D) Effects of low G maneuvers and proper recovery procedures.

(2) No person may act as pilot in command of a Robinson model R-44 unless that person—

(i) Has had at least 200 flight hours in helicopters, at least 50 flight hours of which were in the Robinson R-44. The pilot in command may credit up to 25 flight hours in the Robinson R-22 toward the 50 hour requirement in the Robinson R-44; or
(ii) Has had at least 10 hours dual instruction in a Robinson helicopter, at least 5 hours of which must have been accomplished in the Robinson R-44 helicopter and has received an endorsement from a certified flight instructor authorized under paragraph (b)(5) of this section that the individual has been given the training required by this paragraph and is proficient to act as pilot in command of an R-44. Beginning 12 calendar months after the date of the endorsement, the individual may not act as pilot in command unless the individual has completed a flight review in a Robinson R-44 within the preceding 12 calendar months and obtained an endorsement for that flight review. The dual instruction must include at least the following abnormal and emergency procedures flight training—

(A) Enhanced training in autorotation procedures;
(B) Engine rotor RPM control without the use of the governor;
(C) Low rotor RPM recognition and recovery; and
(D) Effects of low G maneuvers and proper recovery procedures.

(4) A person who does not hold a rotorcraft category and helicopter class rating must have had at least 20 hours of dual instruction in a Robinson R-22 helicopter prior to operating it in solo flight. In addition, the person must obtain an endorsement from a certified flight instructor authorized under paragraph (b)(5) of this section that instruction has been given in those maneuvers and procedures, and the instructor has found the applicant proficient to solo a Robinson R-22. This endorsement is valid for a period of 90 days. The dual instruction must include at least the following abnormal and emergency procedures flight training:

(i) Enhanced training in autorotation procedures,
(ii) Engine rotor RPM control without the use of the governor,
(iii) Low rotor RPM recognition and recovery, and
(iv) Effects of low G maneuvers and proper recovery procedures.

(4) A person who does not hold a rotorcraft category and helicopter class rating must have had at least 20 hours of dual instruction in a Robinson R-44 helicopter prior to operating it in solo flight. In addition, the person must obtain an endorsement from a certified flight instructor authorized under paragraph (b)(5) of this section that instruction has been given in those maneuvers and procedures, and the instructor has found the applicant proficient to solo a Robinson R-44. This endorsement is valid for a period of 90 days. The dual instruction must include at least the following abnormal and emergency procedures flight training:

(i) Enhanced training in autorotation procedures,
(ii) Engine rotor RPM control without the use of the governor,
(iii) Low rotor RPM recognition and recovery, and
(iv) Effects of low G maneuvers and proper recovery procedures.
§ 61.1

(5) No certificated flight instructor may provide instruction or conduct a flight review in a Robinson R–22 or R–44 unless that instructor—
   (i) Completes the awareness training in paragraph 2(a) of this SFAR.
   (ii) For the Robinson R–22, has had at least 200 flight hours in helicopters, at least 50 flight hours of which were in the Robinson R–22, or for the Robinson R–44, has had at least 200 flight hours in helicopters, 50 flight hours of which were in Robinson helicopters. Up to 25 flight hours of Robinson R–22 flight time may be credited toward the 50 hour requirement.
   (iii) Has completed flight training in a Robinson R–22, R–44, or both, on the following abnormal and emergency procedures—
      (A) Enhanced training in autorotation procedures;
      (B) Engine rotor RPM control without the use of the governor;
      (C) Low rotor RPM recognition and recovery; and
      (D) Effects of low G maneuvers and proper recovery procedures.
   (iv) Has been authorized by endorsement from an FAA aviation safety inspector or authorized designated examiner that the instructor has completed the appropriate training, meets the experience requirements and has satisfactorily demonstrated an ability to provide instruction on the general subject areas of paragraph 2(a)(3) of this SFAR, and the flight training identified in paragraph 2(b)(5)(iii) of this SFAR.
   (c) Flight Review:
      (1) No flight review completed to satisfy §61.56 by an individual after becoming eligible to function as pilot in command in a Robinson R–22 helicopter shall be valid for the operation of R–22 helicopter unless that flight review was taken in an R–22.
      (2) No flight review completed to satisfy §61.56 by an individual after becoming eligible to function as pilot in command in a Robinson R–44 helicopter shall be valid for the operation of R–44 helicopter unless that flight review was taken in the R–44.
      (3) The flight review will include a review of the awareness training subject areas of paragraph 2(a)(3) of this SFAR and the flight training identified in paragraph 2(b) of this SFAR.
   (d) Currency Requirements: No person may act as pilot in command of a Robinson model R–22 or R–44 helicopter carrying passengers unless the pilot in command has met the recency of flight experience requirements of §61.57 in an R–22 or R–44, as appropriate.
   3. Expiration date. This SFAR expires on December 31, 2002, unless sooner superseded or rescinded.

Subpart A—General

§ 61.1 Applicability and definitions.

(a) This part prescribes:
   (1) The requirements for issuing pilot, flight instructor, and ground instructor certificates and ratings; the conditions under which those certificates and ratings are necessary; and the privileges and limitations of those certificates and ratings.
   (2) The requirements for issuing pilot, flight instructor, and ground instructor authorizations; the conditions under which those authorizations are necessary; and the privileges and limitations of those authorizations.
   (3) The requirements for issuing pilot, flight instructor, and ground instructor certificates and ratings for persons who have taken courses approved by the Administrator under other parts of this chapter. (b) For the purpose of this part:
      (1) Aeronautical experience means pilot time obtained in an aircraft, flight simulator, or flight training device for meeting the appropriate training and flight time requirements for an airmen certificate, rating, flight review, or recency of flight experience requirements of this part.
      (2) Authorized instructor means—
         (i) A person who holds a valid ground instructor certificate issued under part 61 or part 143 of this chapter when conducting ground training in accordance with the privileges and limitations of his or her ground instructor certificate;
         (ii) A person who holds a current flight instructor certificate issued under part 61 of this chapter when conducting ground training or flight training in accordance with the privileges and limitations of his or her flight instructor certificate; or
         (iii) A person authorized by the Administrator to provide ground training or flight training under SFAR No. 58, or part 61, 121, 135, or 142 of this chapter when conducting ground training or flight training in accordance with that authority.
      (3) Cross-country time means—
         (i) Except as provided in paragraphs (b)(3)(ii), (iii), (iv), and (v) of this section, time acquired during a flight—
(A) Conducted by a person who holds a pilot certificate;
(B) Conducted in an aircraft;
(C) That includes a landing at a point other than the point of departure; and
(D) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.

(ii) For the purpose of meeting the aeronautical experience requirements (except for a rotorcraft category rating), for a private pilot certificate, a commercial pilot certificate, or an instrument rating, or for the purpose of exercising recreational pilot privileges (except in a rotorcraft) under § 61.101(c), time acquired during a flight—
(A) Conducted in an appropriate aircraft;
(B) That includes a point of landing that was at least a straight-line distance of more than 50 nautical miles from the original point of departure; and
(C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems.

(iii) For the purpose of meeting the aeronautical experience requirements for any pilot certificate with a rotorcraft category rating, or for the purpose of exercising recreational pilot privileges, in a rotorcraft, under § 61.101(c), time acquired during a flight—
(A) Conducted in an appropriate aircraft;
(B) That includes a point of landing that was at least a straight-line distance of more than 50 nautical miles from the original point of departure; and
(C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems to navigate to the landing point.

(iv) For the purpose of meeting the aeronautical experience requirements for an airline transport pilot certificate (except with a rotorcraft category rating), time acquired during a flight—
(A) Conducted in an appropriate aircraft;
(B) That is at least a straight-line distance of more than 50 nautical miles from the original point of departure; and
(C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems.

(v) For a military pilot who qualifies for a commercial pilot certificate (except with a rotorcraft category rating) under § 61.73 of this part, time acquired during a flight—
(A) Conducted in an appropriate aircraft;
(B) That is at least a straight-line distance of more than 50 nautical miles from the original point of departure; and
(C) That involves the use of dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems.

(4) Examiner means any person who is authorized by the Administrator to conduct a pilot proficiency test or a practical test for an airman certificate or rating issued under this part, or a person who is authorized to conduct a knowledge test under this part.

(5) Flight simulator means a device that—
(i) Is a full-size aircraft cockpit replica of a specific type of aircraft, or make, model, and series of aircraft;
(ii) Includes the hardware and software necessary to represent the aircraft in ground operations and flight operations;
(iii) Uses a force cueing system that provides cues at least equivalent to those cues provided by a 3 degree freedom of motion system;
(iv) Uses a visual system that provides at least a 45 degree horizontal field of view and a 30 degree vertical field of view simultaneously for each pilot; and
(v) Has been evaluated, qualified, and approved by the Administrator.

(6) Flight training means that training, other than ground training, received from an authorized instructor in flight in an aircraft.

(7) Flight training device means a device that—
(i) Is a full-size replica of the instruments, equipment, panels, and controls of an aircraft, or set of aircraft, in an
§ 61.3 Requirement for certificates, ratings, and authorizations.

(a) Pilot certificate. A person may not act as pilot in command or in any other capacity as a required pilot flight crewmember of a civil aircraft of U.S. registry, unless that person has a valid pilot certificate or special purpose pilot authorization issued under this part in that person's physical possession or readily accessible in the aircraft when exercising the privileges of that pilot certificate or authorization. However, when the aircraft is operated within a foreign country, a current pilot license issued by the country in which the aircraft is operated may be used.

(b) Required pilot certificate for operating a foreign-registered aircraft. A person may not act as pilot in command or in any other capacity as a required pilot flight crewmember of a civil aircraft of foreign registry within the United States, unless that person's pilot certificate:

(1) Is valid and in that person's physical possession, or readily accessible in the aircraft when exercising the privileges of that pilot certificate; and

(2) Has been issued under this part, or has been issued or validated by the country in which the aircraft is registered.

(c) Medical certificate. (1) Except as provided for in paragraph (c)(2) of this section, a person may not act as pilot in command or in any other capacity as a required pilot flight crewmember of an aircraft, under a certificate issued to that person under this part, unless that person has a current and appropriate medical certificate that has been issued under part 67 of this chapter, or other documentation acceptable to the Administrator, which is in that person's physical possession or readily accessible in the aircraft.

(2) A person is not required to meet the requirements of paragraph (c)(1) of this section if that person—

(i) Is exercising the privileges of a student pilot certificate while seeking
§ 61.3 Flight instructor certificate

(a) A person who holds a flight instructor certificate issued under this part must have that certificate, or other documentation acceptable to the Administrator, in that person's physical possession or readily accessible in the aircraft when exercising the privileges of that flight instructor certificate.

(b) Except as provided in paragraph (d)(3) of this section, no person other than the holder of a flight instructor certificate issued under this part with the appropriate rating on that certificate may—

(i) Give training required to qualify a person for solo flight and solo cross-country flight;

(ii) Endorse an applicant for a—

(A) Pilot certificate or rating issued under this part;

(B) Flight instructor certificate or rating issued under this part; or

(C) Ground instructor certificate or rating issued under this part;

(iii) Endorse a pilot logbook to show training given; or

(iv) Endorse a student pilot certificate and logbook for solo operating privileges.

(3) A flight instructor certificate issued under this part is not necessary—

(i) Under paragraph (d)(2) of this section, if the training is given by the holder of a commercial pilot certificate with a lighter-than-air rating, provided the training is given in accordance with the privileges of the certificate in a lighter-than-air aircraft;

(ii) Under paragraph (d)(2) of this section, if the training is given by the holder of an airline transport pilot certificate with a rating appropriate to the aircraft in which the training is given, provided the training is given in accordance with the privileges of the certificate and conducted in accordance with an approved air carrier training program approved under part 121 or part 135 of this chapter;

(iii) Under paragraph (d)(2) of this section, if the training is given by a person who is qualified in accordance with subpart C of part 142 of this chapter, provided the training is conducted in accordance with an approved part 142 training program;

(iv) Under paragraphs (d)(2)(i), (d)(2)(ii)(C), and (d)(2)(iii) of this section, if the training is given by the holder of a ground instructor certificate in accordance with the privileges of the certificate; or

(v) Under paragraph (d)(2)(iii) of this section, if the training is given by an authorized flight instructor under § 61.41 of this part.

(e) Instrument rating. No person may act as pilot in command of a civil aircraft under IFR or in weather conditions less than the minimums prescribed for VFR flight unless that person holds:

(1) The appropriate aircraft category, class, type (if required), and instrument rating on that person's pilot certificate for any airplane, helicopter, or powered-lift being flown;
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(2) An airline transport pilot certificate with the appropriate aircraft category, class, and type rating (if required) for the aircraft being flown;
(3) For a glider, a pilot certificate with a glider category rating and an airplane instrument rating; or
(4) For an airship, a commercial pilot certificate with a lighter-than-air category rating and airship class rating.

(f) Category II pilot authorization. Except for a pilot conducting Category II operations under part 121 or part 135, a person may not:
(1) Act as pilot in command of a civil aircraft during Category II operations unless that person—
   (i) Holds a current Category II pilot authorization for that category or class of aircraft, and the type of aircraft, if applicable; or
   (ii) In the case of a civil aircraft of foreign registry, is authorized by the country of registry to act as pilot in command of that aircraft in Category II operations.
(2) Act as second in command of a civil aircraft during Category II operations unless that person—
   (i) Holds a valid pilot certificate with category and class ratings for that aircraft and a current instrument rating for that category aircraft;
   (ii) Holds an airline transport pilot certificate with category and class ratings for that aircraft; or
   (iii) In the case of a civil aircraft of foreign registry, is authorized by the country of registry to act as second in command of that aircraft during Category II operations.

(h) Category III pilot authorization. Except for a pilot conducting Category III operations under part 121 or part 135, a person may not:
(1) Act as pilot in command of a civil aircraft during Category III operations unless that person—
   (i) Holds a current Category III pilot authorization for that category or class of aircraft, and the type of aircraft, if applicable; or
   (ii) In the case of a civil aircraft of foreign registry, is authorized by the country of registry to act as pilot in command of that aircraft in Category III operations.
(2) Act as second in command of a civil aircraft during Category III operations unless that person—
   (i) Holds a valid pilot certificate with category and class ratings for that aircraft and a current instrument rating for that category aircraft;
   (ii) Holds an airline transport pilot certificate with category and class ratings for that aircraft; or
   (iii) In the case of a civil aircraft of foreign registry, is authorized by the country of registry to act as second in command of that aircraft during Category III operations.

(i) Ground instructor certificate. (1) Each person who holds a ground instructor certificate issued under this part must have that certificate in that person’s physical possession or immediately accessible when exercising the privileges of that certificate.
(2) Except as provided in paragraph (i)(3) of this section, no person other than the holder of a ground instructor certificate, issued under this part or part 143, with the appropriate rating on that certificate may—
   (i) Give ground training required to qualify a person for solo flight and solo cross-country flight;
   (ii) Endorse an applicant for a knowledge test required for a pilot, flight instructor, or ground instructor certificate or rating issued under this part; or
   (iii) Endorse a pilot logbook to show ground training given.
(3) A ground instructor certificate issued under this part is not necessary—
   (i) Under paragraph (i)(2) of this section, if the training is given by the
holder of a flight instructor certificate issued under this part in accordance with the privileges of that certificate;

(ii) Under paragraph (i)(2) of this section, if the training is given by the holder of a commercial pilot certificate with a lighter-than-air rating, provided the training is given in accordance with the privileges of the certificate in a lighter-than-air aircraft;

(iii) Under paragraph (i)(2) of this section, if the training is given by the holder of an airline transport pilot certificate with a rating appropriate to the aircraft in which the training is given, provided the training is given in accordance with the privileges of the certificate and conducted in accordance with an approved air carrier training program approved under part 121 or part 135 of this chapter;

(iv) Under paragraph (i)(2) of this section, if the training is given by a person who is qualified in accordance with subpart C of part 142 of this chapter, provided the training is conducted in accordance with an approved part 142 training program; or

(v) Under paragraph (i)(2)(iii) of this section, if the training is given by an authorized flight instructor under § 61.41 of this part.

(j) Age limitation for certain operations.

(1) Age limitation. Except as provided in paragraph (j)(3) of this section, no person who holds a pilot certificate issued under this part shall serve as a pilot on a civil airplane of U.S. registry in the following operations if the person has reached his or her 60th birthday—

(i) Scheduled international air services carrying passengers in turbojet-powered airplanes;

(ii) Scheduled international air services carrying passengers in airplanes having a passenger-seat configuration of more than nine passenger seats, excluding each crewmember seat;

(iii) Non-scheduled international air transportation for compensation or hire in airplanes having a passenger-seat configuration of more than 30 passenger seats, excluding each crewmember seat; or

(iv) Scheduled international air services, or non-scheduled international air transportation for compensation or hire, in airplanes having a payload capacity of more than 7,500 pounds.

(2) Definitions. (i) “International air service,” as used in paragraph (j) of this section, means scheduled air service performed in airplanes for the public transport of passengers, mail, or cargo, in which the service passes through the airspace over the territory of more than one country.

(ii) “International air transportation,” as used in paragraph (j) of this section, means air transportation performed in airplanes for the public transport of passengers, mail, or cargo, in which the service passes through the airspace over the territory of more than one country.

(3) Delayed pilot age limitation. Until December 20, 1999, a person may serve as a pilot in operations covered by this paragraph after that person has reached his or her 60th birthday if, on March 20, 1997, that person was employed as a pilot in operations covered by this paragraph.

(k) Special purpose pilot authorization. Any person that is required to hold a special purpose pilot authorization, issued in accordance with § 61.77 of this part, must have that authorization and the person’s foreign pilot license in that person’s physical possession or have it readily accessible in the aircraft when exercising the privileges of that authorization.

(l) Inspection of certificate. Each person who holds an airman certificate, medical certificate, authorization, or license required by this part must present it for inspection upon a request from:

(1) The Administrator;

(2) An authorized representative of the National Transportation Safety Board; or

(3) Any Federal, State, or local law enforcement officer.

§ 61.5 Certificates and ratings issued under this part.

(a) The following certificates are issued under this part to an applicant who satisfactorily accomplishes the training and certification requirements for the certificate sought:

(1) Pilot certificates—
   (i) Student pilot.
   (ii) Recreational pilot.
   (iii) Private pilot.
   (iv) Commercial pilot.
   (v) Airline transport pilot.

(2) Flight instructor certificates.

(3) Ground instructor certificates.

(b) The following ratings are placed on a pilot certificate (other than student pilot) when an applicant satisfactorily accomplishes the training and certification requirements for the rating sought:

(1) Aircraft category ratings—
   (i) Airplane.
   (ii) Rotorcraft.
   (iii) Glider.
   (iv) Powered-lift.

(2) Airplane class ratings—
   (i) Single-engine land.
   (ii) Multiengine land.
   (iii) Single-engine sea.
   (iv) Multiengine sea.

(3) Rotorcraft class ratings—
   (i) Helicopter.
   (ii) Gyroplane.

(4) Lighter-than-air class ratings—
   (i) Airship.
   (ii) Balloon.

(5) Aircraft type ratings—
   (i) Large aircraft other than lighter-than-air.
   (ii) Turbojet-powered airplanes.
   (iii) Other aircraft type ratings specified by the Administrator through the aircraft type certification procedures.

(c) The Administrator may approve a device other than a flight simulator or flight training device for specific purposes.

(d) The following ratings are placed on a flight instructor certificate when an applicant satisfactorily accomplishes the training and certification requirements for the rating sought:

(1) Aircraft category ratings—
   (i) Airplane.
   (ii) Rotorcraft.
   (iii) Glider.
   (iv) Powered-lift.

(2) Airplane class ratings—
   (i) Single-engine.
   (ii) Multiengine.

(3) Rotorcraft class ratings—
   (i) Helicopter.
   (ii) Gyroplane.

(4) Instrument ratings—
   (i) Instrument—Airplane.
   (ii) Instrument—Helicopter.
   (iii) Instrument—Powered-lift.

(e) The following ratings are placed on a ground instructor certificate when an applicant satisfactorily accomplishes the training and certification requirements for the rating sought:

(1) Basic.
(2) Advanced.
(3) Instrument.

§ 61.7 Obsolete certificates and ratings.

(a) The holder of a free-balloon pilot certificate issued before November 1, 1973, may not exercise the privileges of that certificate.
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§ 61.13 Issuance of airman certificates, ratings, and authorizations.

(a) Application. (1) An applicant for an airman certificate, rating, or authorization under this part must make that application on a form and in a manner acceptable to the Administrator.

(2) An applicant who is neither a citizen of the United States nor a resident alien of the United States—

(i) Must show evidence that the appropriate fee prescribed in appendix A to part 187 of this chapter has been paid when that person applies for a—

(A) Student pilot certificate that is issued outside the United States; or

(B) Knowledge test or practical test for an airman certificate or rating issued under this part, if the test is administered outside the United States.

(ii) May be refused issuance of any U.S. airman certificate, rating, or authorization by the Administrator.

(3) Except as provided in paragraph (a)(2)(ii) of this section, an applicant who satisfactorily accomplishes the training and certification requirements for the certificate, rating, or authorization sought is entitled to receive that airman certificate, rating, or authorization.

(b) Limitations. (1) An applicant who cannot comply with certain areas of operation required on the practical test because of physical limitations may be issued an airman certificate, rating, or authorization with the appropriate limitation placed on the applicant’s airman certificate provided the—

(i) Applicant is able to meet all other certification requirements for the airman certificate, rating, or authorization sought;

(ii) Physical limitation has been recorded with the FAA on the applicant’s medical records; and

(iii) Administrator determines that the applicant’s inability to perform the particular area of operation will not adversely affect safety.

(2) A limitation placed on a person’s airman certificate, rating, or authorization may be removed, provided that person demonstrates for
§ 61.14 Refusal to submit to a drug or alcohol test.

(a) This section applies to an employee who performs a function listed in appendix I to part 121 or appendix J to part 121 of this chapter directly or by contract for a part 121 air carrier, a part 135 air carrier, or for a person conducting operations as specified in §135.1(a)(5) of this chapter.

(b) Refusal by the holder of a certificate issued under this part to take a drug test required under the provisions of appendix I to part 121 or an alcohol test required under the provisions of appendix J to part 121 is grounds for:

(1) Denial of an application for any certificate, rating, or authorization issued under this part for a period of up to 1 year after the date of such refusal; and

(2) Suspension or revocation of any certificate, rating, or authorization issued under this part.

§ 61.15 Offenses involving alcohol or drugs.

(a) A conviction for the violation of any Federal or State statute relating to the growing, processing, manufacture, sale, disposition, possession, transportation, or importation of narcotic drugs, marijuana, or depressant or stimulant drugs or substances is grounds for:

(1) Denial of an application for any certificate, rating, or authorization issued under this part for a period of up to 1 year after the date of final conviction; or

(2) Suspension or revocation of any certificate, rating, or authorization issued under this part.

(b) Committing an act prohibited by §91.17(a) or §91.19(a) of this chapter is grounds for:

(1) Denial of an application for any certificate, rating, or authorization issued under this part for a period of up to 1 year after the date of that act; or

(2) Suspension or revocation of any certificate, rating, or authorization issued under this part.

(c) For the purposes of paragraphs (d), (e), and (f) of this section, a motor vehicle action means:

(1) A conviction after November 29, 1990, for the violation of any Federal or State statute relating to the operation...
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of a motor vehicle while intoxicated by alcohol or a drug, while impaired by alcohol or a drug, or while under the influence of alcohol or a drug;
(2) The cancellation, suspension, or revocation of a license to operate a motor vehicle after November 29, 1990, for a cause related to the operation of a motor vehicle while intoxicated by alcohol or a drug, while impaired by alcohol or a drug, or while under the influence of alcohol or a drug;
(3) The denial after November 29, 1990, of an application for a license to operate a motor vehicle while intoxicated by alcohol or a drug, while impaired by alcohol or a drug, or while under the influence of alcohol or a drug.
(d) Except for a motor vehicle action that results from the same incident or arises out of the same factual circumstances, a motor vehicle action occurring within 3 years of a previous motor vehicle action is grounds for:
(1) Denial of an application for any certificate, rating, or authorization issued under this part for a period of up to 1 year after the date of the last motor vehicle action; or
(2) Suspension or revocation of any certificate, rating, or authorization issued under this part.
(e) Each person holding a certificate issued under this part shall provide a written report of each motor vehicle action to the FAA, Civil Aviation Security Division (AMC-700), P.O. Box 25810, Oklahoma City, OK 73125, not later than 60 days after the motor vehicle action. The report must include:
(1) The person's name, address, date of birth, and airman certificate number;
(2) The type of violation that resulted in the conviction or the administrative action;
(3) The date of the conviction or administrative action;
(4) The State that holds the record of conviction or administrative action; and
(5) A statement of whether the motor vehicle action resulted from the same incident or arose out of the same factual circumstances related to a previously reported motor vehicle action.
(f) Failure to comply with paragraph (e) of this section is grounds for:
(1) Denial of an application for any certificate, rating, or authorization issued under this part for a period of up to 1 year after the date of the motor vehicle action; or
(2) Suspension or revocation of any certificate, rating, or authorization issued under this part.

§ 61.16 Refusal to submit to an alcohol test or to furnish test results.

A refusal to submit to a test to indicate the percentage by weight of alcohol in the blood, when requested by a law enforcement officer in accordance with §91.17(c) of this chapter, or a refusal to furnish or authorize the release of the test results requested by the Administrator in accordance with §91.17(c) or (d) of this chapter, is grounds for:
(a) Denial of an application for any certificate, rating, or authorization issued under this part for a period of up to 1 year after the date of that refusal; or
(b) Suspension or revocation of any certificate, rating, or authorization issued under this part.

§ 61.17 Temporary certificate.

(a) A temporary pilot, flight instructor, or ground instructor certificate or rating is issued for up to 120 days, at which time a permanent certificate will be issued to a person whom the Administrator finds qualified under this part.
(b) A temporary pilot, flight instructor, or ground instructor certificate or rating expires:
(1) On the expiration date shown on the certificate;
(2) Upon receipt of the permanent certificate; or
(3) Upon receipt of a notice that the certificate or rating sought is denied or revoked.

§ 61.19 Duration of pilot and instructor certificates.

(a) General. The holder of a certificate with an expiration date may not, after that date, exercise the privileges of that certificate.
(b) Student pilot certificate. A student pilot certificate expires 24 calendar
§ 61.21 Duration of a Category II and a Category III pilot authorization (for other than part 121 and part 135 use).

(a) A Category II pilot authorization or a Category III pilot authorization expires at the end of the sixth calendar month after the month in which it was issued or renewed.

(b) Upon passing a practical test for a Category II or Category III pilot authorization, the authorization may be renewed for each type of aircraft for which the authorization is held.

(c) A Category II or Category III pilot authorization for a specific type aircraft for which an authorization is held will not be renewed beyond 12 calendar months from the practical test was accomplished in that type aircraft.

(d) If the holder of a Category II or Category III pilot authorization passes the practical test for a renewal in the month before the authorization expires, the holder is considered to have passed it during the month the authorization expired.

§ 61.23 Medical certificates: Requirement and duration.

(a) Operations requiring a medical certificate. Except as provided in paragraph (b) of this section, a person:

(1) Must hold a first-class medical certificate when exercising the privileges of an airline transport pilot certificate;

(2) Must hold at least a second-class medical certificate when exercising the privileges of a commercial pilot certificate;

(3) Must hold at least a third-class medical certificate—

(i) When exercising the privileges of a private pilot certificate;

(ii) When exercising the privileges of a recreational pilot certificate;

(iii) Except as specified in paragraph (b)(3) of this section, when exercising the privileges of a student pilot certificate;

(iv) When exercising the privileges of a flight instructor certificate, except for a flight instructor certificate with a glider category rating, if the person is acting as the pilot in command or is serving as a required pilot flight crewmember; or

(v) Except for a glider category rating or a balloon class rating, prior to taking a practical test that is performed in an aircraft for a certificate or rating at the recreational, private, commercial, or airline transport pilot certificate level.

(b) Operations not requiring a medical certificate. A person is not required to hold a medical certificate:

(1) When exercising the privileges of a pilot certificate with a glider category rating;

(2) When exercising the privileges of a pilot certificate with a balloon class rating;

(3) When exercising the privileges of a student pilot certificate while seeking a pilot certificate with a glider category rating or balloon class rating;

(4) When exercising the privileges of a flight instructor certificate with a glider category rating;

(5) When exercising the privileges of a flight instructor certificate if the
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person is not acting as pilot in command or serving as a required pilot flight crewmember;
(6) When exercising the privileges of a ground instructor certificate;
(7) When serving as an examiner or check airman during the administration of a test or check for a certificate, rating, or authorization conducted in a flight simulator or flight training device; or
(8) When taking a test or check for a certificate, rating, or authorization conducted in a flight simulator or flight training device.

c) Duration of a medical certificate. (1) A first-class medical certificate expires at the end of the last day of—
(i) The sixth month after the month of the date of examination shown on the certificate for operations requiring an airline transport pilot certificate;
(ii) The 12th month after the month of the date of examination shown on the certificate for operations requiring a commercial pilot certificate or an air traffic control tower operator certificate; and
(iii) The period specified in paragraph (c)(3) of this section for operations requiring a recreational pilot certificate, a private pilot certificate, a flight instructor certificate (when acting as pilot in command or a required pilot flight crewmember in operations other than glider or balloon), or a student pilot certificate.

(2) A second-class medical certificate expires at the end of the last day of—
(i) The 12th month after the month of the date of examination shown on the certificate for operations requiring a commercial pilot certificate or an air traffic control tower operator certificate; and
(ii) The period specified in paragraph (c)(3) of this section for operations requiring a recreational pilot certificate, a private pilot certificate, a flight instructor certificate (when acting as pilot in command or a required pilot flight crewmember in operations other than glider or balloon), or a student pilot certificate.

(3) A third-class medical certificate for operations requiring a recreational pilot certificate, a private pilot certificate, a flight instructor certificate (when acting as pilot in command or a required pilot flight crewmember in operations other than glider or balloon), or a student pilot certificate issued—
(i) Before September 16, 1996, expires at the end of the 24th month after the month of the date of examination shown on the certificate; or
(ii) On or after September 16, 1996, expires at the end of:
(A) The 36th month after the month of the date of the examination shown on the certificate if the person has not reached his or her 40th birthday on or before the date of examination; or
(B) The 24th month after the month of the date of the examination shown on the certificate if the person has reached his or her 40th birthday on or before the date of the examination.

§ 61.25 Change of name.

(a) An application to change the name on a certificate issued under this part must be accompanied by the applicant's:
(1) Current airman certificate; and
(2) A copy of the marriage license, court order, or other document verifying the name change.

(b) The documents in paragraph (a) of this section will be returned to the applicant after inspection.

§ 61.27 Voluntary surrender or exchange of certificate.

(a) The holder of a certificate issued under this part may voluntarily surrender it for:
(1) Cancellation;
(2) Issuance of a lower grade certificate; or
(3) Another certificate with specific ratings deleted.

(b) Any request made under paragraph (a) of this section must include the following signed statement or its equivalent: "This request is made for my own reasons, with full knowledge that my (insert name of certificate or rating, as appropriate) may not be reissued to me unless I again pass the tests prescribed for its issuance."
§ 61.29 Replacement of a lost or destroyed airman or medical certificate or knowledge test report.

(a) A request for the replacement of a lost or destroyed airman certificate issued under this part must be made by letter to the Department of Transportation, FAA, Airman Certification Branch, P.O. Box 25082, Oklahoma City, OK 73125, and must be accompanied by a check or money order for the appropriate fee payable to the FAA.

(b) A request for the replacement of a lost or destroyed medical certificate must be made by letter to the Department of Transportation, FAA, Aeromedical Certification Branch, P.O. Box 25082, Oklahoma City, OK 73125, and must be accompanied by a check or money order for the appropriate fee payable to the FAA.

(c) A request for the replacement of a lost or destroyed knowledge test report must be made by letter to the Department of Transportation, FAA, Airman Certification Branch, P.O. Box 25082, Oklahoma City, OK 73125, and must be accompanied by a check or money order for the appropriate fee payable to the FAA.

(d) The letter requesting replacement of a lost or destroyed airman certificate, medical certificate, or knowledge test report must state:

(1) The name of the person;
(2) The permanent mailing address (including ZIP code), or if the permanent mailing address includes a post office box number, then the person’s current residential address;
(3) The social security number;
(4) The date and place of birth of the certificate holder; and
(5) Any available information regarding the-
   (i) Grade, number, and date of issuance of the certificate, and the ratings, if applicable;
   (ii) Date of the medical examination, if applicable; and
   (iii) Date the knowledge test was taken, if applicable.

(e) A person who has lost an airman certificate, medical certificate, or knowledge test report may obtain a facsimile from the FAA Aeromedical Certification Branch or the Airman Certification Branch, as appropriate, confirming that it was issued and the:

(1) Facsimile may be carried as an airman certificate, medical certificate, or knowledge test report, as appropriate, for up to 60 days pending the person’s receipt of a duplicate under paragraph (a), (b), or (c) of this section, unless the person has been notified that the certificate has been suspended or revoked.

(2) Request for such a facsimile must include the date on which a duplicate certificate or knowledge test report was previously requested.


§ 61.31 Type rating requirements, additional training, and authorization requirements.

(a) Type ratings required. A person who acts as a pilot in command of any of the following aircraft must hold a type rating for that aircraft:

(1) Large aircraft (except lighter-than-air).
(2) Turbojet-powered airplanes.
(3) Other aircraft specified by the Administrator through aircraft type certificate procedures.

(b) Authorization in lieu of a type rating. A person may be authorized to operate without a type rating for up to 60 days an aircraft requiring a type rating, provided—

(1) The Administrator has authorized the flight or series of flights;
(2) The Administrator has determined that an equivalent level of safety can be achieved through the operating limitations on the authorization;
(3) The person shows that compliance with paragraph (a) of this section is impracticable for the flight or series of flights; and
(4) The flight—
   (i) Involves only a ferry flight, training flight, test flight, or practical test for a pilot certificate or rating;
   (ii) Is within the United States;
   (iii) Does not involve operations for compensation or hire unless the compensation or hire involves payment for the use of the aircraft for training or taking a practical test; and
   (iv) Involves only the carriage of flight crewmembers considered essential for the flight.

(5) If the flight or series of flights cannot be accomplished within the
time limit of the authorization, the Administrator may authorize an additional period of up to 60 days to accomplish the flight or series of flights.

(c) Aircraft category, class, and type ratings: Limitations on the carriage of persons, or operating for compensation or hire. Unless a person holds a category, class, and type rating (if a class and type rating is required) that applies to the aircraft, that person may not act as pilot in command of an aircraft that is carrying another person, or is operated for compensation or hire. That person also may not act as pilot in command of that aircraft for compensation or hire.

(d) Aircraft category, class, and type ratings: Limitations on operating an aircraft as the pilot in command. To serve as the pilot in command of an aircraft, a person must—

(1) Hold the appropriate category, class, and type rating (if a class rating and type rating are required) for the aircraft to be flown; and

(2) Be receiving training for the purpose of obtaining an additional pilot certificate and rating that are appropriate to that aircraft, and be under the supervision of an authorized instructor; or

(3) Have received training required by this part that is appropriate to the aircraft category, class, and type rating (if a class or type rating is required) for the aircraft to be flown, and have received the required endorsements for solo flight in that aircraft.

(e) Additional training required for operating complex airplanes. (1) Except as provided in paragraph (e)(2) of this section, no person may act as pilot in command of a complex airplane (an airplane that has a retractable landing gear, flaps, and a controllable pitch propeller; or, in the case of a seaplane, flaps and a controllable pitch propeller), unless the person has—

(i) Received and logged ground and flight training from an authorized instructor in a complex airplane, or in a flight simulator or flight training device that is representative of a complex airplane, and has been found proficient in the operation and systems of the airplane; and

(ii) Received a one-time endorsement in the pilot’s logbook from an authorized instructor who certifies the person is proficient to operate a complex airplane.

(2) The training and endorsement required by paragraph (e)(1) of this section is not required if the person has logged flight time as pilot in command of a complex airplane, or in a flight simulator or flight training device that is representative of a complex airplane prior to August 4, 1997.

(f) Additional training required for operating high-performance airplanes. (1) Except as provided in paragraph (f)(2) of this section, no person may act as pilot in command of a high-performance airplane (an airplane with an engine of more than 200 horsepower), unless the person has—

(i) Received and logged ground and flight training from an authorized instructor in a high-performance airplane, or in a flight simulator or flight training device that is representative of a high-performance airplane, and has been found proficient in the operation and systems of the airplane; and

(ii) Received a one-time endorsement in the pilot’s logbook from an authorized instructor who certifies the person is proficient to operate a high-performance airplane.

(2) The training and endorsement required by paragraph (f)(1) of this section is not required if the person has logged flight time as pilot in command of a high-performance airplane, or in a flight simulator or flight training device that is representative of a high-performance airplane prior to August 4, 1997.

(g) Additional training required for operating pressurized aircraft capable of operating at high altitudes. (1) Except as provided in paragraph (g)(3) of this section, no person may act as pilot in command of a pressurized aircraft (an aircraft that has a service ceiling or maximum operating altitude, whichever is lower, above 25,000 feet MSL), unless that person has received and logged ground training from an authorized instructor who certifies the person has satisfactorily accomplished the ground
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The ground training must include at least the following subjects:

(i) High-altitude aerodynamics and meteorology;
(ii) Respiration;
(iii) Effects, symptoms, and causes of hypoxia and any other high-altitude sickness;
(iv) Duration of consciousness without supplemental oxygen;
(v) Effects of prolonged usage of supplemental oxygen;
(vi) Causes and effects of gas expansion and gas bubble formation;
(vii) Preventive measures for eliminating gas expansion, gas bubble formation, and high-altitude sickness;
(viii) Physical phenomena and incidents of decompression; and
(ix) Any other physiological aspects of high-altitude flight.

(2) Except as provided in paragraph (g)(3) of this section, no person may act as pilot in command of a pressurized aircraft unless that person has received and logged training from an authorized instructor in a pressurized aircraft, or in a flight simulator or flight training device that is representative of a pressurized aircraft, and obtained an endorsement in the person's logbook or training record from an authorized instructor who found the person proficient in the operation of a pressurized aircraft. The flight training must include at least the following subjects:

(i) Normal cruise flight operations while operating above 25,000 feet MSL;
(ii) Proper emergency procedures for simulated rapid decompression without actually depressurizing the aircraft; and
(iii) Emergency descent procedures.

(3) The training and endorsement required by paragraphs (g)(1) and (g)(2) of this section are not required if that person can document satisfactory accomplishment of any of the following in a pressurized aircraft, or in a flight simulator or flight training device that is representative of a pressurized aircraft:

(i) Serving as pilot in command before April 15, 1991;
(ii) Completing a pilot proficiency check for a pilot certificate or rating before April 15, 1991;
(iii) Completing an official pilot-in-command check conducted by the military services of the United States; or
(iv) Completing a pilot-in-command proficiency check under part 121, 125, or 135 of this chapter conducted by the Administrator or by an approved pilot check airman.

(h) Additional aircraft type-specific training. No person may serve as pilot in command of an aircraft that the Administrator has determined requires aircraft type-specific training unless that person has—

(1) Received and logged type-specific training in the aircraft, or in a flight simulator or flight training device that is representative of that type of aircraft; and
(2) Received a logbook endorsement from an authorized instructor who has found the person proficient in the operation of the aircraft and its systems.

(i) Additional training required for operating tailwheel airplanes. (1) Except as provided in paragraph (i)(2) of this section, no person may act as pilot in command of a tailwheel airplane unless that person has received and logged training from an authorized instructor in a tailwheel airplane, or in a flight simulator or flight training device that is representative of a tailwheel aircraft, and obtained an endorsement in the person's logbook or training record from an authorized instructor who found the person proficient in the operation of a tailwheel aircraft. The flight training must include at least the following subjects:

(i) Normal and crosswind takeoffs and landings;
(ii) Wheel landings (unless the manufacturer has recommended against such landings); and
(iii) Go-around procedures.

(2) The training and endorsement required by paragraph (i)(1) of this section is not required if the person logged pilot-in-command time in a tailwheel airplane before April 15, 1991.

(j) Additional training required for operating a glider. (1) No person may act as pilot in command of a glider—

(i) Using ground-tow procedures, unless that person has satisfactorily accomplished ground and flight training on ground-tow procedures and operations, and has received an endorsement from an authorized instructor who certifies in that pilot's logbook
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that the pilot has been found proficient in ground-tow procedures and operations;

(ii) Using aerotow procedures, unless that person has satisfactorily accomplished ground and flight training on aerotow procedures and operations, and has received an endorsement from an authorized instructor who certifies in that pilot’s logbook that the pilot has been found proficient in aerotow procedures and operations; or

(iii) Using self-launch procedures, unless that person has satisfactorily accomplished ground and flight training on self-launch procedures and operations, and has received an endorsement from an authorized instructor who certifies in that pilot’s logbook that the pilot has been found proficient in self-launch procedures and operations.

(2) The holder of a glider rating issued prior to August 4, 1997, is considered to be in compliance with the training and logbook endorsement requirements of this paragraph for the specific operating privilege for which the holder is already qualified.

(k) Exceptions. (1) This section does not require a category and class rating for aircraft not type certificated as airplanes, rotorcraft, or lighter-than-air aircraft, or a class rating for gliders or powered-lifts.

(2) The rating limitations of this section do not apply to—

(i) An applicant when taking a practical test given by an examiner;

(ii) The holder of a student pilot certificate;

(iii) The holder of a pilot certificate when operating an aircraft under the authority of an experimental or provisional aircraft type certificate;

(iv) The holder of a pilot certificate with a lighter-than-air category rating when operating a balloon; or

(v) The holder of a recreational pilot certificate operating under the provisions of §61.101(h).


§ 61.33 Tests: General procedure.

Tests prescribed by or under this part are given at times and places, and by persons designated by the Administrator.

§ 61.35 Knowledge test: Prerequisites and passing grades.

(a) An applicant for a knowledge test must have:

(1) Received an endorsement, if required by this part, from an authorized instructor certifying that the applicant accomplished the appropriate ground-training or a home-study course required by this part for the certificate or rating sought and is prepared for the knowledge test; and

(2) Proper identification at the time of application that contains the applicant’s—

(i) Photograph;

(ii) Signature;

(iii) Date of birth, which shows the applicant meets or will meet the age requirements of this part for the certificate sought before the expiration date of the airman knowledge test report; and

(iv) Actual residential address, if different from the applicant’s mailing address.

(b) The Administrator shall specify the minimum passing grade for the knowledge test.


§ 61.37 Knowledge tests: Cheating or other unauthorized conduct.

(a) An applicant for a knowledge test may not:

(1) Copy or intentionally remove any knowledge test;

(2) Give to another applicant or receive from another applicant any part or copy of a knowledge test;

(3) Give assistance on, or receive assistance on, a knowledge test during the period that test is being given;

(4) Take any part of a knowledge test on behalf of another person;

(5) Be represented by, or represent, another person for a knowledge test;

(6) Use any material or aid during the period that the test is being given, unless specifically authorized to do so by the Administrator; and

(7) Intentionally cause, assist, or participate in any act prohibited by this paragraph.
§ 61.39 Prerequisites for practical tests.

(a) Except as provided in paragraphs (b) and (c) of this section, to be eligible for a practical test for a certificate or rating issued under this part, an applicant must:

1. Pass the required knowledge test within the 24-calendar-month period preceding the month the applicant completes the practical test, if a knowledge test is required;
2. Present the knowledge test report at the time of application for the practical test, if a knowledge test is required;
3. Have satisfactorily accomplished the required training and obtained the aeronautical experience prescribed by this part for the certificate or rating sought;
4. Hold at least a current third-class medical certificate, if a medical certificate is required;
5. Meet the prescribed age requirement of this part for the issuance of the certificate or rating sought;
6. Have an endorsement, if required by this part, in the applicant’s logbook or training record that has been signed by an authorized instructor who certifies that the applicant—
   (i) Has received and logged training time within 60 days preceding the date of application in preparation for the practical test;
   (ii) Is prepared for the required practical test; and
   (iii) Has demonstrated satisfactory knowledge of the subject areas in which the applicant was deficient on the airman knowledge test; and
7. Have a completed and signed application form.

(b) Notwithstanding the provisions of paragraphs (a)(1) and (2) of this section, an applicant for an airline transport pilot certificate or an additional rating to an airline transport certificate may take the practical test for that certificate or rating with an expired knowledge test report, provided that the applicant:

1. Is employed as a flight crewmember by a certificate holder under part 121, 125, or 135 of this chapter at the time of the practical test and has satisfactorily accomplished that operator’s approved—
   (i) Pilot in command aircraft qualification training program that is appropriate to the certificate and rating sought; and
   (ii) Qualification training requirements appropriate to the certificate and rating sought; or
2. Is employed as a flight crewmember in scheduled U.S. military air transport operations at the time of the practical test, and has accomplished the pilot in command aircraft qualification training program that is appropriate to the certificate and rating sought.

(c) A person is not required to comply with the provisions of paragraph (a)(6) of this section if that person:

1. Holds a foreign-pilot license issued by a contracting State to the Convention on International Civil Aviation that authorizes at least the pilot privileges of the airman certificate sought;
2. Is applying for a type rating only, or a class rating with an associated type rating; or
3. Is applying for an airline transport pilot certificate or an additional rating to an airline transport pilot certificate in an aircraft that does not require an aircraft type rating practical test.

(d) If all increments of the practical test for a certificate or rating are not completed on one date, all remaining increments of the test must be satisfactorily completed not more than 60 calendar days after the date on which the applicant began the test.

(e) If all increments of the practical test for a certificate or a rating are not
satisfactorily completed within 60 calendar days after the date on which the applicant began the test, the applicant must retake the entire practical test, including those increments satisfactorily completed.


§ 61.41 Flight training received from flight instructors not certificated by the FAA.  
(a) A person may credit flight training toward the requirements of a pilot certificate or rating issued under this part, if that person received the training from:
   (1) A flight instructor of an Armed Force in a program for training military pilots of either—
      (i) The United States; or
      (ii) A foreign contracting State to the Convention on International Civil Aviation.
   (2) A flight instructor who is authorized to give such training by the licensing authority of a foreign contracting State to the Convention on International Civil Aviation, and the flight training is given outside the United States.
   (b) A flight instructor described in paragraph (a) of this section is only authorized to give endorsements to show training given.

§ 61.43 Practical tests: General procedures.  
(a) Except as provided in paragraph (b) of this section, the ability of an applicant for a certificate or rating issued under this part to perform the required tasks on the practical test is based on that applicant's ability to safely:
   (1) Perform the tasks specified in the areas of operation for the certificate or rating sought within the approved standards;
   (2) Demonstrate mastery of the aircraft with the successful outcome of each task performed never seriously in doubt;
   (3) Demonstrate satisfactory proficiency and competency within the approved standards;
   (4) Demonstrate sound judgment; and
   (5) Demonstrate single-pilot competence if the aircraft is type certificated for single-pilot operations.
   (b) If an applicant does not demonstrate single pilot proficiency, as required in paragraph (a)(5) of this section, a limitation of "Second in Command Required" will be placed on the applicant's airman certificate. The limitation may be removed if the applicant passes the appropriate practical test by demonstrating single-pilot competency in the aircraft in which single-pilot privileges are sought.
   (c) If an applicant fails any area of operation, that applicant fails the practical test.
   (d) An applicant is not eligible for a certificate or rating sought until all the areas of operation are passed.
   (e) The examiner or the applicant may discontinue a practical test at any time:
      (1) When the applicant fails one or more of the areas of operation; or
      (2) Due to inclement weather conditions, aircraft airworthiness, or any other safety-of-flight concern.
   (f) If a practical test is discontinued, the applicant is entitled credit for those areas of operation that were passed, but only if the applicant:
      (1) Passes the remainder of the practical test within the 60-day period after the date the practical test was discontinued;
      (2) Presents to the examiner for the retest the original notice of disapproval form or the letter of discontinuance form, as appropriate;
      (3) Satisfactorily accomplishes any additional training needed and obtains the appropriate instructor endorsements, if additional training is required; and
      (4) Presents to the examiner for the retest a properly completed and signed application.

§ 61.45 Practical tests: Required aircraft and equipment.  
(a) General. Except as provided in paragraph (a)(2) of this section or when permitted to accomplish the entire flight increment of the practical test in a flight simulator or a flight training device, an applicant for a certificate or rating issued under this part must furnish:
§ 61.47 Status of an examiner who is authorized by the Administrator to conduct practical tests.

(a) An examiner represents the Administrator for the purpose of conducting practical tests for certificates and ratings issued under this part and to observe an applicant’s ability to perform the areas of operation on the practical test.

(b) The examiner is not the pilot in command of the aircraft during the practical test unless the examiner agrees to act in that capacity for the flight or for a portion of the flight by prior arrangement with:

(1) The applicant; or

(2) A person who would otherwise act as pilot in command of the flight or for a portion of the flight.

(c) Notwithstanding the type of aircraft used during the practical test, the applicant and the examiner (and any other occupants authorized to be on board by the examiner) are not subject to the requirements or limitations for safely in the aircraft without the controls being easily reached.

(d) Simulated instrument flight equipment. An applicant for a practical test that involves maneuvering an aircraft solely by reference to instruments must furnish:

(1) Equipment on board the aircraft that permits the applicant to pass the areas of operation that apply to the rating sought; and

(2) A device that prevents the applicant from having visual reference outside the aircraft, but does not prevent the examiner from having visual reference outside the aircraft, and is otherwise acceptable to the Administrator.

(e) Aircraft with single controls. A practical test may be conducted in an aircraft having a single set of controls, provided:

(1) Examiner agrees to conduct the test;

(2) Test does not involve a demonstration of instrument skills; and

(3) Proficiency of the applicant can be observed by an examiner who is in a position to observe the applicant.

§ 61.49 Retesting after failure.
(a) An applicant for a knowledge or practical test who fails that test may reapply for the test only after the applicant has received:

(1) The necessary training from an authorized instructor who has determined that the applicant is proficient to pass the test; and

(2) An endorsement from an authorized instructor who gave the applicant the additional training.

(b) An applicant for a flight instructor certificate with an airplane category rating or, for a flight instructor certificate with a glider category rating, who has failed the practical test due to deficiencies in instructional proficiency on stall awareness, spin entry, spins, or spin recovery must:

(1) Comply with the requirements of paragraph (a) of this section before being retested;

(2) Bring an aircraft to the retest that is of the appropriate aircraft category for the rating sought and is certified for spins; and

(3) Demonstrate satisfactory instructional proficiency on stall awareness, spin entry, spins, and spin recovery to an examiner during the retest.

§ 61.51 Pilot logbooks.
(a) Training time and aeronautical experience. Each person must document and record the following time in a manner acceptable to the Administrator:

(1) Training and aeronautical experience used to meet the requirements for a certificate, rating, or flight review of this part.

(2) The aeronautical experience required for meeting the recent flight experience requirements of this part.

(b) Logbook entries. For the purposes of meeting the requirements of paragraph (a) of this section, each person must enter the following information for each flight or lesson logged:

(i) General—

(1) Date.

(ii) Total flight time or lesson time.

(iii) Location where the aircraft departed and arrived, or for lessons in a flight simulator or flight training device, the location where the lesson occurred.

(iv) Type and identification of aircraft, flight simulator, or flight training device, as appropriate.

(v) The name of a safety pilot, if required by §91.109(b) of this chapter.

(2) Type of pilot experience or training—

(i) Solo.

(ii) Pilot in command.

(iii) Second in command.

(iv) Flight and ground training received from an authorized instructor.

(v) Training received in a flight simulator or flight training device from an authorized instructor.

(3) Conditions of flight—

(i) Day or night.

(ii) Actual instrument.

(iii) Simulated instrument conditions in flight, a flight simulator, or a flight training device.

(c) Logging of pilot time. The pilot time described in this section may be used to:

(1) Apply for a certificate or rating issued under this part; or

(2) Satisfy the recent flight experience requirements of this part.

(d) Logging of solo flight time. Except for a student pilot performing the duties of pilot in command of an airship requiring more than one pilot flight crewmember, a pilot may log as solo flight time only that flight time when the pilot is the sole occupant of the aircraft.

(e) Logging pilot-in-command flight time. (1) A recreational, private, or commercial pilot may log pilot-in-command time only for that flight time during which that person—

(i) Is the sole manipulator of the controls of an aircraft for which the pilot is rated;

(ii) Is the sole occupant of the aircraft; or

(iii) Except for a recreational pilot, is acting as pilot in command of an aircraft on which more than one pilot is required under the type certification of the aircraft or the regulations under which the flight is conducted.

(2) An airline transport pilot may log as pilot-in-command time all of the
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Flight time while acting as pilot-in-command of an operation requiring an airline transport pilot certificate.

(3) An authorized instructor may log as pilot-in-command time all flight time while acting as an authorized instructor.

(4) A student pilot may log pilot-in-command time only when the student pilot—

(i) Is the sole occupant of the aircraft or is performing the duties of pilot of command of an airship requiring more than one pilot flight crewmember;

(ii) Has a current solo flight endorsement as required under §61.87 of this part; and

(iii) Is undergoing training for a pilot certificate or rating.

(f) Logging second-in-command flight time. A person may log second-in-command flight time only for that flight time during which that person:

(1) Is qualified in accordance with the second-in-command requirements of §61.55 of this part, and occupies a crewmember station in an aircraft that requires more than one pilot by the aircraft’s type certificate;

(2) Holds the appropriate category, class, and instrument rating (if an instrument rating is required for the flight) for the aircraft being flown, and more than one pilot is required under the type certification of the aircraft or the regulations under which the flight is being conducted.

(g) Logging instrument flight time. (1) A person may log instrument time only for that flight time when the person operates the aircraft solely by reference to instruments under actual or simulated instrument flight conditions.

(2) An authorized instructor may log instrument time when conducting instrument flight instruction in actual instrument flight conditions.

(3) For the purposes of logging instrument time to meet the recent instrument experience requirements of §61.57(c) of this part, the following information must be recorded in the person’s logbook—

(i) The location and type of each instrument approach accomplished; and

(ii) The name of the safety pilot, if required.

(4) A flight simulator or approved flight training device may be used by a person to log instrument time, provided an authorized instructor is present during the simulated flight.

(h) Logging training time. (1) A person may log training time when that person receives training from an authorized instructor in an aircraft, flight simulator, or flight training device.

(2) The training time must be logged in a logbook and must:

(i) Be endorsed in a legible manner by the authorized instructor; and

(ii) Include a description of the training given, the length of the training lesson, and the authorized instructor’s signature, certificate number, and certificate expiration date.

(i) Presentation of required documents. (1) Persons must present their pilot certificate, medical certificate, logbook, or any other record required by this part for inspection upon a reasonable request by—

(i) The Administrator;

(ii) An authorized representative from the National Transportation Safety Board; or

(iii) Any Federal, State, or local law enforcement officer.

(2) A student pilot must carry the following items in the aircraft on all solo cross-country flights as evidence of the required authorized instructor clearances and endorsements—

(i) Pilot logbook;

(ii) Student pilot certificate; and

(iii) Any other record required by this section.

(3) A recreational pilot must carry his or her logbook with the required authorized instructor endorsements on all solo flights—

(i) That exceed 50 nautical miles from the airport at which training was received;

(ii) Within airspace that requires communication with air traffic control;

(iii) Conducted between sunset and sunrise; or

(iv) In an aircraft for which the pilot does not hold an appropriate category or class rating.

§ 61.53 Prohibition on operations during medical deficiency.

(a) Operations that require a medical certificate. Except as provided for in paragraph (b) of this section, a person who holds a current medical certificate issued under part 67 of this chapter shall not act as pilot in command, or in any other capacity as a required pilot flight crewmember, while that person:

(1) Knows or has reason to know of any medical condition that would make the person unable to meet the requirements for the medical certificate necessary for the pilot operation; or

(2) Is taking medication or receiving other treatment for a medical condition that results in the person being unable to meet the requirements for the medical certificate necessary for the pilot operation.

(b) Operations that do not require a medical certificate. For operations provided for in §61.23(b) of this part, a person shall not act as pilot in command, or in any other capacity as a required pilot flight crewmember, while that person knows or has reason to know of any medical condition that would make the person unable to operate the aircraft in a safe manner.

§ 61.55 Second-in-command qualifications.

(a) Except as provided in paragraph (d) of this section, no person may serve as a second in command of an aircraft type certificated for more than one required pilot flight crewmember or in operations requiring a second in command unless that person holds:

(1) At least a current private pilot certificate with the appropriate category and class rating; and

(2) An instrument rating that applies to the aircraft being flown if the flight is under IFR.

(b) Except as provided in paragraph (d) of this section, no person may serve as a second in command of an aircraft type certificated for more than one required pilot flight crewmember or in operations requiring a second in command unless that person has within the previous 12 calendar months:

(1) Become familiar with the following information for the specific type aircraft for which second-in-command privileges are requested—

(i) Operational procedures applicable to the powerplant, equipment, and systems.

(ii) Performance specifications and limitations.

(iii) Normal, abnormal, and emergency operating procedures.

(iv) Flight manual.

(v) Placards and markings.

(2) Except as provided in paragraph (e) of this section, performed and logged pilot time in the type of aircraft or in a flight simulator that represents the type of aircraft for which second-in-command privileges are requested, which includes—

(i) Three takeoffs and three landings to a full stop as the sole manipulator of the flight controls;

(ii) Engine-out procedures and maneuvering with an engine out while executing the duties of pilot in command; and

(iii) Crew resource management training.

(c) If a person complies with the requirements in paragraph (b) of this section in the calendar month before or the calendar month after the month in which compliance with this section is required, then that person is considered to have accomplished the training and practice in the month it is due.

(d) This section does not apply to a person who is:

(1) Designated and qualified as a pilot in command under part 121, 125, or 135 of this chapter in that specific type of aircraft;

(2) Designated as the second in command under part 121, 125, or 135 of this chapter, in that specific type of aircraft;

(3) Designated as the second in command in that specific type of aircraft for the purpose of receiving flight training required by this section, and no passengers or cargo are carried on the aircraft; or

(4) Designated as a safety pilot for purposes required by §91.109(b) of this chapter.

(e) The holder of a commercial or airline transport pilot certificate with the appropriate category and class rating is not required to meet the requirements of paragraph (b)(2) of this section, provided the pilot:
§ 61.56 Flight review.

(a) Except as provided in paragraphs (b) and (f) of this section, a flight review consists of a minimum of 1 hour of flight training and 1 hour of ground training. The review must include:

1. A review of the current general operating and flight rules of part 91 of this chapter; and

2. A review of those maneuvers and procedures that, at the discretion of the person giving the review, are necessary for the pilot to demonstrate the safe exercise of the privileges of the pilot certificate.

(b) Glider pilots may substitute a minimum of three instructional flights in a glider, each of which includes a flight to traffic pattern altitude, in lieu of the 1 hour of flight training required in paragraph (a) of this section.

c) Except as provided in paragraphs (d), (e), and (g) of this section, no person may act as pilot in command of an aircraft unless, since the beginning of the 24th calendar month before the month in which that pilot acts as pilot in command, that person has—

1. Accomplished a flight review given in an aircraft for which that pilot is rated by an authorized instructor and

2. A logbook endorsed from an authorized instructor who gave the review certifying that the person has satisfactorily completed the review.

(d) A person who has, within the period specified in paragraph (c) of this section, passed a pilot proficiency check conducted by an examiner, an approved pilot check airman, or a U.S. Armed Force, for a pilot certificate, rating, or operating privilege need not accomplish the flight review required by this section.

(e) A person who has, within the period specified in paragraph (c) of this section, satisfactorily accomplished one or more phases of an FAA-sponsored pilot proficiency award program need not accomplish the flight review required by this section.

(f) A person who holds a current flight instructor certificate who has, within the period specified in paragraph (c) of this section, satisfactorily completed a renewal of a flight instructor certificate under the provisions in §61.197 need not accomplish the 1 hour of ground training specified in paragraph (a) of this section.

(g) A student pilot need not accomplish the flight review required by this section provided the student pilot is undergoing training for a certificate and has a current solo flight endorsement as required under §61.87 of this part.

(h) The requirements of this section may be accomplished in combination with the requirements of §61.57 and other applicable recent experience requirements at the discretion of the authorized instructor conducting the flight review.

(i) A flight simulator or flight training device may be used to meet the flight review requirements of this section subject to the following conditions:

§ 61.57 Recent flight experience: Pilot in command.

(a) General experience. (1) Except as provided in paragraph (e) of this section, no person may act as a pilot in command of an aircraft carrying passengers or of an aircraft certificated for more than one pilot flight crew-member unless that person has made at least three takeoffs and three landings within the preceding 90 days, and—

(i) The person acted as the sole manipulator of the flight controls; and

(ii) The required takeoffs and landings were performed in an aircraft of the same category, class, and type (if a type rating is required), and, if the aircraft to be flown is an airplane with a tailwheel, the takeoffs and landings must have been made to a full stop in an airplane with a tailwheel.

(2) For the purpose of meeting the requirements of paragraph (a)(1) of this section, a person may act as pilot in command of an aircraft under day VFR or day IFR, provided no persons or property are carried on board the aircraft, other than those necessary for the conduct of the flight.

(3) The takeoffs and landings required by paragraph (a)(1) of this section may be accomplished in a flight simulator or flight training device that is—

(i) Approved by the Administrator for landings; and

(ii) Used in accordance with an approved course conducted by a training center certificated under part 142 of this chapter.

(b) Night takeoff and landing experience. (1) Except as provided in paragraph (e) of this section, no person may act as pilot in command of an aircraft carrying passengers during the period beginning 1 hour after sunset and ending 1 hour before sunrise, unless within the preceding 90 days that person has made at least three takeoffs and three landings to a full stop during the period beginning 1 hour after sunset and ending 1 hour before sunrise, and—

(i) That person acted as sole manipulator of the flight controls; and

(ii) The required takeoffs and landings were performed in an aircraft of the same category, class, and type (if a type rating is required).

(2) The takeoffs and landings required by paragraph (b)(1) of this section may be accomplished in a flight simulator that is—

(i) Approved by the Administrator for takeoffs and landings, if the visual system is adjusted to represent the period described in paragraph (b)(1) of this section; and

(ii) Used in accordance with an approved course conducted by a training center certificated under part 142 of this chapter.

(c) Instrument experience. Except as provided in paragraph (e) of this section, no person may act as pilot in command under IFR or in weather conditions less than the minimums prescribed for VFR, unless within the preceding 6 calendar months, that person has:

(1) For the purpose of obtaining instrument experience in an aircraft (other than a glider), performed and logged under actual or simulated instrument conditions, either in flight in the appropriate category of aircraft for the instrument privileges sought or in a flight simulator or flight training device that is representative of the aircraft category for the instrument privileges sought—

(i) At least six instrument approaches;

(ii) Holding procedures; and

(iii) Intercepting and tracking courses through the use of navigation systems.
§ 61.58 Pilot-in-command proficiency check: Operation of aircraft requiring more than one pilot flight crewmember.

(a) Except as otherwise provided in this section, to serve as pilot in command of an aircraft that is type certificated for more than one required pilot flight crewmember, a person must—

(1) Within the preceding 12 calendar months, complete a pilot-in-command proficiency check in an aircraft that is type certificated for more than one required pilot flight crewmember; and

(2) Within the preceding 24 calendar months, complete a pilot-in-command proficiency check in the particular type of aircraft in which that person will serve as pilot in command.

(b) This section does not apply to persons conducting operations under part 121, 125, 133, 135, or 137 of this chapter, or persons maintaining continuing qualification under an Advanced Qualification Program approved under SFAR 58.

(c) The pilot-in-command proficiency check given in accordance with the provisions of part 121, 125, 133, 135, or 137 of this chapter may be used to satisfy the requirements of this section.

(d) The pilot-in-command proficiency check required by paragraph (a) of this section may be accomplished by satisfactory completion of one of the following:

(1) A pilot-in-command proficiency check conducted by a person authorized by the Administrator, consisting of the maneuvers and procedures required for a type rating, in an aircraft type certificated for more than one required pilot flight crewmember;
(2) The practical test required for a type rating, in an aircraft type certificated for more than one required pilot flight crewmember;

(3) The initial or periodic practical test required for the issuance of a pilot examiner or check airman designation, in an aircraft type certificated for more than one required pilot flight crewmember; or

(4) A military flight check required for a pilot in command with instrument privileges, in an aircraft that the military requires to be operated by more than one pilot flight crewmember.

(e) A check or test described in paragraphs (d)(1) through (d)(4) of this section may be accomplished in a flight simulator under part 142 of this chapter, subject to the following:

(1) Except as provided for in paragraphs (e)(2) and (e)(3) of this section, if an otherwise qualified and approved flight simulator used for a pilot-in-command proficiency check is not qualified and approved for a specific required maneuver—

(i) The training center must annotate, in the applicant's training record, the maneuver or maneuvers omitted; and

(ii) Prior to acting as pilot in command, the pilot must demonstrate proficiency in each omitted maneuver in an aircraft or flight simulator qualified and approved for each omitted maneuver.

(2) If the flight simulator used pursuant to paragraph (e) of this section is not qualified and approved for circling approaches—

(i) The applicant's record must include the statement, “Proficiency in circling approaches not demonstrated”;

(ii) The applicant may not perform circling approaches as pilot in command when weather conditions are less than the basic VFR conditions described in §91.155 of this chapter, until proficiency in circling approaches has been successfully demonstrated in a flight simulator qualified and approved for circling approaches or in an aircraft to a person authorized by the Administrator to conduct the check required by this section.

(3) If the flight simulator used pursuant to paragraph (e) of this section is not qualified and approved for landings, the applicant must—

(i) Hold a type rating in the airplane represented by the simulator; and

(ii) Have completed within the preceding 90 days at least three takeoffs and three landings (one to a full stop) as the sole manipulator of the flight controls in the type airplane for which the pilot-in-command proficiency check is sought.

(f) For the purpose of meeting the pilot-in-command proficiency check requirements of paragraph (a) of this section, a person may act as pilot in command of a flight under day VFR conditions or day IFR conditions if no person or property is carried, other than as necessary to demonstrate compliance with this part.

(g) If a pilot takes the pilot-in-command proficiency check required by this section in the calendar month before or the calendar month after the month in which it is due, the pilot is considered to have taken it in the month in which it was due for the purpose of computing when the next pilot-in-command proficiency check is due.

§ 61.60 Change of address.

The holder of a pilot, flight instructor, or ground instructor certificate who has made a change in permanent mailing address may not, after 30 days from that date, exercise the privileges of the certificate unless the holder has notified in writing the FAA, Airman Certification Branch, P.O. Box 25082, Oklahoma City, OK 73125, of the new permanent mailing address, or if the permanent mailing address includes a post office box number, then the holder's current residential address.

Subpart B—Aircraft Ratings and Pilot Authorizations

§ 61.61 Applicability.

This subpart prescribes the requirements for the issuance of additional aircraft ratings after a pilot certificate is issued, and the requirements for and limitations of pilot authorizations issued by the Administrator.

§ 61.63 Additional aircraft ratings (other than on an airline transport pilot certificate).

(a) General. To be eligible for an additional aircraft rating to a pilot certificate, for other than an airline transport pilot certificate, an applicant must meet the appropriate requirements of this section for the additional aircraft rating sought.

(b) Additional category rating. An applicant who holds a pilot certificate and applies to add a category rating to that pilot certificate:

(1) Must have received the required training and possess the aeronautical experience prescribed by this part that applies to the pilot certificate for the aircraft category and, if applicable, class rating sought;

(2) Must have an endorsement in his or her logbook or training record from an authorized instructor and that endorsement must attest that the applicant has been found competent in the aeronautical knowledge areas appropriate to the pilot certificate for the aircraft category and, if applicable, class rating sought;

(3) Must pass the required practical test that is appropriate to the pilot certificate for the aircraft category and, if applicable, class rating sought;

(4) Need not meet the specified training time requirements prescribed by this part that apply to the pilot certificate for the aircraft class rating sought unless the person holds a light-than-air category rating with a balloon class rating and is seeking an airship class rating and;

(5) Need not take an additional knowledge test, provided the applicant holds an airplane, rotorcraft, powered-lift, or airship rating at that pilot certificate level.

(c) Additional class rating. Any person who applies for an additional class rating to be added on a pilot certificate:

(1) Must have an endorsement in his or her logbook or training record from an authorized instructor and that endorsement must attest that the applicant has been found competent in the aeronautical knowledge areas appropriate to the pilot certificate for the aircraft class rating sought;

(2) Must have an endorsement in his or her logbook or training record from an authorized instructor, and that endorsement must attest that the applicant has been found proficient in the areas of operation appropriate to the pilot certificate for the aircraft class rating sought;

(3) Must pass the required practical test that is appropriate to the pilot certificate for the aircraft class rating sought;

(4) Need not meet the specified training time requirements prescribed by this part that apply to the pilot certificate for the aircraft class rating sought unless the person holds a light-than-air category rating with a balloon class rating and is seeking an airship class rating and;

(5) Need not take an additional knowledge test, provided the applicant holds an airplane, rotorcraft, powered-lift, or airship rating at that pilot certificate level.

(d) Additional type rating. Except as specified in paragraph (d)(7) of this section, a person who applies for an additional aircraft type rating to be added
on a pilot certificate, or the addition of an aircraft type rating that is accomplished concurrently with an additional aircraft category or class rating:

(1) Must hold or concurrently obtain an instrument rating that is appropriate to the aircraft category, class, or type rating sought;

(2) Must have an endorsement in his or her logbook or training record from an authorized instructor, and that endorsement must attest that the applicant has been found competent in the aeronautical knowledge areas appropriate to the pilot certificate for the aircraft category, class, or type rating sought;

(3) Must have an endorsement in his or her logbook, or training record from an authorized instructor, and that endorsement must attest that the applicant has been found proficient in the areas of operation required for the issuance of an airline transport pilot certificate for the aircraft category, class, and type rating sought;

(4) Must pass the required practical test appropriate to the airline transport pilot certificate for the aircraft category, class, and type rating sought;

(5) Must perform the practical test in actual or simulated instrument conditions, unless the aircraft’s type certificate makes the aircraft incapable of operating under instrument flight rules. If the practical test cannot be accomplished for this reason, the person may obtain a type rating limited to “VFR only.” The “VFR only” limitation may be removed for that aircraft type when the person passes the practical test in actual or simulated instrument conditions. When an instrument rating is issued to a person who holds one or more type ratings, the type ratings on the amended pilot certificate shall bear the “VFR only” limitation for each aircraft type rating for which the person has not demonstrated instrument competency;

(6) Need not take an additional knowledge test, provided the applicant holds an airplane, rotorcraft, powered-lift, or airship rating on their pilot certificate; and

(7) In the case of a pilot employee of a part 121 or a part 135 certificate holder, must have—

(i) Met the appropriate requirements of paragraphs (d)(1), (d)(4), and (d)(5) of this section for the aircraft type rating sought; and

(ii) Received an endorsement in his or her flight training record from the certificate holder attesting that the applicant has completed the certificate holder’s approved ground and flight training program appropriate to the aircraft type rating sought.

(e) Use of a flight simulator or flight training device for an additional rating in an airplane. The areas of operation required to be performed by paragraphs (b), (c), and (d) of this section shall be performed as follows:

(1) Except as provided in paragraph (e)(2) of this section, the areas of operation must be performed in an airplane of the same category, class, and type, if applicable, as the airplane for which the additional rating is sought.

(2) Subject to the limitations of paragraph (e)(3) through (e)(12) of this section, the areas of operation may be performed in a flight simulator or flight training device that represents the airplane for which the additional rating is sought.

(3) The use of a flight simulator or flight training device permitted by paragraph (e)(2) of this section shall be conducted in accordance with an approved course at a training center certificated under part 142 of this chapter.

(4) To complete all training and testing (except preflight inspection) for an additional airplane rating without limitations when using a flight simulator—

(i) The flight simulator must be qualified and approved as Level C or Level D; and

(ii) The applicant must meet at least one of the following:

(A) Hold a type rating for a turbojet airplane of the same class of airplane for which the type rating is sought, or have been appointed by a military service as a pilot in command of an airplane of the same class of airplane for which the type rating is sought, if a type rating in a turbojet airplane is sought.

(B) Hold a type rating for a turbo-propeller airplane of the same class of airplane for which the type rating is sought, or have been designated by a
military service as a pilot in command of an airplane of the same class of airplane for which the type rating is sought, if a type rating in a turbo-propeller airplane is sought.

(C) Have at least 2,000 hours of flight time, of which 500 hours is in turbine-powered airplanes of the same class of airplane for which the type rating is sought.

(D) Have at least 500 hours of flight time in the same type airplane as the airplane for which the rating is sought.

(E) Have at least 1,000 hours of flight time in at least two different airplanes requiring a type rating.

(5) Subject to the limitation of paragraph (e)(6) of this section, an applicant who does not meet the requirements of paragraph (e)(4) of this section may complete all training and testing (except for preflight inspection) for an additional rating when using a flight simulator if—

(i) The flight simulator is qualified and approved as a Level C or Level D; and

(ii) The applicant meets at least one of the following:

(A) Holds a type rating in a propeller-driven airplane if a type rating in a turbojet airplane is sought, or holds a type rating in a turbojet airplane if a type rating in a propeller-driven airplane is sought; or

(B) Since the beginning of the 12th calendar month before the month in which the applicant completes the practical test for an additional airplane rating, has logged:

(1) At least 100 hours of flight time in airplanes of the same class for which the type rating is sought and which requires a type rating; and

(2) At least 25 hours of flight time in airplanes of the same type for which the rating is sought.

(6) An applicant meeting only the requirements of paragraph (e)(5) of this section will be issued an additional rating with a limitation.

(7) The limitation on a certificate issued under the provisions of paragraph (e)(6) of this section shall state, “This certificate is subject to pilot-in-command limitations for the additional rating.”

(8) An applicant who has been issued a pilot certificate with the limitation specified in paragraph (e)(7) of this section—

(i) May not act as pilot in command of that airplane for which the additional rating was obtained under the provisions of this section until the limitation is removed from the pilot certificate; and

(ii) May have the limitation removed by accomplishing 15 hours of supervised operating experience as pilot in command under the supervision of a qualified and current pilot in command, in the same type of airplane to which the limitation applies.

(9) An applicant who does not meet the requirements of paragraph (e)(4) or paragraph (e)(5) of this section may be issued an additional rating after successful completion of one of the following requirements:

(i) Compliance with paragraphs (e)(2) and (e)(3) of this section and the following tasks, which must be successfully completed on a static airplane or in flight, as appropriate:

(A) Preflight inspection;

(B) Normal takeoff;

(C) Normal ILS approach;

(D) Missed approach; and

(E) Normal landing.

(ii) Compliance with paragraphs (e)(2), (e)(3), and (e)(10) through (e)(12) of this section.

(10) An applicant meeting only the requirements of paragraph (e)(9)(ii) of this section will be issued an additional rating with a limitation.

(11) The limitation on a certificate issued under the provisions of paragraph (e)(10) of this section shall state, “This certificate is subject to pilot-in-command limitations for the additional rating.”

(12) An applicant who has been issued a pilot certificate with the limitation specified in paragraph (e)(11) of this section—

(i) May not act as pilot in command of that airplane for which the additional rating was obtained under the provisions of this section until the limitation is removed from the pilot certificate; and

(ii) May have the limitation removed by accomplishing 25 hours of supervised operating experience as pilot in
command under the supervision of a qualified and current pilot in command, in the seat normally occupied by the pilot in command, in that airplane of the same type to which the limitation applies.

(f) Use of a flight simulator or flight training device for an additional rating in a helicopter. The areas of operation required to be performed by paragraphs (b), (c), and (d) of this section shall be performed as follows:

(1) Except as provided in paragraph (f)(2) of this section, the areas of operation must be performed in a helicopter of the same type for the additional rating sought.

(2) Subject to the limitations of paragraph (f)(3) through (f)(12) of this section, the areas of operation may be performed in a flight simulator or flight training device that represents that helicopter for the additional rating sought.

(3) The use of a flight simulator or flight training device permitted by paragraph (f)(2) of this section shall be conducted in accordance with an approved course at a training center certificated under part 142 of this chapter.

(4) To complete all training and testing (except preflight inspection) for an additional helicopter rating without limitations when using a flight simulator—

(i) The flight simulator must be qualified and approved as Level C or Level D; and

(ii) The applicant must meet at least one of the following if a type rating is sought in a turbine-powered helicopter:

(A) Hold a type rating in a turbine-powered helicopter or have been appointed by a military service as a pilot in command of a turbine-powered helicopter.

(B) Have at least 2,000 hours of flight time in helicopters of the same type for which the rating is sought.

(C) Have at least 500 hours of flight time in turbine-powered helicopters.

(D) Have at least 1,000 hours of flight time in at least two different turbine-powered helicopters.

(5) Subject to the limitation of paragraph (f)(6) of this section, an applicant who does not meet the requirements of paragraphs (f)(4) or (f)(5) of this section may complete all training and testing (except for preflight inspection) for an additional rating when using a flight simulator if—

(i) The flight simulator is qualified and approved as Level C or Level D; and

(ii) The applicant meets at least one of the following:

(A) Holds a type rating in a turbine-powered helicopter if a type rating in a turbine-powered helicopter is sought; or

(B) Since the beginning of the 12th calendar month before the month in which the applicant completes the practical test for an additional helicopter rating, has logged at least 25 hours of flight time in helicopters of the same type for which the rating is sought.

(6) An applicant meeting only the requirements of paragraph (f)(5) of this section will be issued an additional rating with a limitation.

(7) The limitation on a certificate issued under the provisions of paragraph (f)(6) of this section shall state, "This certificate is subject to pilot-in-command limitations for the additional rating."

(8) An applicant who is issued a pilot certificate with the limitation specified in paragraph (f)(7) of this section—

(i) May not act as pilot in command of that helicopter for which the additional rating was obtained under the provisions of this section until the limitation is removed from the pilot certificate; and

(ii) May have the limitation removed by accomplishing 15 hours of supervised operating experience as pilot in command, in the seat normally occupied by the pilot in command, in the same type of helicopter to which the limitation applies.

(9) An applicant who does not meet the requirements of paragraph (f)(4) or paragraph (f)(5) of this section may be issued an additional rating after successful completion of one of the following requirements:

(i) Compliance with paragraphs (f)(2) and (f)(3) of this section and the following tasks, which must be successfully completed on a static helicopter or in flight, as appropriate:
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(A) Preflight inspection;
(B) Normal takeoff;
(C) Normal ILS approach;
(D) Missed approach; and
(E) Normal landing.

(ii) Compliance with paragraphs (f)(2), (f)(3), and (f)(10) through (f)(12) of this section.

10 A applicant meeting only the requirements of paragraph (f)(9)(ii) of this section will be issued an additional rating with a limitation.

11 The limitation on a certificate issued under the provisions of paragraph (f)(10) of this section shall state, "This certificate is subject to pilot-in-command limitations for the additional rating."

12 An applicant who has been issued a pilot certificate with the limitation specified in paragraph (f)(11) of this section—

(i) May not act as pilot in command of that helicopter for which the additional rating was obtained under the provisions of this section until the limitation is removed from the pilot certificate; and

(ii) May have the limitation removed by accomplishing 25 hours of supervised operating experience as pilot in command under the supervision of a qualified and current pilot in command, in the seat normally occupied by the pilot in command, in that helicopter of the same type as to which the limitation applies.

(g) Use of a flight simulator or flight training device for an additional rating in a powered-lift. The areas of operation required to be performed by paragraphs (b), (c), and (d) of this section shall be performed as follows:

1 Except as provided in paragraph (g)(2) of this section, the areas of operation must be performed in a powered-lift of the same type for the additional rating sought.

2 Subject to the limitations of paragraphs (g)(3) through (g)(12) of this section, the areas of operation may be performed in a flight simulator or flight training device that represents a powered-lift for the additional rating sought.

3 The use of a flight simulator or flight training device permitted by paragraph (g)(2) of this section shall be conducted in accordance with an approved course at a training center certificated under part 142 of this chapter.

4 To complete all training and testing (except preflight inspection) for an additional powered-lift rating without limitations when using a flight simulator—

(i) The flight simulator must be qualified and approved as Level C or Level D; and

(ii) The applicant must meet at least one of the following if a type rating is sought in a turbine powered-lift:

(A) Hold a type rating in a turbine powered-lift or have been appointed by a military service as a pilot in command of a turbine powered-lift.

(B) Have at least 2,000 hours of flight time that includes at least 500 hours in turbine powered-lifts.

(C) Have at least 500 hours of flight time in turbine powered-lifts.

(D) Have at least 1,000 hours of flight time in at least two different turbine powered-lifts.

5 Subject to the limitation of paragraph (g)(6) of this section, an applicant who does not meet the requirements of paragraph (g)(4) of this section may complete all training and testing (except for preflight inspection) for an additional rating when using a flight simulator if—

(i) The flight simulator is qualified and approved as Level C or Level D; and

(ii) The applicant meets at least one of the following:

(A) Holds a type rating in a turbine powered-lift if a type rating in a turbine powered-lift is sought; or

(B) Since the beginning of the 12th calendar month before the month in which the applicant completes the practical test for an additional powered-lift rating, has logged at least 25 hours of flight time in powered-lifts of the same type for which the rating is sought.

6 An applicant meeting only the requirements of paragraph (g)(5) of this section will be issued an additional rating with a limitation.

7 The limitation on a certificate issued under the provisions of paragraph (g)(6) of this section shall state, "This certificate is subject to pilot-in-command limitations for the additional rating."
Federal Aviation Administration, DOT

§ 61.65 Instrument rating requirements.

(a) General. A person who applies for an instrument rating must:

(1) Hold at least a current private pilot certificate with an airplane, helicopter, or powered-lift rating appropriate to the instrument rating sought;

(2) Be able to read, speak, write, and understand the English language. If the applicant is unable to meet any of these requirements due to a medical
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condition, the Administrator may place such operating limitations on the applicant's pilot certificate as are necessary for the safe operation of the aircraft;

(3) Receive and log ground training from an authorized instructor or accomplish a home-study course of training on the aeronautical knowledge areas of paragraph (b) of this section that apply to the instrument rating sought;

(4) Receive a logbook or training record endorsement from an authorized instructor certifying that the person is prepared to take the required knowledge test;

(5) Receive and log training on the areas of operation of paragraph (c) of this section from an authorized instructor in an aircraft, flight simulator, or flight training device that represents an airplane, helicopter, or powered-lift appropriate to the instrument rating sought;

(6) Receive a logbook or training record endorsement from an authorized instructor certifying that the person is prepared to take the required practical test;

(7) Pass the required knowledge test on the aeronautical knowledge areas of paragraph (b) of this section; however, an applicant is not required to take another knowledge test when that person already holds an instrument rating; and

(8) Pass the required practical test on the areas of operation in paragraph (c) of this section in—

(i) An airplane, helicopter, or powered-lift appropriate to the rating sought; or

(ii) A flight simulator or a flight training device appropriate to the rating sought and for the specific maneuver or instrument approach procedure performed. If an approved flight training device is used for the practical test, the instrument approach procedures conducted in that flight training device are limited to one precision and one nonprecision approach, provided the flight training device is approved for the procedure performed.

(b) Aeronautical knowledge. A person who applies for an instrument rating must have received and logged ground training from an authorized instructor or accomplished a home-study course on the following aeronautical knowledge areas that apply to the instrument rating sought:

(1) Federal Aviation Regulations of this chapter that apply to flight operations under IFR;

(2) Appropriate information that applies to flight operations under IFR in the "Aeronautical Information Manual;"

(3) Air traffic control system and procedures for instrument flight operations;

(4) IFR navigation and approaches by use of navigation systems;

(5) Use of IFR en route and instrument approach procedure charts;

(6) Procurement and use of aviation weather reports and forecasts and the elements of forecasting weather trends based on that information and personal observation of weather conditions;

(7) Safe and efficient operation of aircraft under instrument flight rules and conditions;

(8) Recognition of critical weather situations and windshear avoidance;

(9) Aeronautical decision making and judgment; and

(10) Crew resource management, including crew communication and coordination.

(c) Flight proficiency. A person who applies for an instrument rating must receive and log training from an authorized instructor in an aircraft, or in a flight simulator or flight training device, in accordance with paragraph (e) of this section, that includes the following areas of operation:

(1) Preflight preparation;

(2) Preflight procedures;

(3) Air traffic control clearances and procedures;

(4) Flight by reference to instruments;

(5) Navigation systems;

(6) Instrument approach procedures;

(7) Emergency operations; and

(8) Postflight procedures.

(d) Aeronautical experience. A person who applies for an instrument rating must have logged the following:

(1) At least 50 hours of cross-country flight time as pilot in command, of which at least 10 hours must be in airplanes for an instrument—airplane rating; and
(2) A total of 40 hours of actual or simulated instrument time on the areas of operation of this section, to include—
   (i) At least 15 hours of instrument flight training from an authorized instructor in the aircraft category for which the instrument rating is sought;
   (ii) At least 3 hours of instrument training that is appropriate to the instrument rating sought from an authorized instructor in preparation for the practical test within the 60 days preceding the date of the test;
   (iii) For an instrument—airplane rating, instrument training on cross-country flight procedures specific to airplanes that includes at least one cross-country flight in an airplane that is performed under IFR, and consists of—
      (A) A distance of at least 250 nautical miles along airways or ATC-directed routing;
      (B) An instrument approach at each airport; and
      (C) Three different kinds of approaches with the use of navigation systems;
   (iv) For an instrument—helicopter rating, instrument training specific to helicopters on cross-country flight procedures that includes at least one cross-country flight in a helicopter that is performed under IFR, and consists of—
      (A) A distance of at least 100 nautical miles along airways or ATC-directed routing;
      (B) An instrument approach at each airport; and
      (C) Three different kinds of approaches with the use of navigation systems;
   (v) For an instrument—powered-lift rating, instrument training specific to a powered-lift on cross-country flight procedures that includes at least one cross-country flight in a powered-lift that is performed under IFR and consists of—
      (A) A distance of at least 250 nautical miles along airways or ATC-directed routing;
      (B) An instrument approach at each airport; and
      (C) Three different kinds of approaches with the use of navigation systems.

(e) Use of flight simulators or flight training devices. If the instrument training was provided by an authorized instructor in a flight simulator or flight training device—
   (1) A maximum of 30 hours may be performed in that flight simulator or flight training device if the training was accomplished in accordance with part 142 of this chapter; or
   (2) A maximum of 20 hours may be performed in that flight simulator or flight training device if the training was not accomplished in accordance with part 142 of this chapter.

§ 61.67 Category II pilot authorization requirements.

(a) General. A person who applies for a Category II pilot authorization must hold:
   (1) At least a private or commercial pilot certificate with an instrument rating or an airline transport pilot certificate;
   (2) A type rating for the aircraft for which the authorization is sought if that aircraft requires a type rating; and
   (3) A category and class rating for the aircraft for which the authorization is sought.

(b) Experience requirements. An applicant for a Category II pilot authorization must have at least—
   (1) 50 hours of night flight time as pilot in command.
   (2) 75 hours of instrument time under actual or simulated instrument conditions that may include not more than—
      (i) A combination of 25 hours of simulated instrument flight time in a flight simulator or flight training device; or
      (ii) 40 hours of simulated instrument flight time if accomplished in an approved course conducted by an appropriately rated training center certified under part 142 of this chapter.
   (3) 250 hours of cross-country flight time as pilot in command.

(c) Practical test requirements. (1) A practical test must be passed by a person who applies for—
      (i) Issuance or renewal of a Category II pilot authorization; and
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(ii) The addition of another type aircraft to the applicant's Category II pilot authorization.

(2) To be eligible for the practical test for an authorization under this section, an applicant must—

(i) Meet the requirements of paragraphs (a) and (b) of this section; and

(ii) If the applicant has not passed a practical test for this authorization during the 12 calendar months preceding the month of the test, then that person must—

(A) Meet the requirements of § 61.57(c); and

(B) Have performed at least six ILS approaches during the 6 calendar months preceding the month of the test, of which at least three of the approaches must have been conducted without the use of an approach coupler.

(3) The approaches specified in paragraph (c)(2)(ii)(B) of this section—

(i) Must be conducted under actual or simulated instrument flight conditions;

(ii) Must be conducted to the decision height for the ILS approach in the type aircraft in which the practical test is to be conducted;

(iii) Need not be conducted to the decision height authorized for Category II operations;

(iv) Must be conducted to the decision height authorized for Category II operations only if conducted in a flight simulator or flight training device; and

(v) Must be accomplished in an aircraft of the same category and class, and type, as applicable, as the aircraft in which the practical test is to be conducted or in a flight simulator that—

(A) Represents an aircraft of the same category and class, and type, as applicable, as the aircraft in which the authorization is sought; and

(B) Is used in accordance with an approved course conducted by a training center certificated under part 142 of this chapter.

(4) The flight time acquired in meeting the requirements of paragraph (c)(2)(ii)(B) of this section may be used to meet the requirements of paragraph (c)(2)(ii)(A) of this section.

(d) Practical test procedures. The practical test consists of an oral increment and a flight increment.

(1) Oral increment. In the oral increment of the practical test an applicant must demonstrate knowledge of the following:

(i) Required landing distance;

(ii) Recognition of the decision height;

(iii) Missed approach procedures and techniques using computed or fixed attitude guidance displays;

(iv) Use and limitations of RVR;

(v) Use of visual clues, their availability or limitations, and altitude at which they are normally discernible at reduced RVR readings;

(vi) Procedures and techniques related to transition from nonvisual to visual flight during a final approach under reduced RVR;

(vii) Effects of vertical and horizontal windshear;

(viii) Characteristics and limitations of the ILS and runway lighting system;

(ix) Characteristics and limitations of the flight director system, auto approach coupler (including split axis type if equipped), auto throttle system (if equipped), and other required Category II equipment;

(x) Assigned duties of the second in command during Category II approaches, unless the aircraft for which authorization is sought does not require a second in command; and

(xi) Instrument and equipment failure warning systems.

(2) Flight increment. The following requirements apply to the flight increment of the practical test:

(i) The flight increment must be conducted in an aircraft of the same category, class, and type, as applicable, as the aircraft in which the authorization is sought or in a flight simulator that—

(A) Represents an aircraft of the same category and class, and type, as applicable, as the aircraft in which the authorization is sought; and

(B) Is used in accordance with an approved course conducted by a training center certificated under part 142 of this chapter.

(ii) The flight increment must consist of at least two ILS approaches to 100 feet AGL including at least one landing and one missed approach.

(iii) All approaches performed during the flight increment must be made
with the use of an approved flight control guidance system, except if an approved auto approach coupler is installed, at least one approach must be hand flown using flight director commands.

(iv) If a multiengine airplane with the performance capability to execute a missed approach with one engine inoperative is used for the practical test, the flight increment must include the performance of one missed approach with an engine, which shall be the most critical engine, if applicable, set at idle or zero thrust before reaching the middle marker.

(v) If a multiengine flight simulator or multiengine flight training device is used for the practical test, the applicant must execute a missed approach with the most critical engine, if applicable, failed.

(vi) For an authorization for an aircraft that requires a type rating, the practical test must be performed in coordination with a second in command who holds a type rating in the aircraft in which the authorization is sought.

(vii) Oral questioning may be conducted at any time during a practical test.


§ 61.68 Category III pilot authorization requirements.

(a) General. A person who applies for a Category III pilot authorization must hold:

(1) At least a private pilot certificate or commercial pilot certificate with an instrument rating or an airline transport pilot certificate;

(2) A type rating for the aircraft for which the authorization is sought if that aircraft requires a type rating; and

(3) A category and class rating for the aircraft for which the authorization is sought.

(b) Experience requirements. An applicant for a Category III pilot authorization must have at least—

(1) 50 hours of night flight time as pilot in command.

(2) 75 hours of instrument flight time during actual or simulated instrument conditions that may include not more than—

(i) A combination of 25 hours of simulated instrument flight time in a flight simulator or flight training device; or

(ii) 40 hours of simulated instrument flight time if accomplished in an approved course conducted by an appropriately rated training center certified under part 142 of this chapter.

(3) 250 hours of cross-country flight time as pilot in command.

(c) Practical test requirements. (1) A practical test must be passed by a person who applies for—

(i) Issuance or renewal of a Category III pilot authorization; and

(ii) The addition of another type of aircraft to the applicant’s Category III pilot authorization.

(2) To be eligible for the practical test for an authorization under this section, an applicant must—

(i) Meet the requirements of paragraphs (a) and (b) of this section; and

(ii) If the applicant has not passed a practical test for this authorization during the 12 calendar months preceding the month of the test, then that person must—

(A) Meet the requirements of §61.57(c); and

(B) Have performed at least six ILS approaches during the 6 calendar months preceding the month of the test, of which at least three of the approaches must have been conducted without the use of an approach coupler.

(3) The approaches specified in paragraph (c)(2)(ii)(B) of this section—

(i) Must be conducted under actual or simulated instrument flight conditions;

(ii) Must be conducted to the alert height or decision height for the ILS approach in the type aircraft in which the practical test is to be conducted;

(iii) Need not be conducted to the decision height authorized for Category III operations;

(iv) Must be conducted to the alert height or decision height, as applicable, authorized for Category III operations only if conducted in a flight simulator or flight training device; and

(v) Must be accomplished in an aircraft of the same category and class, and type, as applicable, as the aircraft in which the practical test is to be conducted or in a flight simulator that—
(A) Represents an aircraft of the same category and class, and type, as applicable, as the aircraft for which the authorization is sought; and

(B) Is used in accordance with an approved course conducted by a training center certificated under part 142 of this chapter.

(4) The flight time acquired in meeting the requirements of paragraph (c)(2)(ii)(B) of this section may be used to meet the requirements of paragraph (c)(2)(ii)(A) of this section.

(d) Practical test procedures. The practical test consists of an oral increment and a flight increment.

(1) Oral increment. In the oral increment of the practical test an applicant must demonstrate knowledge of the following:

(i) Required landing distance;

(ii) Determination and recognition of the alert height or decision height, as applicable, including use of a radar altimeter;

(iii) Recognition of and proper reaction to significant failures encountered prior to and after reaching the alert height or decision height, as applicable;

(iv) Missed approach procedures and techniques using computed or fixed attitude guidance displays and expected height loss as they relate to manual go-around or automatic go-around, and initiation altitude, as applicable;

(v) Use and limitations of RVR, including determination of controlling RVR and required transmissometers;

(vi) Use, availability, or limitations of visual cues and the altitude at which they are normally discernible at reduced RVR readings including—

(A) Unexpected deterioration of conditions to less than minimum RVR during approach, flare, and rollout;

(B) Demonstration of expected visual references with weather at minimum conditions;

(C) The expected sequence of visual cues during an approach in which visibility is at or above landing minima; and

(D) Procedures and techniques for making a transition from instrument reference flight to visual flight during a final approach under reduced RVR.

(vii) Effects of vertical and horizontal windshear;

(viii) Characteristics and limitations of the ILS and runway lighting system;

(ix) Characteristics and limitations of the flight director system auto approach coupler (including split axis type if equipped), auto throttle system (if equipped), and other Category III equipment;

(x) Assigned duties of the second in command during Category III operations, unless the aircraft for which authorization is sought does not require a second in command;

(xi) Recognition of the limits of acceptable aircraft position and flight path tracking during approach, flare, and, if applicable, rollout; and

(xii) Recognition of, and reaction to, airborne or ground system faults or abnormalities, particularly after passing alert height or decision height, as applicable.

(2) Flight increment. The following requirements apply to the flight increment of the practical test—

(i) The flight increment may be conducted in an aircraft of the same category and class, and type, as applicable, as the aircraft for which the authorization is sought, or in a flight simulator that—

(A) Represents an aircraft of the same category and class, and type, as applicable, as the aircraft in which the authorization is sought; and

(B) Is used in accordance with an approved course conducted by a training center certificated under part 142 of this chapter.

(ii) The flight increment must consist of at least two ILS approaches to 100 feet AGL, including one landing and one missed approach initiated from a very low altitude that may result in a touchdown during the go-around maneuver;

(iii) All approaches performed during the flight increment must be made with the approved automatic landing system or an equivalent landing system approved by the Administrator;

(iv) If a multiengine aircraft with the performance capability to execute a missed approach with one engine inoperative is used for the practical test, the flight increment must include the performance of one missed approach
with the most critical engine, if applicable, set at idle or zero thrust before
reaching the middle or outer marker;
(v) If a multiengine flight simulator
or multiengine flight training device is
used, a missed approach must be exe-
cuted with an engine, which shall be
the most critical engine, if applicable, failed;
(vi) For an authorization for an air-
craft that requires a type rating, the
practical test must be performed in co-
ordination with a second in command
who holds a type rating in the aircraft
in which the authorization is sought;
(vii) Oral questioning may be con-
ducted at any time during the practical
test;
(viii) Subject to the limitations of
this paragraph, for Category IIIb oper-
ations predicated on the use of a fail-
passive rollout control system, at least
one manual rollout using visual ref-
erence or a combination of visual and
instrument references must be exe-
cuted. The maneuver required by this
paragraph shall be initiated by a fail-
passive disconnect of the rollout con-
trol system—
(A) After main gear touchdown;
(B) Prior to nose gear touchdown;
(C) In conditions representative of
the most adverse lateral touchdown
displacement allowing a safe landing
on the runway; and
(D) In weather conditions anticipated
in Category IIIb operations.

§ 61.69 Glider towing: Experience and
training requirements.

(a) No person may act as pilot in
command for towing a glider unless
that person:
(1) Holds at least a private pilot cer-
tificate with a category rating for pow-
ered aircraft;
(2) Has logged at least 100 hours of
pilot-in-command time in the aircraft
category, class, and type, if required,
that the pilot is using to tow a glider;
(3) Has a logbook endorsement from
an authorized instructor who certifies
that the person has received ground
and flight training in gliders and is
proficient in—
(i) The techniques and procedures es-
sential to the safe towing of gliders, in-
cluding airspeed limitations;
(ii) Emergency procedures;
(iii) Signals used; and
(iv) Maximum angles of bank.
(4) Except as provided in paragraph
(b) of this section, has logged at least
three flights as the sole manipulator of
the controls of an aircraft towing a
 glider or simulating glider-towing
flight procedures while accompanied by
a pilot who meets the requirements of
paragraphs (c) and (d) of this section;
(5) Except as provided in paragraph
(b) of this section, has received a log-
book endorsement from the pilot, de-
scribed in paragraph (a)(4) of this sec-
tion, certifying that the person has ac-
complished at least 3 flights in an air-
craft while towing a glider, or while
simulating glider-towing flight proce-
dures; and
(6) Within the preceding 12 months
has—
(i) Made at least three actual or sim-
ulated glider tows while accompanied
by a qualified pilot who meets the re-
quirements of this section; or
(ii) Made at least three flights as
pilot in command of a glider towed by
an aircraft.
(b) Any person who before May 17,
1967, has made and logged 10 or more
flights as pilot in command of an air-
craft towing a glider in accordance
with a certificate of waiver need not
comply with paragraphs (a)(4) and
(a)(5) of this section.
(c) The pilot, described in paragraph
(a)(4) of this section, who endorses the
logbook of a person seeking glider-tow-
ing privileges must have:
(1) Met the requirements of this sec-
tion prior to endorsing the logbook of
the person seeking glider-towing privi-
eges; and
(2) Logged at least 10 flights as pilot
in command of an aircraft while towing
a glider.
(d) If the pilot described in paragraph
(a)(4) of this section holds only a pri-
vate pilot certificate, then that pilot
must have:
(1) Logged at least 100 hours of pilot-
in-command time in airplanes, or 200
hours of pilot-in-command time in a
combination of powered and other-
than-powered aircraft; and
§ 61.71 Graduates of an approved training program other than under this part: Special rules.

(a) A person who graduates from an approved training program under part 141 or part 142 of this chapter is considered to have met the applicable aeronautical experience, aeronautical knowledge, and areas of operation requirements of this part if that person presents the graduation certificate and passes the required practical test within the 60-day period after the date of graduation.

(b) A person may apply for an airline transport pilot certificate, type rating, or both under this part, and will be considered to have met the applicable requirements under § 61.157 of this part for that certificate and rating, if that person has:

(1) Satisfactorily accomplished an approved training program and the pilot-in-command proficiency check for that airplane type, in accordance with the pilot-in-command requirements under subparts N and O of part 121 of this chapter; and

(2) Applied for the airline transport pilot certificate, type rating, or both under this part, and will be considered to have met the applicable requirements under § 61.157 of this part for that certificate and rating, if that person has:

(i) Satisfactorily accomplished an approved training program and the pilot-in-command proficiency check for that airplane type, in accordance with the pilot-in-command requirements under subparts N and O of part 121 of this chapter; and

(ii) Applied for the airline transport pilot certificate, type rating, or both within the 60-day period from the date the person satisfactorily accomplished the approved training program and pilot-in-command proficiency check for that airplane type.

§ 61.73 Military pilots or former military pilots: Special rules.

(a) General. Except for a rated military pilot or former rated military pilot who has been removed from flying status for lack of proficiency, or because of disciplinary action involving aircraft operations, a rated military pilot or former rated military pilot who meets the applicable requirements of this section may apply, on the basis of his or her military training, for:

(1) A commercial pilot certificate;

(2) An aircraft rating in the category and class of aircraft for which that military pilot is qualified;

(3) An instrument rating with the appropriate aircraft rating for which that military pilot is qualified; or

(4) A type rating, if appropriate.

(b) Military pilots on active flying status within the past 12 months. A rated military pilot or former rated military pilot who has been on active flying status within the 12 months before applying must:

(1) Pass a knowledge test on the appropriate parts of this chapter that apply to pilot privileges and limitations, air traffic and general operating rules, and accident reporting rules;

(2) Present documentation showing compliance with the requirements of paragraph (d) of this section for at least one aircraft category rating; and

(3) Present documentation showing that the applicant is or was, at any time during the 12 calendar months before the month of application—

(i) A rated military pilot on active flying status in an armed force of the United States; or

(ii) A rated military pilot of an armed force of a foreign contracting State to the Convention on International Civil Aviation, assigned to pilot duties (other than flight training) with an armed force of the United States and holds, at the time of application, a current civil pilot license issued by that contracting State authorizing at least the privileges of the pilot certificate sought.

(c) Military pilots not on active flying status during the 12 calendar months before the month of application. A rated military pilot or former rated military pilot who has not been on active flying status within the 12 calendar months before the month of application must:

(1) Pass the appropriate knowledge and practical tests prescribed in this part for the certificate or rating sought; and
(2) Present documentation showing that the applicant was, before the beginning of the 12th calendar month before the month of application, a rated military pilot as prescribed by paragraph (b)(3)(i) or paragraph (b)(3)(ii) of this section.

(d) Aircraft category, class, and type ratings. A rated military pilot or former rated military pilot who applies for an aircraft category, class, or type rating, if applicable, is issued that rating at the commercial pilot certificate level if the pilot presents documentary evidence that shows satisfactory accomplishment of:

(1) An official U.S. military pilot check and instrument proficiency check in that aircraft category, class, or type, if applicable, as pilot in command during the 12 calendar months before the month of application;

(2) At least 10 hours of pilot-in-command time in that aircraft category, class, or type, if applicable, during the 12 calendar months before the month of application; or

(3) An FAA practical test in that aircraft category, class, or type rating.

(e) Instrument rating. An FAA practical test in that aircraft category, class, or type rating may be taken in command during the 12 calendar months before the month of application.

(f) Aircraft type rating. An aircraft type rating is issued only for aircraft types that the Administrator has certified for civil operations.

(g) Aircraft type rating placed on an airline transport pilot certificate. A rated military pilot or former rated military pilot who holds an airline transport pilot certificate and who requests an aircraft type rating to be placed on that person’s airline transport pilot certificate may be issued that aircraft type rating by

(1) Holds a category and class rating for that type of aircraft at the airline transport pilot certificate level; and

(2) Passed an official U.S. military pilot check and instrument proficiency check in that type of aircraft as pilot in command during the 12 calendar months before the month of application.

(h) Evidentiary documents. The following documents are satisfactory evidence for the purposes indicated:

(1) An official identification card issued to the pilot by an armed force may be used to demonstrate membership in the armed forces.

(2) An original or a copy of a certificate of discharge or release may be used to demonstrate discharge or release from an armed force or former membership in an armed force.

(3) Current or previous status as a rated military pilot with a U.S. Armed Force may be demonstrated by—

(i) An official U.S. Armed Force order to flight status as a military pilot;

(ii) An official U.S. Armed Force form or logbook showing military pilot status; or

(iii) An official order showing that the rated military pilot graduated from a U.S. military pilot school and received a rating as a military pilot.

(4) A certified U.S. Armed Force logbook or an appropriate official U.S. Armed Force form or summary may be used to demonstrate flight time in military aircraft as a member of a U.S. Armed Force.

(5) An official U.S. Armed Force record of a military checkout as pilot in command may be used to demonstrate pilot in command status.
§ 61.75 Private pilot certificate issued on the basis of a foreign pilot license.

(a) General. A person who holds a current foreign pilot license issued by a contracting State to the Convention on International Civil Aviation may apply for and be issued a private pilot certificate with the appropriate ratings when the application is based on the foreign pilot license that meets the requirements of this section.

(b) Certificate issued. A U.S. private pilot certificate that is issued under this section shall specify the person’s foreign license number and country of issuance. A person who holds a current foreign pilot license issued by a contracting State to the Convention on International Civil Aviation may be issued a private pilot certificate based on the foreign pilot license without any further showing of proficiency, provided the applicant:

(1) Meets the requirements of this section;

(2) Holds a foreign pilot license that—

(i) Is not under an order of revocation or suspension by the foreign country that issued the foreign pilot license; and

(ii) Does not contain an endorsement stating that the applicant has not met all of the standards of ICAO for that license;

(3) Does not currently hold a U.S. pilot certificate;

(4) Holds a current medical certificate issued under part 67 of this chapter or a current medical certificate issued by the country that issued the person’s foreign pilot license; and

(5) Is able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, then the Administrator may place such operating limitations on that applicant’s pilot certificate as are necessary for the safe operation of the aircraft.

(c) Aircraft ratings issued. Aircraft ratings listed on a person’s foreign pilot license, in addition to any issued after testing under the provisions of this part, may be placed on that person’s U.S. pilot certificate.

(d) Instrument ratings issued. A person who holds an instrument rating on the foreign pilot license issued by a contracting State to the Convention on International Civil Aviation may be issued an instrument rating on a U.S. private pilot certificate provided:

(1) The person’s foreign pilot license authorizes instrument privileges;

(2) Within 24 months preceding the month in which the person applies for the instrument rating, the person passes the appropriate knowledge test; and

(3) The person is able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, then the Administrator may place such operating limitations on that applicant’s pilot certificate as are necessary for the safe operation of the aircraft.

(e) Operating privileges and limitations. A person who receives a U.S. private pilot certificate that has been issued under the provisions of this section:

(1) May act as a pilot of a civil aircraft of U.S. registry in accordance with the private pilot privileges authorized by this part;

(2) Is limited to the privileges placed on the certificate by the Administrator;

(3) Is subject to the limitations and restrictions on the person’s U.S. certificate and foreign pilot license when exercising the privileges of that U.S. pilot certificate in an aircraft of U.S. registry operating within or outside the United States; and

(4) Shall not exercise the privileges of that U.S. private pilot certificate when the person’s foreign pilot license has been revoked or suspended.

(f) Limitation on licenses used as the basis for a U.S. certificate. Only one foreign pilot license may be used as a basis for issuing a U.S. private pilot pilot certificate under this section.
certificate. The foreign pilot license and medical certification used as a basis for issuing a U.S. private pilot certificate under this section must be in the English language or accompanied by an English language transcription that has been signed by an official or representative of the foreign aviation authority that issued the foreign pilot license.

(g) Limitation placed on a U.S. private pilot certificate. A U.S. private pilot certificate issued under this section is valid only when the holder has the foreign pilot license upon which the issuance of the U.S. private pilot certificate was based in the holder's personal possession or readily accessible in the aircraft.

§ 61.77 Special purpose pilot authorization: Operation of U.S.-registered civil aircraft leased by a person who is not a U.S. citizen.

(a) General. The holder of a foreign pilot license issued by a contracting State to the Convention on International Civil Aviation who meets the requirements of this section may be issued a special purpose pilot authorization by the Administrator for the purpose of performing pilot duties—

1. On a civil aircraft of U.S. registry that is leased to a person who is not a citizen of the United States, and

2. For carrying persons or property for compensation or hire on that aircraft.

(b) Eligibility. To be eligible for the issuance or renewal of a special purpose pilot authorization, an applicant must present the following to an FAA Flight Standards District Office:

1. A current foreign pilot license that has been issued by the aeronautical authority of a contracting State to the Convention on International Civil Aviation from which the person holds citizenship or resident status and that contains the appropriate aircraft category, class, instrument rating, and type rating, if appropriate, for the aircraft to be flown;

2. A current certification by the lessee of the aircraft—

(i) Stating that the applicant is employed by the lessee;

(ii) Specifying the aircraft type on which the applicant will perform pilot duties; and

(iii) Stating that the applicant has received ground and flight instruction that qualifies the applicant to perform the duties to be assigned on the aircraft.

3. Documentation showing when the applicant will reach the age of 60 years (an official copy of the applicant's birth certificate or other official documentation);

4. Documentation that the applicant meets the medical standards for the issuance of the foreign pilot license from the aeronautical authority of the contracting State to the Convention on International Civil Aviation where the applicant holds citizenship or resident status;

5. Documentation that the applicant meets the recent flight experience requirements of this part (a logbook or flight record); and

6. A statement that the applicant does not already hold a special purpose pilot authorization; however, if the applicant already holds a special purpose pilot authorization, then that special purpose pilot authorization must be surrendered to either the FAA Flight Standards District Office that issued it, or the FAA Flight Standards District Office processing the application for the authorization, prior to being issued another special purpose pilot authorization.

(c) Privileges. A person issued a special purpose pilot authorization under this section—

1. May exercise the privileges prescribed on the special purpose pilot authorization; and

2. Must comply with the limitations specified in this section and any additional limitations specified on the special purpose pilot authorization.

(d) General limitations. A special purpose pilot authorization is valid only—

1. For flights between foreign countries or for flights in foreign air commerce within the time period allotted on the authorization;
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(2) If the foreign pilot license required by paragraph (b)(1) of this section, the medical documentation required by paragraph (b)(4) of this section, and the special purpose pilot authorization issued under this section are in the holder’s physical possession or immediately accessible in the aircraft;

(3) While the holder is employed by the person to whom the aircraft described in the certification required by paragraph (b)(2) of this section is leased;

(4) While the holder is performing pilot duties on the U.S.-registered aircraft described in the certification required by paragraph (b)(2) of this section; and

(5) If the holder has only one special purpose pilot authorization as provided in paragraph (b)(6) of this section.

(e) Age limitation. Except as provided in paragraph (g) of this section, no person who holds a special purpose pilot authorization issued under this part, and no person who holds a special purpose pilot certificate issued under this part before August 4, 1997, shall serve as a pilot on a civil airplane of U.S. registry if the person has reached his or her 60th birthday, in the following operations:

(1) Scheduled international air services carrying passengers in turbojet-powered airplanes;

(2) Scheduled international air services carrying passengers in airplanes having a passenger-seat configuration of more than nine passenger seats, excluding each crewmember seat;

(3) Nonscheduled international air transportation for compensation or hire in airplanes having a passenger-seat configuration of more than 30 passenger seats, excluding each crewmember seat; or

(4) Scheduled international air services, or nonscheduled international air transportation for compensation or hire, in airplanes having a payload capacity of more than 7,500 pounds.

(f) Definitions. (1) International air service, as used in paragraph (e) of this section, means scheduled air service performed in airplanes for the public transport of passengers, mail, or cargo, in which the service passes through the air space over the territory of more than one country.

(2) International air transportation, as used in paragraph (e) of this section, means air transportation performed in airplanes for the public transport of passengers, mail, or cargo, in which service passes through the air space over the territory of more than one country.

(g) Delayed pilot age limitations for certain operations. Until December 20, 1999, a person may serve as a pilot in the operations specified in paragraph (e) of this section after that person has reached his or her 60th birthday, if, on March 20, 1997, that person was employed as a pilot in any of the following operations:

(1) Scheduled international air services carrying passengers in non-transport category turbopropeller-powered airplanes type certificated after December 31, 1964, that have a passenger-seat configuration of 10 to 19 seats;

(2) Scheduled international air services carrying passengers in transport category turbopropeller-powered airplanes that have a passenger-seat configuration of 20 to 30 seats; or

(3) Scheduled international air services carrying passengers in turbojet-powered airplanes having a passenger-seat configuration of 1 to 30 seats.

(h) Expiration date. Each special purpose pilot authorization issued under this section expires—

(1) 60 calendar months from the month it was issued, unless sooner suspended or revoked;

(2) When the lease agreement for the aircraft expires or the lessee terminates the employment of the person who holds the special purpose pilot authorization;

(3) Whenever the person’s foreign pilot license has been suspended, revoked, or is no longer valid; or

(4) When the person no longer meets the medical standards for the issuance of the foreign pilot license.

(i) Renewal. A person exercising the privileges of a special purpose pilot authorization may apply for a 60-calendar-month extension of that authorization, provided the person—

(1) Continues to meet the requirements of this section; and
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(2) Surrenders the expired special purpose pilot authorization upon receipt of the new authorization.

(j) Surrender. The holder of a special purpose pilot authorization must surrender the authorization to the Administrator within 7 days after the date the authorization terminates.


Subpart C—Student Pilots

§ 61.81 Applicability.

This subpart prescribes the requirements for the issuance of student pilot certificates, the conditions under which those certificates are necessary, and the general operating rules and limitations for the holders of those certificates.

§ 61.83 Eligibility requirements for student pilots.

To be eligible for a student pilot certificate, an applicant must:

(a) Be at least 16 years of age for other than the operation of a glider or balloon.

(b) Be at least 14 years of age for the operation of a glider or balloon.

(c) Be able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, then the Administrator may place such operating limitations on that applicant's pilot certificate as are necessary for the safe operation of the aircraft.

§ 61.85 Application.

An application for a student pilot certificate is made on a form and in a manner provided by the Administrator and is submitted to:

(a) A designated aviation medical examiner if applying for an FAA medical certificate under part 67 of this chapter;

(b) An examiner; or

(c) A Flight Standards District Office.

§ 61.87 Solo requirements for student pilots.

(a) General. A student pilot may not operate an aircraft in solo flight unless that student has met the requirements of this section. The term “solo flight” as used in this subpart means that flight time during which a student pilot is the sole occupant of the aircraft or that flight time during which the student performs the duties of a pilot in command of a gas balloon or an airship requiring more than one pilot flight crewmember.

(b) Aeronautical knowledge. A student pilot must demonstrate satisfactory aeronautical knowledge on a knowledge test that meets the requirements of this paragraph:

(1) The test must address the student pilot’s knowledge of—

(i) Applicable sections of parts 61 and 91 of this chapter;

(ii) Airspace rules and procedures for the airport where the solo flight will be performed; and

(iii) Flight characteristics and operational limitations for the make and model of aircraft to be flown.

(2) The student’s authorized instructor must—

(i) Administer the test; and

(ii) At the conclusion of the test, review all incorrect answers with the student before authorizing that student to conduct a solo flight.

(c) Pre-solo flight training. Prior to conducting a solo flight, a student pilot must have:

(1) Received and logged flight training for the maneuvers and procedures of this section that are appropriate to the make and model of aircraft to be flown; and

(2) Demonstrated satisfactory proficiency and safety, as judged by an authorized instructor, on the maneuvers and procedures required by this section in the make and model of aircraft or similar make and model of aircraft to be flown.

(d) Maneuvers and procedures for presolo flight training in a single-engine airplane. A student pilot who is receiving training for a single-engine airplane rating must receive and log flight training for the following maneuvers and procedures:

(1) Proper flight preparation procedures, including preflight planning and preparation, powerplant operation, and aircraft systems;

(2) Taxiing or surface operations, including runups;
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(3) Takeoffs and landings, including normal and crosswind;  
(4) Straight and level flight, and turns in both directions;  
(5) Climbs and climbing turns;  
(6) Airport traffic patterns, including entry and departure procedures;  
(7) Collision avoidance, windshear avoidance, and wake turbulence avoidance;  
(8) Descents, with and without turns, using high and low drag configurations;  
(9) Flight at various airspeeds from cruise to slow flight;  
(10) Stall entries from various flight attitudes and power combinations with recovery initiated at the first indication of a stall, and recovery from a full stall;  
(11) Emergency procedures and equipment malfunctions;  
(12) Ground reference maneuvers;  
(13) Approaches to a landing area with simulated engine malfunctions;  
(14) Go-arounds.

(e) Maneuvers and procedures for pre-solo flight training in a multiengine airplane. A student pilot who is receiving training for a multiengine airplane rating must receive and log flight training for the following maneuvers and procedures:

(1) Proper flight preparation procedures, including preflight planning and preparation, powerplant operation, and aircraft systems;  
(2) Taxiing or surface operations, including runups;  
(3) Takeoffs and landings, including normal and crosswind;  
(4) Straight and level flight, and turns in both directions;  
(5) Climbs and climbing turns;  
(6) Airport traffic patterns, including entry and departure procedures;  
(7) Collision avoidance, windshear avoidance, and wake turbulence avoidance;  
(8) Descents, with and without turns, using high and low drag configurations;  
(9) Flight at various airspeeds from cruise to slow flight;  
(10) Stall entries from various flight attitudes and power combinations with recovery initiated at the first indication of a stall, and recovery from a full stall;  
(11) Emergency procedures and equipment malfunctions;  
(12) Ground reference maneuvers;  
(13) Approaches to a landing area with simulated engine malfunctions;  
(14) Go-arounds.

(f) Maneuvers and procedures for pre-solo flight training in a helicopter. A student pilot who is receiving training for a helicopter rating must receive and log flight training for the following maneuvers and procedures:

(1) Proper flight preparation procedures, including preflight planning and preparation, powerplant operation, and aircraft systems;  
(2) Taxiing or surface operations, including runups;  
(3) Takeoffs and landings, including normal and crosswind;  
(4) Straight and level flight, and turns in both directions;  
(5) Climbs and climbing turns;  
(6) Airport traffic patterns, including entry and departure procedures;  
(7) Collision avoidance, windshear avoidance, and wake turbulence avoidance;  
(8) Descents with and without turns;  
(9) Flight at various airspeeds;  
(10) Emergency procedures and equipment malfunctions;  
(11) Ground reference maneuvers;  
(12) Approaches to the landing area;  
(13) Hovering and hovering turns;  
(14) Go-arounds;  
(15) Simulated emergency procedures, including autorotational descents with a power recovery and power recovery to a hover;  
(16) Rapid decelerations; and  
(17) Simulated one-engine-inoperative approaches and landings for multiengine helicopters.

(g) Maneuvers and procedures for pre-solo flight training in a gyroplane. A student pilot who is receiving training for a gyroplane rating must receive and log flight training for the following maneuvers and procedures:

(1) Proper flight preparation procedures, including preflight planning and preparation, powerplant operation, and aircraft systems;  
(2) Taxiing or surface operations, including runups;  
(3) Takeoffs and landings, including normal and crosswind;
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(4) Straight and level flight, and turns in both directions;
(5) Climbs and climbing turns;
(6) Airport traffic patterns, including entry and departure procedures;
(7) Collision avoidance, windshear avoidance, and wake turbulence avoidance;
(8) Descents with and without turns;
(9) Flight at various airspeeds;
(10) Emergency procedures and equipment malfunctions;
(11) Ground reference maneuvers;
(12) Approaches to the landing area;
(13) High rates of descent with power on and with simulated power off, and recovery from those flight configurations;
(14) Go-arounds; and
(15) Approaches to the landing area; and
(16) Hovering and hovering turns; and
(17) For multiengine powered-lifts, simulated one-engine-inoperative approaches and landings.

(i) Maneuvers and procedures for presolo flight training in a glider. A student pilot who is receiving training for a glider rating must receive and log flight training for the following maneuvers and procedures:
(1) Proper flight preparation procedures, including preflight planning, preparation, aircraft systems, and, if appropriate, powerplant operations;
(2) Taxiing or surface operations, including runups, if applicable;
(3) Launches, including normal and crosswind;
(4) Straight and level flight, and turns in both directions, if applicable;
(5) Airport traffic patterns, including entry procedures;
(6) Collision avoidance, windshear avoidance, and wake turbulence avoidance;
(7) Descents with and without turns using high and low drag configurations;
(8) Flight at various airspeeds;
(9) Emergency procedures and equipment malfunctions;
(10) Ground reference maneuvers, if applicable;
(11) Inspection of towline rigging and review of signals and release procedures, if applicable;
(12) Aerotow, ground tow, or self-launch procedures;
(13) Procedures for disassembly and assembly of the glider;
(14) Stall entry, stall, and stall recovery;
(15) Straight glides, turns, and spirals;
(16) Landings, including normal and crosswind;
(17) Slips to a landing;
(18) Procedures and techniques for thermalling; and
(19) Emergency operations, including towline break procedures.

(j) Maneuvers and procedures for presolo flight training in an airship. A student pilot who is receiving training for an airship rating must receive and log flight training for the following maneuvers and procedures:
(1) Proper flight preparation procedures, including preflight planning and
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preparation, powerplant operation, and aircraft systems;

(2) Taxiing or surface operations, including runups;

(3) Takeoffs and landings, including normal and crosswind;

(4) Straight and level flight, and turns in both directions;

(5) Climbs and climbing turns;

(6) Airport traffic patterns, including entry and departure procedures;

(7) Collision avoidance, windshear avoidance, and wake turbulence avoidance;

(8) Descents with and without turns;

(9) Flight at various airspeeds from cruise to slow flight;

(10) Emergency procedures and equipment malfunctions;

(11) Ground reference maneuvers;

(12) Rigging, ballasting, and controlling pressure in the ballonets, and superheating; and

(13) Landings with positive and with negative static trim.

(k) Maneuvers and procedures for pre-solo flight training in a balloon. A student pilot who is receiving training in a balloon must receive and log flight training for the following maneuvers and procedures:

(1) Layout and assembly procedures;

(2) Proper flight preparation procedures, including preflight planning and preparation, and aircraft systems;

(3) Ascents and descents;

(4) Landing and recovery procedures;

(5) Emergency procedures and equipment malfunctions;

(6) Operation of hot air or gas source, ballast, valves, vents, and rip panels, as appropriate;

(7) Use of deflation valves or rip panels for simulating an emergency;

(8) The effects of wind on climb and approach angles; and

(9) Obstruction detection and avoidance techniques.

(1) Limitations on student pilots operating an aircraft in solo flight. A student pilot may not operate an aircraft in solo flight unless that student pilot has received:

(1) An endorsement from an authorized instructor on his or her student pilot certificate for the specific make and model aircraft to be flown; and

(2) An endorsement in the student’s logbook for the specific make and model aircraft to be flown by an authorized instructor, who gave the training within the 90 days preceding the date of the flight.

(m) Limitations on student pilots operating an aircraft in solo flight at night. A student pilot may not operate an aircraft in solo flight at night unless that student pilot has received:

(1) Flight training at night on night flying procedures that includes takeoffs, approaches, landings, and go-arounds at night at the airport where the solo flight will be conducted;

(2) Navigation training at night in the vicinity of the airport where the solo flight will be conducted; and

(3) An endorsement in the student’s logbook for the specific make and model aircraft to be flown by an authorized instructor who gave the training within the 90-day period preceding the date of the flight.

(n) Limitations on flight instructors authorizing solo flight. (1) No instructor may authorize a student pilot to perform a solo flight unless that instructor has—

(i) Given that student pilot training in the make and model of aircraft or a similar make and model of aircraft in which the solo flight is to be flown;

(ii) Determined the student pilot is proficient in the maneuvers and procedures prescribed in this section;

(iii) Determined the student pilot is proficient in the make and model of aircraft to be flown;

(iv) Ensured that the student pilot’s certificate has been endorsed by an instructor authorized to provide flight training for the specific make and model aircraft to be flown; and

(v) Endorsed the student pilot’s logbook for the specific make and model aircraft to be flown, and that endorsement remains current for solo flight privileges, provided an authorized instructor updates the student’s logbook every 90 days thereafter.

(2) The flight training required by this section must be given by an instructor authorized to provide flight training who is appropriately rated and current.

§ 61.89 General limitations.

(a) A student pilot may not act as pilot in command of an aircraft:
   (1) That is carrying a passenger;
   (2) That is carrying property for compensation or hire;
   (3) For compensation or hire;
   (4) In furtherance of a business;
   (5) On an international flight, except that a student pilot may make solo training flights from Haines, Gustavus, or Juneau, Alaska, to White Horse, Yukon, Canada, and return over the province of British Columbia;
   (6) With a flight or surface visibility of less than 3 statute miles during daylight hours or 5 statute miles at night;
   (7) When the flight cannot be made with visual reference to the surface; or
   (8) In a manner contrary to any limitations placed in the pilot's logbook by an authorized instructor.

(b) A student pilot may not act as a required pilot flight crewmember on any aircraft for which more than one pilot is required by the type certificate of the aircraft or regulations under which the flight is conducted, except when receiving flight training from an authorized instructor on board an aircraft, and no person other than a required flight crewmember is carried on the aircraft.

§ 61.93 Solo cross-country flight requirements.

(a) General. (1) Except as provided in paragraph (b) of this section, a student pilot must meet the requirements of this section before—
   (i) Conducting a solo cross-country flight, or any flight greater than 25 nautical miles from the airport from where the flight originated.
   (ii) Making a solo flight and landing at any location other than the airport of origination.

(b) Except as provided in paragraph (b) of this section, a student pilot who seeks solo cross-country flight privileges must:
   (i) Have received flight training from an instructor authorized to provide flight training on the maneuvers and procedures of this section that are appropriate to the make and model of aircraft for which solo cross-country privileges are sought;
   (ii) Have demonstrated cross-country proficiency on the appropriate maneuvers and procedures of this section to an authorized instructor;
   (iii) Have satisfactorily accomplished the pre-solo flight maneuvers and procedures required by §61.87 of this part in the make and model of aircraft or similar make and model of aircraft for which solo cross-country privileges are sought; and
   (iv) Comply with any limitations included in the authorized instructor's endorsement that are required by paragraph (c) of this section.

(3) A student pilot who seeks solo cross-country flight privileges must have received ground and flight training from an authorized instructor on the cross-country maneuvers and procedures listed in this section that are appropriate to the aircraft to be flown.

(b) Authorization to perform certain solo flights and cross-country flights. A student pilot must obtain an endorsement from an authorized instructor to make solo flights from the airport where the student pilot normally receives training to another location. A student pilot who receives this endorsement must comply with the requirements of this paragraph.

(1) Solo flights may be made to another airport that is within 25 nautical miles from the airport where the student pilot normally receives training, provided—
   (i) An authorized instructor has given the student pilot flight training at the other airport, and that training includes flight in both directions over the route, entering and exiting the traffic pattern, and takeoffs and landings at the other airport;
   (ii) The authorized instructor who gave the training endorses the student pilot's logbook authorizing the flight;
   (iii) The student pilot has current solo flight endorsements in accordance with §61.87 of this part;
   (iv) The authorized instructor has determined that the student pilot is proficient to make the flight; and
   (v) The purpose of the flight is to practice takeoffs and landings at that other airport.
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(2) Repeated specific solo cross-country flights may be made to another airport that is within 50 nautical miles of the airport from which the flight originated, provided—

(i) The authorized instructor has given the student flight training in both directions over the route, including entering and exiting the traffic patterns, takeoffs, and landings at the airports to be used;

(ii) The authorized instructor who gave the training has endorsed the student’s logbook certifying that the student is proficient to make such flights;

(iii) The student has current solo flight endorsements in accordance with §61.87 of this part; and

(iv) The student has current solo cross-country flight endorsements in accordance with this section; however, for repeated solo cross-country flights to another airport within 50 nautical miles from which the flight originated, separate endorsements are not required to be made for each flight.

(c) Endorsements for solo cross-country flights. Except as specified in paragraph (b)(2) of this section, a student pilot must have the endorsements prescribed in this paragraph for each cross-country flight:

(1) Student pilot certificate endorsement. A student pilot must have a solo cross-country endorsement from the authorized instructor who conducted the training, and that endorsement must be placed on that person’s student pilot certificate for the specific category of aircraft to be flown.

(2) Logbook endorsement. (i) A student pilot must have a solo cross-country endorsement from an authorized instructor that is placed in the student pilot’s logbook for the specific make and model of aircraft to be flown.

(ii) For each cross-country flight, the authorized instructor who reviews the cross-country planning must make an endorsement in the person’s logbook after reviewing that person’s cross-country planning, as specified in paragraph (d) of this section. The endorsement must—

(A) Specify the make and model of aircraft to be flown;

(B) State that the student’s preflight planning and preparation is correct and that the student is prepared to make the flight safely under the known conditions; and

(C) State that any limitations required by the student’s authorized instructor are met.

(d) Limitations on authorized instructors to permit solo cross-country flights. An authorized instructor may not permit a student pilot to conduct a solo cross-country flight unless that instructor has:

(1) Determined that the student’s cross-country planning is correct for the flight;

(2) Reviewed the current and forecast weather conditions and has determined that the flight can be completed under VFR;

(3) Determined that the student is proficient to conduct the flight safely;

(4) Determined that the student has the appropriate solo cross-country endorsement for the make and model of aircraft to be flown; and

(5) Determined that the student’s solo flight endorsement is current for the make and model aircraft to be flown.

(e) Maneuvers and procedures for cross-country flight training in a single-engine airplane. A student pilot who is receiving training for cross-country flight in a single-engine airplane must receive and log flight training in the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area
where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communications;

(10) Takeoff, approach, and landing procedures, including short-field, soft-field, and crosswind takeoffs, approaches, and landings;

(11) Climbs at best angle and best rate; and

(12) Control and maneuvering solely by reference to flight instruments, including straight and level flight, turns, descents, climbs, use of radio aids, and ATC directives.

(f) Maneuvers and procedures for cross-country flight training in a multiengine airplane. A student pilot who is receiving training for cross-country flight in a multiengine airplane must receive and log flight training in the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communications;

(g) Maneuvers and procedures for cross-country flight training in a helicopter. A student pilot who is receiving training for cross-country flight in a helicopter must receive and log flight training for the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communications; and

(10) Takeoff, approach, and landing procedures.
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(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communications;

(10) Takeoff, approach, and landing procedures that include high-altitude, steep, and shallow takeoffs, approaches, and landings; and

(11) Control and maneuvering solely by reference to flight instruments, including straight and level flight, turns, descents, climbs, use of radio aids, and ATC directives.

(j) Maneuvers and procedures for cross-country flight training in a glider. A student pilot who is receiving training for cross-country flight in a glider must receive and log flight training in the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in
§ 61.95 Operations in Class B airspace and at airports located within Class B airspace.

(a) A student pilot may not operate an aircraft on a solo flight in Class B airspace unless:

(1) The student pilot has received both ground and flight training from an authorized instructor on that Class B airspace area, and the flight training was received in the specific Class B airspace area for which solo flight is authorized;

(2) The logbook of that student pilot has been endorsed by the authorized instructor who gave the student pilot flight training, and the endorsement is dated within the 90-day period preceding the date of the flight in that Class B airspace area; and

(3) The logbook endorsement specifies that the student pilot has received the required ground and flight training, and has been found proficient to conduct solo flight in that specific Class B airspace area.

(b) A student pilot may not operate an aircraft on a solo flight to, from, or at an airport located within Class B airspace pursuant to §91.131(b) of this chapter unless:

(1) The student pilot has received both ground and flight training from an instructor authorized to provide training to operate at that airport, and the flight and ground training has been received at the specific airport for which the solo flight is authorized;

(2) The logbook of that student pilot has been endorsed by an authorized instructor who gave the student pilot flight training, and the endorsement is dated within the 90-day period preceding the date of the flight at that airport; and

(3) The logbook endorsement specifies that the student pilot has received the required ground and flight training, and has been found proficient to
§ 61.96 Conduct solo flight operations at that specific airport.

Amdt. 61-103, 62 FR 40902, July 30, 1997

Subpart D—Recreational Pilots

§ 61.96 Applicability and eligibility requirements: General.

(a) This subpart prescribes the requirement for the issuance of recreational pilot certificates and ratings, the conditions under which those certificates and ratings are necessary, and the general operating rules for persons who hold those certificates and ratings.

(b) To be eligible for a recreational pilot certificate, a person who applies for that certificate must:

1. Be at least 17 years of age;
2. Be able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, then the Administrator may place such operating limitations on that applicant’s pilot certificate as are necessary for the safe operation of the aircraft;
3. Receive a logbook endorsement from an authorized instructor who—
   (i) Conducted the training or reviewed the applicant’s home study on the aeronautical knowledge areas listed in § 61.97(b) of this part that apply to the aircraft category and class rating sought; and
   (ii) Certified that the applicant is prepared for the required knowledge test.
4. Pass the required knowledge test on the aeronautical knowledge areas listed in § 61.97(b) of this part;
5. Receive flight training and a logbook endorsement from an authorized instructor who—
   (i) Conducted the training on the areas of operation listed in § 61.98(b) of this part that apply to the aircraft category and class rating sought; and
   (ii) Certified that the applicant is prepared for the required practical test.
6. Meet the aeronautical experience requirements of § 61.99 of this part that apply to the aircraft category and class rating sought before applying for the practical test;
7. Pass the required practical test on the areas of operation listed in § 61.98(b) of this part that apply to the aircraft category and class rating sought; and
8. Comply with the sections of this part that apply to the aircraft category and class rating sought.

§ 61.97 Aeronautical knowledge.

(a) General. A person who applies for a recreational pilot certificate must receive and log ground training from an authorized instructor or complete a home-study course on the aeronautical knowledge areas of paragraph (b) of this section that apply to the aircraft category and class rating sought.

(b) Aeronautical knowledge areas. (1) Applicable Federal Aviation Regulations of this chapter that relate to recreational pilot privileges, limitations, and flight operations;
(2) Accident reporting requirements of the National Transportation Safety Board;
(3) Use of the applicable portions of the “Aeronautical Information Manual” and FAA advisory circulars;
(4) Use of aeronautical charts for VFR navigation using pilotage with the aid of a magnetic compass;
(5) Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical weather reports and forecasts;
(6) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;
(7) Effects of density altitude on takeoff and climb performance;
(8) Weight and balance computations;
(9) Principles of aerodynamics, powerplants, and aircraft systems;
(10) Stall awareness, spin entry, spins, and spin recovery techniques, if applying for an airplane single-engine rating;
(11) Aeronautical decision making and judgment; and
(12) Preflight action that includes—
   (i) How to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements; and
§ 61.98 Flight proficiency.

(a) General. A person who applies for a recreational pilot certificate must receive and log ground and flight training from an authorized instructor on the areas of operation of this section that apply to the aircraft category and class rating sought.

(b) Areas of operation.

1. For a single-engine airplane rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Airport operations;
   (iv) Takeoffs, landings, and go-arounds;
   (v) Performance maneuvers;
   (vi) Ground reference maneuvers;
   (vii) Navigation;
   (viii) Slow flight and stalls;
   (ix) Emergency operations; and
   (x) Postflight procedures.

2. For a helicopter rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Airport and heliport operations;
   (iv) Hovering maneuvers;
   (v) Takeoffs, landings, and go-arounds;
   (vi) Performance maneuvers;
   (vii) Ground reference maneuvers;
   (viii) Navigation;
   (ix) Slow flight and stalls;
   (x) Emergency operations; and
   (xi) Postflight procedures.

3. For a gyroplane rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Airport operations;
   (iv) Takeoffs, landings, and go-arounds;
   (v) Performance maneuvers;
   (vi) Ground reference maneuvers;
   (vii) Navigation;
   (viii) Flight at slow airspeeds;
   (ix) Emergency operations; and
   (x) Postflight procedures.

§ 61.99 Aeronautical experience.

A person who applies for a recreational pilot certificate must receive and log at least 30 hours of flight training time that includes at least:

(a) 15 hours of flight training from an authorized instructor on the areas of operation listed in §61.98 of this part that consists of at least:
   (1) Except as provided in §61.100 of this part, 2 hours of flight training en route to an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, which includes at least three takeoffs and three landings at the airport located more than 25 nautical miles from the airport where the applicant normally trains; and
   (2) 3 hours of flight training in the aircraft for the rating sought in preparation for the practical test within the 60 days preceding the date of the practical test.

(b) 3 hours of solo flying in the aircraft for the rating sought, on the areas of operation listed in §61.98 of this part that apply to the aircraft category and class rating sought.

§ 61.100 Pilots based on small islands.

(a) An applicant located on an island from which the flight training required in §61.99(a)(1) of this part cannot be accomplished without flying over water for more than 10 nautical miles from the nearest shoreline need not comply with the requirements of that section. However, if other airports that permit civil operations are available to which a flight may be made without flying over water for more than 10 nautical miles from the nearest shoreline, the applicant must show completion of a dual flight between two airports, which must include three landings at the other airport.

(b) An applicant who complies with paragraph (a) of this section and meets all requirements for the issuance of a recreational pilot certificate, except the requirements of §61.99(a)(1) of this part, will be issued a pilot certificate with an endorsement containing the following limitation, “Passenger carrying prohibited on flights more than 10 nautical miles from (the appropriate island).” The limitation may be subsequently amended to include another island if the applicant complies with the requirements of paragraph (a) of this section for another island.

(c) Upon meeting the requirements of §61.99(a)(1) of this part, the applicant
§ 61.101 Recreational pilot privileges and limitations.

(a) A person who holds a recreational pilot certificate may:

(1) Carry no more than one passenger; and

(2) Not pay less than the pro rata share of the operating expenses of a flight with a passenger, provided the expenses involve only fuel, oil, airport expenses, or aircraft rental fees.

(b) A person who holds a recreational pilot certificate may act as pilot in command of an aircraft on a flight that is within 50 nautical miles from the departure airport, provided that person has:

(1) Received ground and flight training for takeoff, departure, arrival, and landing procedures at the departure airport;

(2) Received ground and flight training for the area, terrain, and aids to navigation that are in the vicinity of the departure airport;

(3) Been found proficient to operate the aircraft at the departure airport and the area within 50 nautical miles from that airport; and

(4) Received from an authorized instructor a logbook endorsement, which is carried in the person’s possession in the aircraft, that permits flight within 50 nautical miles from the departure airport.

(c) A person who holds a recreational pilot certificate may act as pilot in command of an aircraft on a flight that exceeds 50 nautical miles from the departure airport, provided that person has:

(1) Received ground and flight training from an authorized instructor on the cross-country training requirements of subpart E of this part that apply to the aircraft rating held;

(2) Been found proficient in cross-country flying; and

(3) Received from an authorized instructor a logbook endorsement, which is carried on the person’s possession in the aircraft, that certifies the person has received and been found proficient in the cross-country training requirements of subpart E of this part that apply to the aircraft rating held.

(d) Except as provided in paragraph (h) of this section, a recreational pilot may not act as pilot in command of an aircraft:

(1) That is certificated for more than four occupants, with more than one powerplant, with a powerplant of more than 180 horsepower, or with retractable landing gear.

(2) That is classified as a multiengine airplane, powered-lift, glider, airship, or balloon;

(3) That is carrying a passenger or property for compensation or hire;

(4) For compensation or hire;

(5) In furtherance of a business;

(6) Between sunset and sunrise;

(7) In airspace in which communication with air traffic control is required;

(8) At an altitude of more than 10,000 feet MSL or 2,000 feet AGL, whichever is higher;

(9) When the flight or surface visibility is less than 3 statute miles;

(10) Without visual reference to the surface;

(11) On a flight outside the United States;

(12) To demonstrate that aircraft in flight to a prospective buyer;

(13) That is used in a passenger-carrying airlift and sponsored by a charitable organization; and

(14) That is towing any object.

(e) A recreational pilot may not act as a pilot flight crewmember on any aircraft for which more than one pilot is required by the type certificate of the aircraft or the regulations under which the flight is conducted, except when:

(1) Receiving flight training from a person authorized to provide flight training on board an airship; and

(2) No person other than a required flight crewmember is carried on the aircraft.

(f) A person who holds a recreational pilot certificate, has logged fewer than 400 flight hours, and has not logged pilot-in-command time in an aircraft within the 180 days preceding the flight shall not act as pilot in command of an aircraft until the pilot receives flight training and a logbook endorsement from an authorized instructor, and the instructor certifies that the person is proficient to act as pilot in command of the aircraft. This requirement can
be met in combination with the requirements of §§61.56 and 61.57 of this part, at the discretion of the authorized instructor.

(g) A recreational pilot certificate issued under this subpart carries the notation, "Holder does not meet ICAO requirements."

(h) For the purpose of obtaining additional certificates or ratings while under the supervision of an authorized instructor, a recreational pilot may fly as the sole occupant of an aircraft:

(1) For which the pilot does not hold an appropriate category or class rating;

(2) Within airspace that requires communication with air traffic control; or

(3) Between sunset and sunrise, provided the flight or surface visibility is at least 5 statute miles.

(i) In order to fly solo as provided in paragraph (h) of this section, the recreational pilot must meet the appropriate aeronautical knowledge and flight training requirements of §61.87 for that aircraft. When operating an aircraft under the conditions specified in paragraph (h) of this section, the recreational pilot shall carry the logbook that has been endorsed for each flight by an authorized instructor who:

(1) Has given the recreational pilot training in the make and model of aircraft in which the solo flight is to be made;

(2) Has found that the recreational pilot has met the applicable requirements of §61.87; and

(3) Has found that the recreational pilot is competent to make solo flights in accordance with the logbook endorsement.

**Subpart E—Private Pilots**

§ 61.102 Applicability.

This subpart prescribes the requirements for the issuance of private pilot certificates and ratings, the conditions under which those certificates and ratings are necessary, and the general operating rules for persons who hold those certificates and ratings.

§ 61.103 Eligibility requirements: General.

To be eligible for a private pilot certificate, a person must:

(a) Be at least 17 years of age for a rating in other than a glider or balloon.

(b) Be at least 16 years of age for a rating in a glider or balloon.

(c) Be able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, then the Administrator may place such operating limitations on that applicant’s pilot certificate as are necessary for the safe operation of the aircraft.

(d) Receive a logbook endorsement from an authorized instructor who:

(1) Conducted the training or reviewed the person’s home study on the aeronautical knowledge areas listed in §61.105(b) of this part that apply to the aircraft rating sought; and

(2) Certified that the person is prepared for the required knowledge test.

(e) Pass the required knowledge test on the aeronautical knowledge areas listed in §61.105(b) of this part.

(f) Receive flight training and a logbook endorsement from an authorized instructor who:

(1) Conducted the training in the areas of operation listed in §61.107(b) of this part that apply to the aircraft rating sought; and

(2) Certified that the person is prepared for the required practical test.

(g) Meet the aeronautical experience requirements of this part that apply to the aircraft rating sought before applying for the practical test.

(h) Pass a practical test on the areas of operation listed in §61.107(b) of this part that apply to the aircraft rating sought.

(i) Comply with the appropriate sections of this part that apply to the aircraft category and class rating sought.

§ 61.105 Aeronautical knowledge.

(a) General. A person who is applying for a private pilot certificate must receive and log ground training from an authorized instructor or complete a home-study course on the aeronautical knowledge areas of paragraph (b) of
§ 61.107 Flight proficiency.

(a) General. A person who applies for a private pilot certificate must receive and log ground and flight training from an authorized instructor on the areas of operation of this section that apply to the aircraft category and class rating sought.

(b) Areas of operation. (1) For an airplane category rating with a single-engine class rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Airport and seaplane base operations;
   (iv) Takeoffs, landings, and go-arounds;
   (v) Performance maneuvers;
   (vi) Ground reference maneuvers;
   (vii) Navigation;
   (viii) Slow flight and stalls;
   (ix) Basic instrument maneuvers;
   (x) Emergency operations;
   (xi) Night operations, except as provided in §61.110 of this part; and
   (xii) Postflight procedures.

(2) For an airplane category rating with a multiengine class rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Airport and seaplane base operations;
   (iv) Takeoffs, landings, and go-arounds;
   (v) Performance maneuvers;
   (vi) Ground reference maneuvers;
   (vii) Navigation;
   (viii) Slow flight and stalls;
   (ix) Basic instrument maneuvers;
   (x) Emergency operations;
   (xi) Multiengine operations;
   (xii) Night operations, except as provided in §61.110 of this part; and
   (xiii) Postflight procedures.

(3) For a rotorcraft category rating with a helicopter class rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Airport and heliport operations;
   (iv) Hovering maneuvers;
   (v) Takeoffs, landings, and go-arounds;
   (vi) Performance maneuvers;
   (vii) Navigation;
   (viii) Slow flight and stalls;
   (ix) Basic instrument maneuvers;
   (x) Emergency operations;
   (xi) Night operations, except as provided in §61.110 of this part; and
   (xii) Postflight procedures.

(4) For a rotorcraft category rating with a gyroplane class rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Airport operations;
   (iv) Takeoffs, landings, and go-arounds;
   (v) Performance maneuvers;
   (vi) Ground reference maneuvers;
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§ 61.109 Aeronautical experience.

(a) For an airplane single-engine rating. Except as provided in paragraph (i) of this section, a person who applies for a private pilot certificate with an airplane category and single-engine class rating must log at least 40 hours of flight time that includes at least 20 hours of flight training from an authorized instructor and 10 hours of solo flight training in the areas of operation listed in § 61.107(b)(1) of this part, and the training must include at least—

(1) 3 hours of cross-country flight training in a single-engine airplane;

(2) Except as provided in § 61.110 of this part, 3 hours of night flight training in a single-engine airplane that includes—

(i) One cross-country flight of over 100 nautical miles total distance; and

(ii) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(3) 3 hours of flight training in a single-engine airplane on the control and maneuvering of an airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight;

(4) 3 hours of flight training in preparation for the practical test in a single-engine airplane, which must have been performed within 60 days preceding the date of the test; and

(5) 10 hours of solo flight time in a single-engine airplane, consisting of at least—

(i) 5 hours of solo cross-country time; and

(ii) One solo cross-country flight of at least 150 nautical miles total distance, with full-stop landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the takeoff and landing locations; and

(iii) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

§ 61.109 Aeronautical experience.

(a) For an airplane single-engine rating. Except as provided in paragraph (i) of this section, a person who applies for a private pilot certificate with an airplane category and single-engine class rating must log at least 40 hours of flight time that includes at least 20 hours of flight training from an authorized instructor and 10 hours of solo flight training in the areas of operation listed in § 61.107(b)(1) of this part, and the training must include at least—

(1) 3 hours of cross-country flight training in a single-engine airplane;

(2) Except as provided in § 61.110 of this part, 3 hours of night flight training in a single-engine airplane that includes—

(i) One cross-country flight of over 100 nautical miles total distance; and

(ii) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(3) 3 hours of flight training in a single-engine airplane on the control and maneuvering of an airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight;

(4) 3 hours of flight training in preparation for the practical test in a single-engine airplane, which must have been performed within 60 days preceding the date of the test; and

(5) 10 hours of solo flight time in a single-engine airplane, consisting of at least—

(i) 5 hours of solo cross-country time; and

(ii) One solo cross-country flight of at least 150 nautical miles total distance, with full-stop landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the takeoff and landing locations; and

(iii) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(b) For an airplane multiengine rating. Except as provided in paragraph (i) of this section, a person who applies for a private pilot certificate with an airplane category and multiengine class rating must log at least 40 hours of flight time that includes at least 20 hours of flight training from an authorized instructor and 10 hours of solo flight training in the areas of operation listed in §61.107(b)(2) of this part, and the training must include at least—

(1) 3 hours of cross-country flight training in a multiengine airplane;
(2) Except as provided in §61.110 of this part, 3 hours of night flight training in a multiengine airplane that includes—
   (i) One cross-country flight of over 100 nautical miles total distance; and
   (ii) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
(3) 3 hours of flight training in preparation for the practical test in a multiengine airplane, which must have been performed within the 60-day period preceding the date of the test; and
(4) 10 hours of solo flight time in an airplane consisting of at least—
   (i) 5 hours of solo cross-country time;
   (ii) One solo cross-country flight of at least 150 nautical miles total distance, with full-stop landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles between the takeoff and landing locations; and
   (iii) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(c) For a helicopter rating. Except as provided in paragraph (i) of this section, a person who applies for a private pilot certificate with rotorcraft category and helicopter class rating must log at least 40 hours of flight time that includes at least 20 hours of flight training from an authorized instructor and 10 hours of solo flight training in the areas of operation listed in §61.107(b)(3) of this part, and the training must include at least—

(1) 3 hours of cross-country flight training in a helicopter;
(2) Except as provided in §61.110 of this part, 3 hours of night flight training in a helicopter that includes—
   (i) One cross-country flight of over 50 nautical miles total distance; and
   (ii) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.
(3) 3 hours of flight training in preparation for the practical test in a helicopter, which must have been performed within 60 days preceding the date of the test; and
(4) 10 hours of solo flight time in a helicopter, consisting of at least—
   (i) 3 hours cross-country time;
   (ii) One solo cross-country flight of at least 75 nautical miles total distance, with landings at a minimum of three points, and one segment of the flight being a straight-line distance of at least 25 nautical miles between the takeoff and landing locations; and
   (iii) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(d) For a gyroplane rating. Except as provided in paragraph (i) of this section, a person who applies for a private pilot certificate with rotorcraft category and gyroplane class rating must log at least 40 hours of flight time that includes at least 20 hours of flight training from an authorized instructor and 10 hours of solo flight training in the areas of operation listed in §61.107(b)(4) of this part, and the training must include at least—

(1) 3 hours of cross-country flight training in a gyroplane;
(2) Except as provided in §61.110 of this part, 3 hours of night flight training in a gyroplane that includes—
   (i) One cross-country flight of over 50 nautical miles total distance; and
(ii) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(3) 3 hours of flight training in preparation for the practical test in a gyroplane, which must have been performed within the 60-day period preceding the date of the test; and

(4) 10 hours of solo flight time in a gyroplane, consisting of at least—

(i) 3 hours of cross-country time;

(ii) One solo cross-country flight of over 75 nautical miles total distance, with landings at a minimum of three points, and one segment of the flight being a straight-line distance of at least 25 nautical miles between the takeoff and landing locations; and

(iii) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(e) For a powered-lift rating. Except as provided in paragraph (i) of this section, a person who applies for a private pilot certificate with a powered-lift category rating must log at least 40 hours of flight time that includes at least 20 hours of flight training from an authorized instructor and 10 hours of solo flight training in the areas of operation listed in § 61.107(b)(5) of this part, and the training must include at least—

(1) 3 hours of cross-country flight training in a powered-lift;

(2) Except as provided in § 61.110 of this part, 3 hours of night flight training in a powered-lift that includes—

(i) One cross-country flight of over 100 nautical miles total distance; and

(ii) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(3) 3 hours of flight training in a powered-lift on the control and maneuvering of a powered-lift solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems and facilities and radar services appropriate to instrument flight;

(4) 3 hours of flight training in preparation for the practical test in a powered-lift, which must have been performed within the 60-day period preceding the date of the test; and

(5) 10 hours of solo flight time in an airplane or powered-lift consisting of at least—

(i) 5 hours cross-country time;

(ii) One cross-country flight of at least 150 nautical miles total distance, with landings at a minimum of three points, and one segment of the flight being a straight-line distance of at least 50 nautical miles between the takeoff and landing locations; and

(iii) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(f) For a glider category rating. (1) If the applicant for a private pilot certificate with a glider category rating has not logged at least 40 hours of flight time as a pilot in a heavier-than-air aircraft, the applicant must log at least 10 hours of flight time in a glider in the areas of operation listed in § 61.107(b)(6) of this part, and that flight time must include at least—

(i) 20 flights in a glider in the areas of operations listed in § 61.107(b)(6) of this part, including at least 3 training flights in a glider with an authorized instructor in preparation for the practical test that must have been performed within the 60-day period preceding the date of the test; and

(ii) 2 hours of solo flight time in a glider in the areas of operation listed in § 61.107(b)(6) of this part, with not less than 10 launches and landings being performed.

(2) If the applicant has logged at least 40 hours of flight time in a heavier-than-air aircraft, the applicant must log at least 3 hours of flight time in a glider in the areas of operation listed in § 61.107(b)(6) of this part, and that flight time must include at least—

(i) 10 solo flights in a glider in the areas of operation listed in § 61.107(b)(6) of this part; and

(ii) 3 training flights in a glider with an authorized instructor in preparation for the practical test that must have been performed within the 60-day period preceding the date of the test.
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(g) For an airship rating. A person who applies for a private pilot certificate with a lighter-than-air category and airship class rating must log at least:

(1) 25 hours of flight training in airships on the areas of operation listed in §61.107(b)(7) of this part, which consists of at least:

(i) 3 hours of cross-country flight training in an airship;

(ii) Except as provided in §61.110 of this part, 3 hours of night flight training in an airship that includes:

(A) A cross-country flight of over 25 nautical miles total distance; and

(B) Five takeoffs and five landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(2) 3 hours of flight training in an airship on the control and maneuvering of an airship solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight;

(3) 3 hours of flight training in an airship in preparation for the practical test within the 60 days preceding the date of the test; and

(4) 5 hours performing the duties of pilot in command in an airship with an authorized instructor.

(h) For a balloon rating. A person who applies for a private pilot certificate with a lighter-than-air category and balloon class rating must log at least 10 hours of flight training that includes at least six training flights with an authorized instructor in the areas of operation listed in §61.107(b)(8) of this part, that includes—

(1) Gas balloon. If the training is being performed in a gas balloon, at least two flights of 2 hours each that consists of—

(i) At least one training flight with an authorized instructor within 60 days prior to application for the rating on the areas of operation for a gas balloon;

(ii) At least one flight performing the duties of pilot in command in a gas balloon with an authorized instructor; and

(iii) At least one flight involving a controlled ascent to 3,000 feet above the launch site.

(2) Balloon with an airborne heater. If the training is being performed in a balloon with an airborne heater, at least—

(i) Two flights of 1 hour each within 60 days prior to application for the rating on the areas of operation appropriate to a balloon with an airborne heater;

(ii) One solo flight in a balloon with an airborne heater; and

(iii) At least one flight involving a controlled ascent to 2,000 feet above the launch site.

(i) Permitted credit for use of a flight simulator or flight training device. (1) Except as provided in paragraphs (i)(2) of this section, a maximum of 2.5 hours of training in a flight simulator or flight training device representing the category, class, and type, if applicable, of aircraft appropriate to the rating sought, may be credited toward the flight training time required by this section, if received from an authorized instructor.

(2) A maximum of 5 hours of training in a flight simulator or flight training device representing the category, class, and type, if applicable, of aircraft appropriate to the rating sought, may be credited toward the flight training time required by this section if the training is accomplished in a course conducted by a training center certified under part 142 of this chapter.

(3) Except when fewer hours are approved by the Administrator, an applicant for a private pilot certificate with an airplane, rotorcraft, or powered-lift rating, who has satisfactorily completed an approved private pilot course conducted by a training center certified under part 142 of this chapter, need only have a total of 35 hours of aeronautical experience to meet the requirements of this section.


§ 61.110  Night flying exceptions.

(a) Subject to the limitations of paragraph (b) of this section, a person is not required to comply with the night flight training requirements of
§ 61.113 Private pilot privileges and limitations: Pilot in command.

(a) Except as provided in paragraphs (b) through (g) of this section, no person who holds a private pilot certificate may act as pilot in command of an aircraft that is carrying passengers or property for compensation or hire; nor may that person, for compensation or hire, act as pilot in command of an aircraft.

(b) A private pilot may, for compensation or hire, act as pilot in command of an aircraft in connection with any business or employment if:

(1) The flight is only incidental to that business or employment; and

(2) The aircraft does not carry passengers or property for compensation or hire.

(c) A private pilot may not pay less than the pro rata share of the operating expenses of a flight with passengers, provided the expenses involve only fuel, oil, airport expenditures, or rental fees.

(d) A private pilot may act as pilot in command of an aircraft used in a passenger-carrying airlift sponsored by a charitable organization described in paragraph (d)(7) of this section, and for which the passengers make a donation to the organization, when the following requirements are met:

(1) The sponsor of the airlift notifies the FAA Flight Standards District Office with jurisdiction over the area
§ 61.115 Balloon rating: Limitations.

(a) If a person who applies for a private pilot certificate with a balloon rating takes a practical test in a balloon with an airborne heater:

1. The pilot certificate will contain a limitation restricting the exercise of the privileges of that certificate to a balloon with an airborne heater; and

2. The limitation may be removed when the person obtains the required aeronautical experience in a gas balloon and receives a logbook endorsement from an authorized instructor who attests to the person's accomplishment of the required aeronautical experience and ability to satisfactorily operate a gas balloon.

(b) If a person who applies for a private pilot certificate with a balloon rating takes a practical test in a gas balloon:

1. The pilot certificate will contain a limitation restricting the exercise of the privilege of that certificate to a gas balloon; and

2. The limitation may be removed when the person obtains the required aeronautical experience in a balloon with an airborne heater and receives a logbook endorsement from an authorized instructor who attests to the person's accomplishment of the required aeronautical experience and ability to satisfactorily operate a balloon with an airborne heater.

§ 61.117 Private pilot privileges and limitations: Second in command of aircraft requiring more than one pilot.

Except as provided in §61.113 of this part, no private pilot may, for compensation or hire, act as second in command of an aircraft that is type certified for more than one pilot, nor may that pilot act as second in command of such an aircraft that is carrying passengers or property for compensation or hire.


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and ratings are necessary, and the general operating rules for persons who hold those certificates and ratings.

§ 61.123 Eligibility requirements: General.

To be eligible for a commercial pilot certificate, a person must:

(a) Be at least 18 years of age;
(b) Be able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, then the Administrator may place such operating limitations on that applicant's pilot certificate as are necessary for the safe operation of the aircraft.

(c) Receive a logbook endorsement from an authorized instructor who:

(1) Conducted the required ground training or reviewed the person's home study on the aeronautical knowledge areas listed in §61.125 of this part that apply to the aircraft category and class rating sought; and
(2) Certified that the person is prepared for the required knowledge test that applies to the aircraft category and class rating sought.

(d) Pass the required knowledge test on the aeronautical knowledge areas listed in §61.125 of this part;

(e) Receive the required training and a logbook endorsement from an authorized instructor who:

(1) Conducted the training on the areas of operation listed in §61.127(b) of this part that apply to the aircraft category and class rating sought; and
(2) Certified that the person is prepared for the required practical test.

(f) Meet the aeronautical experience requirements of this subpart that apply to the aircraft category and class rating sought before applying for the practical test;

(g) Pass the required practical test on the areas of operation listed in §61.127(b) of this part that apply to the aircraft category and class rating sought;

(h) Hold at least a private pilot certificate issued under this part or meet the requirements of §61.73; and

(i) Comply with the sections of this part that apply to the aircraft category and class rating sought.

§ 61.125 Aeronautical knowledge.

(a) General. A person who applies for a commercial pilot certificate must receive and log ground training from an authorized instructor, or complete a home-study course, on the aeronautical knowledge areas of paragraph (b) of this section that apply to the aircraft category and class rating sought.

(b) Aeronautical knowledge areas. (1) Applicable Federal Aviation Regulations of this chapter that relate to commercial pilot privileges, limitations, and flight operations;

(2) Accident reporting requirements of the National Transportation Safety Board;

(3) Basic aerodynamics and the principles of flight;

(4) Meteorology to include recognition of critical weather situations, windshear recognition and avoidance, and the use of aeronautical weather reports and forecasts;

(5) Safe and efficient operation of aircraft;

(6) Weight and balance computations;

(7) Use of performance charts;

(8) Significance and effects of exceeding aircraft performance limitations;

(9) Use of aeronautical charts and a magnetic compass for pilotage and dead reckoning;

(10) Use of air navigation facilities;

(11) Aeronautical decision making and judgment;

(12) Principles and functions of aircraft systems;

(13) Maneuvers, procedures, and emergency operations appropriate to the aircraft;

(14) Night and high-altitude operations;

(15) Procedures for operating within the National Airspace System; and

(16) Procedures for flight and ground training for lighter-than-air ratings.

§ 61.127 Flight proficiency.

(a) General. A person who applies for a commercial pilot certificate must receive and log ground and flight training from an authorized instructor on the areas of operation of this section that apply to the aircraft category and class rating sought.

(b) Areas of operation. (1) For an airplane category rating with a single-engine class rating:
§ 61.129 Aeronautical experience.

(a) For an airplane single-engine rating, Except as provided in paragraph (i) of this section, a person who applies for a commercial pilot certificate with an airplane category and single-engine
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class rating must log at least 250 hours of flight time as a pilot that consists of at least:

(1) 100 hours in powered aircraft, of which 50 hours must be in airplanes.

(2) 100 hours of pilot-in-command flight time, which includes at least—

(i) 50 hours in airplanes; and

(ii) 50 hours in cross-country flight of which at least 10 hours must be in airplanes.

(3) 20 hours of training on the areas of operation listed in § 61.127(b)(1) of this part that includes at least—

(i) 10 hours of instrument training of which at least 5 hours must be in a single-engine airplane;

(ii) 10 hours of training in an airplane that has a retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered, or for an applicant seeking a single-engine seaplane rating, 10 hours of training in a seaplane that has flaps and a controllable pitch propeller;

(iii) One cross-country flight of at least 2 hours in a single-engine airplane in day VFR conditions, consisting of a total straight-line distance of more than 100 nautical miles from the original point of departure;

(iv) One cross-country flight of at least 2 hours in a single-engine airplane in night VFR conditions, consisting of a total straight-line distance of more than 100 nautical miles from the original point of departure;

(v) 3 hours in a single-engine airplane in preparation for the practical test within the 60-day period preceding the date of the test.

(4) 10 hours of solo flight in a single-engine airplane on the areas of operation listed in § 61.127(b)(1) of this part, which includes at least—

(i) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles; and

(ii) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(b) For an airplane multiengine rating. Except as provided in paragraph (i) of this section, a person who applies for a commercial pilot certificate with an airplane category and multiengine class rating must log at least 250 hours of flight time as a pilot that consists of at least:

(1) 100 hours in powered aircraft, of which 50 hours must be in airplanes.

(2) 100 hours of pilot-in-command flight time, which includes at least—

(i) 50 hours in airplanes; and

(ii) 50 hours in cross-country flight of which at least 10 hours must be in airplanes.

(3) 20 hours of training on the areas of operation listed in § 61.127(b)(2) of this part that includes at least—

(i) 10 hours of instrument training of which at least 5 hours must be in a multiengine airplane;

(ii) 10 hours of training in a multiengine airplane that has a retractable landing gear, flaps, and controllable pitch propellers, or is turbine-powered, or for an applicant seeking a multiengine seaplane rating, 10 hours of training in a multiengine seaplane that has flaps and a controllable pitch propeller;

(iii) One cross-country flight of at least 2 hours in a multiengine airplane in day VFR conditions, consisting of a total straight-line distance of more than 100 nautical miles from the original point of departure;

(iv) One cross-country flight of at least 2 hours in a multiengine airplane in night VFR conditions, consisting of a total straight-line distance of more than 100 nautical miles from the original point of departure;

(v) 3 hours in a multiengine airplane in preparation for the practical test within the 60-day period preceding the date of the test.

(4) 10 hours of solo flight in a multiengine airplane on the areas of operation listed in § 61.127(b)(2) of this part, which includes at least—

(i) One cross-country flight of not less than 300 nautical miles total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles; and

(ii) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
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(i) One cross-country flight of not less than 300 nautical miles total distance with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii, the longest segment need only have a straight-line distance of at least 150 nautical miles; and

(ii) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower.

(c) For a helicopter rating. Except as provided in paragraph (i) of this section, a person who applies for a commercial pilot certificate with a rotorcraft category and helicopter class rating must log at least 150 hours of flight time as a pilot that consists of at least:

(1) 100 hours in powered aircraft, of which 50 hours must be in helicopters.

(2) 100 hours of pilot-in-command flight time, which includes at least—

(i) 35 hours in helicopters; and

(ii) 10 hours in cross-country flight in helicopters.

(3) 20 hours of training on the areas of operation listed in §61.127(b)(3) of this part that includes at least—

(i) 10 hours of instrument training in an aircraft;

(ii) One cross-country flight of at least 2 hours in a helicopter in day VFR conditions, consisting of a total straight-line distance of more than 50 nautical miles from the original point of departure;

(iii) One cross-country flight of at least 2 hours in a helicopter in night VFR conditions, consisting of a total straight-line distance of more than 50 nautical miles from the original point of departure; and

(iv) 3 hours in a helicopter in preparation for the practical test within the 60-day period preceding the date of the test.

(4) 10 hours of solo flight in a helicopter on the areas of operation listed in §61.127(b)(3) of this part, which includes at least—

(i) One cross-country flight with landings at a minimum of three points, with one segment consisting of a straight-line distance of at least 50 nautical miles from the original point of departure; and

(ii) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight in the traffic pattern).

(4) 10 hours of solo flight in a gyroplane on the areas of operation listed in §61.127(b)(4) of this part, which includes at least—

(i) One cross-country flight of at least 2 hours in a gyroplane in day VFR conditions, consisting of a total straight-line distance of more than 50 nautical miles from the original point of departure;

(ii) One cross-country flight of at least 2 hours in a gyroplane in night VFR conditions, consisting of a total straight-line distance of more than 50 nautical miles from the original point of departure; and

(iii) One cross-country flight of at least 2 hours in a gyroplane in day VFR conditions, consisting of a total straight-line distance of more than 50 nautical miles from the original point of departure; and

(iv) 3 hours in a gyroplane in preparation for the practical test within the 60-day period preceding the date of the test.

(4) 10 hours of solo flight in a gyroplane on the areas of operation listed in §61.127(b)(4) of this part, which includes at least—

(i) One cross-country flight with landings at a minimum of three points, with one segment consisting of a straight-line distance of at least 50 nautical miles from the original point of departure; and

(ii) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight in the traffic pattern).
(e) For a powered-lift rating. Except as provided in paragraph (i) of this section, a person who applies for a commercial pilot certificate with a powered-lift category rating must log at least 250 hours of flight time as a pilot that consists of at least:

(1) 100 hours in powered aircraft, of which 50 hours must be in a powered-lift.

(2) 100 hours of pilot-in-command flight time, which includes at least—

(i) 50 hours in a powered-lift; and

(ii) 50 hours in cross-country flight of which 10 hours must be in a powered-lift.

(3) 20 hours of training on the areas of operation listed in §61.127(b)(5) of this part that includes at least—

(i) 10 hours of instrument training, of which at least 5 hours must be in a powered-lift;

(ii) One cross-country flight of at least 2 hours in a powered-lift in day VFR conditions, consisting of a total straight-line distance of more than 100 nautical miles from the original point of departure;

(iii) One cross-country flight of at least 2 hours in a powered-lift in night VFR conditions, consisting of a total straight-line distance of more than 100 nautical miles from the original point of departure; and

(iv) 3 hours in a powered-lift in preparation for the practical test within the 60-day period preceding the date of the test.

(4) 10 hours of solo flight in a powered-lift on the areas of operation listed in §61.127(b)(5) of this part, which includes at least—

(i) One cross-country flight of not less than 300 nautical miles total distance with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point. However, if this requirement is being met in Hawaii the longest segment need only have a straight-line distance of at least 150 nautical miles; and

(ii) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

(f) For a glider rating. A person who applies for a commercial pilot certificate with a glider category rating must log at least—

(1) 25 hours of flight time as a pilot in a glider and that flight time must include at least 100 flights in a glider as pilot in command, including at least—

(i) 3 hours of flight training in a glider or 10 training flights in a glider with an authorized instructor on the areas of operation listed in §61.127(b)(6) of this part, including at least 3 training flights in a glider with an authorized instructor in preparation for the practical test within the 60-day period preceding the date of the test; and

(ii) 2 hours of solo flight that include not less than 10 solo flights in a glider on the areas of operation listed in §61.127(b)(6) of this part; or

(2) 200 hours of flight time as a pilot in heavier-than-air aircraft and at least 20 flights in a glider as pilot in command, including at least—

(i) 3 hours of flight training in a glider or 10 training flights in a glider with an authorized instructor on the areas of operation listed in §61.127(b)(6) of this part including at least 3 training flights in a glider with an authorized instructor in preparation for the practical test within the 60-day period preceding the date of the test; and

(ii) 5 solo flights in a glider on the areas of operation listed in §61.127(b)(6) of this part.

(g) For an airship rating. A person who applies for a commercial pilot certificate with a lighter-than-air category and airship class rating must log at least 200 hours of flight time as a pilot, which includes at least the following hours:

(1) 50 hours in airships.

(2) 30 hours of pilot-in-command time in airships, which consists of at least—

(i) 10 hours of cross-country flight time in airships; and

(ii) 10 hours of night flight time in airships.

(3) 40 hours of instrument time, which consists of at least 20 hours in flight, of which 10 hours must be in flight in airships.

(4) 20 hours of flight training in airships on the areas of operation listed in §61.127(b)(7) of this part, which includes at least—
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(i) 3 hours in an airship in preparation for the practical test within the 60-day period preceding the date of the test;

(ii) One cross-country flight of at least 1 hour in duration in an airship in day VFR conditions, consisting of a total straight-line distance of more than 25 nautical miles from the original point of departure; and

(iii) One cross-country flight of at least 1 hour in duration in an airship in night VFR conditions, consisting of a total straight-line distance of more than 25 nautical miles from the original point of departure.

(5) 10 hours of flight training performing the duties of pilot in command with an authorized instructor on the areas of operation listed in §61.127(b)(7) of this part, which includes at least—

(i) One cross-country flight with landings at a minimum of three points, with one segment consisting of a straight-line distance of at least 25 nautical miles from the original point of departure; and

(ii) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight in the traffic pattern).

(h) For a balloon rating. A person who applies for a commercial pilot certificate with a lighter-than-air category and a balloon class rating must log at least 35 hours of flight time as a pilot, which includes at least the following requirements:

(1) 20 hours in balloons;

(2) 10 flights in balloons;

(3) Two flights in balloons as the pilot in command; and

(4) 10 hours of flight training that includes at least 10 training flights with an authorized instructor in balloons on the areas of operation listed in §61.127(b)(8) of this part, which consists of at least—

(i) For a gas balloon—

(A) 2 training flights of 2 hours each with an authorized instructor in a gas balloon on the areas of operation appropriate to a gas balloon within 60 days prior to application for the rating;

(B) 2 flights performing the duties of pilot in command in a gas balloon with an authorized instructor on the appropriate areas of operation; and

(C) One flight involving a controlled ascent to 5,000 feet above the launch site.

(ii) For a balloon with an airborne heater—

(A) 2 training flights of 1 hour each with an authorized instructor in a balloon with an airborne heater on the areas of operation appropriate to a balloon with an airborne heater within 60 days prior to application for the rating;

(B) Two solo flights in a balloon with an airborne heater on the appropriate areas of operation; and

(C) One flight involving a controlled ascent to 3,000 feet above the launch site.

(i) Permitted credit for use of a flight simulator or flight training device. (1) Except as provided in paragraph (i)(2) of this section, an applicant who has not accomplished the training required by this section in a course conducted by a training center certificated under part 142 of this chapter may:

(i) Credit a maximum of 50 hours toward the total aeronautical experience requirements for an airplane or powered-lift rating, provided the aeronautical experience was obtained from an authorized instructor in a flight simulator or flight training device that represents that class of airplane or powered-lift category and type, if applicable, appropriate to the rating sought; and

(ii) Credit a maximum of 25 hours toward the total aeronautical experience requirements of this section for a helicopter rating, provided the aeronautical experience was obtained from an authorized instructor in a flight simulator or flight training device that represents a helicopter and type, if applicable, appropriate to the rating sought.

(2) An applicant who has accomplished the training required by this section in a course conducted by a training center certificated under part 142 of this chapter may:

(i) Credit a maximum of 100 hours toward the total aeronautical experience requirements of this section for an airplane and powered-lift rating, provided the aeronautical experience was obtained from an authorized instructor in
a flight simulator or flight training device that represents that class of airplane or powered-lift category and type, if applicable, appropriate to the rating sought; and

(ii) Credit a maximum of 50 hours toward the total aeronautical experience requirements of this section for a helicopter rating, provided the aeronautical experience was obtained from an authorized instructor in a flight simulator or flight training device that represents a helicopter and type, if applicable, appropriate to the rating sought.

(3) Except when fewer hours are approved by the Administrator, an applicant for a commercial pilot certificate with an airplane or a powered-lift rating who has satisfactorily completed an approved commercial pilot course conducted by a training center certified under part 142 of this chapter need only have 190 hours of total to meet the aeronautical experience requirements of this section.

§61.131 Exceptions to the night flying requirements.

(a) Subject to the limitations of paragraph (b) of this section, a person is not required to comply with the night flight training requirements of this subpart if the person receives flight training in and resides in the State of Alaska.

(b) A person who receives flight training in and resides in the State of Alaska but does not meet the night flight training requirements of this section:

(1) May be issued a pilot certificate with the limitation “night flying prohibited.”

(2) Must comply with the appropriate night flight training requirements of this subpart within the 12-calendar-month period after the issuance of the pilot certificate. At the end of that period, the certificate will become invalid for use until the person complies with the appropriate night flight training requirements of this subpart. The person may have the “night flying prohibited” limitation removed if the person—

(i) Accomplishes the appropriate night flight training requirements of this subpart; and

(ii) Presents to an examiner a logbook or training record endorsement from an authorized instructor that verifies accomplishment of the appropriate night flight training requirements of this subpart.

§61.133 Commercial pilot privileges and limitations.

(a) Privileges—(1) General. A person who holds a commercial pilot certificate may act as pilot in command of an aircraft—

(i) Carrying persons or property for compensation or hire, provided the person is qualified in accordance with this part and with the applicable parts of this chapter that apply to the operation; and

(ii) For compensation or hire, provided the person is qualified in accordance with this part and with the applicable parts of this chapter that apply to the operation.

(2) Commercial pilots with lighter-than-air category ratings. A person with a commercial pilot certificate with a lighter-than-air category rating may—

(A) For an airship—

(i) Give flight and ground training in an airship for the issuance of a certificate or rating;

(ii) Give an endorsement for a pilot certificate with an airship rating;

(iii) Endorse a student pilot certificate or logbook for solo operating privileges in an airship;

(iv) Act as pilot in command of an airship under IFR or in weather conditions less than the minimum prescribed for VFR flight; and

(v) Give flight and ground training and endorsements that are required for a flight review, an operating privilege or recency-of-experience requirements of this part.

(B) For a balloon—

(i) Give flight and ground training in a balloon for the issuance of a certificate or rating;

(ii) Give an endorsement for a pilot certificate with a balloon rating;
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(C) Endorse a student pilot certificate or logbook for solo operating privileges in a balloon; and

(D) Give ground and flight training and endorsements that are required for a flight review, an operating privilege, or recency-of-experience requirements of this part.

(b) Limitations. (1) A person who applies for a commercial pilot certificate with an airplane category or powered-lift category rating and does not hold an instrument rating in the same category and class will be issued a commercial pilot certificate that contains the limitation, “The carriage of passengers for hire in (airplanes) (powered-lifts) on cross-country flights in excess of 50 nautical miles or at night is prohibited.” The limitation may be removed when the person satisfactorily accomplishes the requirements listed in §61.65 of this part for an instrument rating in the same category and class of aircraft listed on the person’s commercial pilot certificate.

(2) If a person who applies for a commercial pilot certificate with a balloon rating takes a practical test in a balloon with an airborne heater—

(i) The pilot certificate will contain a limitation restricting the exercise of the privileges of that certificate to a balloon with an airborne heater.

(ii) The limitation specified in paragraph (b)(2)(i) of this section may be removed when the person obtains the required aeronautical experience in a balloon and receives a logbook endorsement from an authorized instructor who attests to the person’s accomplishment of the required aeronautical experience and ability to satisfactorily operate a balloon with an airborne heater.

(3) If a person who applies for a commercial pilot certificate with a balloon rating takes a practical test in a balloon—

(i) The pilot certificate will contain a limitation restricting the exercise of the privileges of that certificate to a gas balloon.

(ii) The limitation specified in paragraph (b)(3)(i) of this section may be removed when the person obtains the required aeronautical experience in a balloon with an airborne heater and receives a logbook endorsement from an authorized instructor who attests to

§ 61.151 Applicability.

This subpart prescribes the requirements for the issuance of airline transport pilot certificates and ratings, the conditions under which those certificates and ratings are necessary, and the general operating rules for persons who hold those certificates and ratings.

§ 61.153 Eligibility requirements: General.

To be eligible for an airline transport pilot certificate, a person must:

(a) Be at least 23 years of age;

(b) Be able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, then the Administrator may place such operating limitations on that applicant’s pilot certificate as are necessary for the safe operation of the aircraft;

(c) Be of good moral character;

(d) Meet at least one of the following requirements:

(1) Hold at least a commercial pilot certificate and an instrument rating;

(2) Meet the military experience requirements under §61.73 of this part to qualify for a commercial pilot certificate, and an instrument rating if the person is a rated military pilot of an Armed Force of the United States; or

(3) Hold either a foreign airline transport pilot or foreign commercial pilot license and an instrument rating, without limitations, issued by a contracting State to the Convention on International Civil Aviation.

(e) Meet the aeronautical experience requirements of this subpart that apply to the aircraft category and class rating sought before applying for the practical test:

(f) Pass a knowledge test on the aeronautical knowledge areas of §61.155(c)
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§ 61.155 Aeronautical knowledge.

(a) General. The knowledge test for an airline transport pilot certificate is based on the aeronautical knowledge areas listed in paragraph (c) of this section that are appropriate to the aircraft category and class rating sought.

(b) Aircraft type rating. A person who is applying for an additional aircraft type rating to be added to an airline transport pilot certificate is not required to pass a knowledge test if that person's airline transport pilot certificate lists the aircraft category and class rating that is appropriate to the type rating sought.

(c) Aeronautical knowledge areas.

(1) Applicable Federal Aviation Regulations of this chapter that relate to airline transport pilot privileges, limitations, and flight operations;

(2) Meteorology, including knowledge of and effects of fronts, frontal characteristics, cloud formations, icing, and upper-air data;

(3) General system of weather and NOTAM collection, dissemination, interpretation, and use;

(4) Interpretation and use of weather charts, maps, forecasts, sequence reports, abbreviations, and symbols;

(5) National Weather Service functions as they pertain to operations in the National Airspace System;

(6) Windshear and microburst awareness, identification, and avoidance;

(7) Principles of air navigation under instrument meteorological conditions in the National Airspace System;

(8) Air traffic control procedures and pilot responsibilities as they relate to en route operations, terminal area and radar operations, and instrument departure and approach procedures;

(9) Aircraft loading, weight and balance, use of charts, graphs, tables, formulas, and computations, and their effect on aircraft performance;

(10) Aerodynamics relating to an aircraft's flight characteristics and performance in normal and abnormal flight regimes;

(11) Human factors;

(12) Aeronautical decision making and judgment; and

(13) Crew resource management to include crew communication and coordination.

§ 61.157 Flight proficiency.

(a) General. (1) The practical test for an airline transport pilot certificate is given for—

(i) An airplane category and single-engine class rating;

(ii) An airplane category and multi-engine class rating;

(iii) A rotorcraft category and helicopter class rating;

(iv) A powered-lift category rating; and

(v) An aircraft type rating for the category and class ratings listed in paragraphs (a)(1)(i) through (a)(1)(iv) of this section.

(2) A person who is applying for an airline transport pilot practical test must meet—

(i) The eligibility requirements of §61.153 of this part; and

(ii) The aeronautical knowledge and aeronautical experience requirements of this subpart that apply to the aircraft category and class rating sought.

(b) Aircraft type rating. Except as provided in paragraph (c) of this section, a person who is applying for an aircraft type rating to be added to an airline transport pilot certificate:

(1) Must receive and log ground and flight training from an authorized instructor on the areas of operation in this section that apply to the aircraft type rating sought;

(2) Must receive a logbook endorsement from an authorized instructor certifying that the applicant completed the training on the areas of operation listed in paragraph (e) of this section that apply to the aircraft type rating sought; and

(3) Must perform the practical test in actual or simulated instrument conditions, unless the aircraft's type certificate makes the aircraft incapable of
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operating under instrument flight rules. If the practical test cannot be accomplished for this reason, the person may obtain a type rating limited to “VFR only.” The “VFR only” limitation may be removed for that aircraft type when the person passes the practical test in actual or simulated instrument conditions.

(c) Exceptions. A person who is applying for an aircraft type rating to be added to an airline transport pilot certificate or an aircraft type rating concurrently with an airline transport pilot certificate, and who is an employee of a certificate holder operating under part 121 or part 135 of this chapter, need not comply with the requirements of paragraph (b) of this section if the applicant presents a training record that shows satisfactory completion of that certificate holder’s approved pilot-in-command training program for the aircraft type rating sought.

(d) Upgrading type ratings. Any type rating(s) on the pilot certificate of an applicant who successfully completes an airline transport pilot practical test shall be included on the airline transport pilot certificate with the privileges and limitations of the airline transport pilot certificate, provided the applicant passes the practical test in the same category and class of aircraft for which the applicant holds the type rating(s). However, if a type rating for that category and class of aircraft on the superseded pilot certificate is limited to VFR, that limitation shall be carried forward to the person’s airline transport pilot certificate level.

(e) Areas of operation. (1) For an airplane category—single-engine class rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Takeoff and departure phase;
   (iv) In-flight maneuvers;
   (v) Instrument procedures;
   (vi) Landings and approaches to landings;
   (vii) Normal and abnormal procedures;
   (viii) Emergency procedures; and
   (ix) Postflight procedures.

(2) For an airplane category—multi-engine class rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Takeoff and departure phase;
   (iv) In-flight maneuvers;
   (v) Instrument procedures;
   (vi) Landings and approaches to landings;
   (vii) Normal and abnormal procedures;
   (viii) Emergency procedures; and
   (ix) Postflight procedures.

(3) For a powered-lift category rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Takeoff and departure phase;
   (iv) In-flight maneuvers;
   (v) Instrument procedures;
   (vi) Landings and approaches to landings;
   (vii) Normal and abnormal procedures;
   (viii) Emergency procedures; and
   (ix) Postflight procedures.

(4) For a rotorcraft category—helicopter class rating:
   (i) Preflight preparation;
   (ii) Preflight procedures;
   (iii) Takeoff and departure phase;
   (iv) In-flight maneuvers;
   (v) Instrument procedures;
   (vi) Landings and approaches to landings;
   (vii) Normal and abnormal procedures;
   (viii) Emergency procedures; and
   (ix) Postflight procedures.

(f) Proficiency and competency checks conducted under part 121 or part 135. (1) Successful completion of a pilot-in-command proficiency check under §121.441 of this chapter or successful completion of both a competency check, under §135.293 of this chapter, and a pilot-in-command instrument proficiency check, under §135.297 of this chapter, satisfies the requirements of this section for the appropriate aircraft rating.

(2) The checks specified in paragraph (f)(1) of this section must be conducted by an authorized designated pilot examiner or FAA aviation safety inspector.

(g) Use of a flight simulator or flight training device for an airplane rating. If a flight simulator or flight training device is used for accomplishing all of the training and the required practical test
for an airplane transport pilot certificate with an airplane category, class, and type rating, if applicable, the applicant, flight simulator, and flight training device are subject to the following requirements:

1. The flight simulator and flight training device must represent that airplane type if the rating involves a type rating in an airplane, or is representative of an airplane if the applicant is only seeking an airplane class rating and does not require a type rating.

2. The flight simulator and flight training device must be used in accordance with an approved course at a training center certificated under part 142 of this chapter.

3. All training and testing (except preflight inspection) must be accomplished by the applicant to receive an airplane class rating and type rating, if applicable, without limitations and—
   - i. The flight simulator must be qualified and approved as Level C or Level D;
   - ii. The applicant must meet the aeronautical experience requirements of §61.159 of this part and at least one of the following—
     - A) Hold a type rating for a turbojet airplane of the same class of airplane for which the type rating is sought, or have been designated by a military service as a pilot in command of an airplane of the same class as the airplane for which the type rating is sought; and
     - B) Hold a type rating for a turbopropeller airplane of the same class as the airplane for which the type rating is sought, or have been appointed by a military service as a pilot in command of an airplane of the same class as the airplane for which the type rating is sought;
   - C) Have at least 2,000 hours of flight time, of which 500 hours must be in turbine-powered airplanes of the same class as the airplane for which the type rating is sought;
   - D) Have at least 500 hours of flight time in the same type of airplane as the airplane for which the type rating is sought; or
   - E) Have at least 1,000 hours of flight time in at least two different airplanes requiring a type rating.

4. Subject to the limitation of paragraph (g)(5) of this section, an applicant who does not meet the requirements of paragraph (g)(3) of this section may complete all training and testing (except for preflight inspection) for an additional rating if—
   - i. The flight simulator is qualified and approved as Level C or Level D; and
   - ii. The applicant meets the aeronautical experience requirements of §61.159 of this part and at least one of the following—
     - A) Holds a type rating in a propeller-driven airplane if a type rating in a turbojet airplane is sought, or holds a type rating in a turbojet airplane if a type rating in a turbopropeller airplane is sought;
     - B) Since the beginning of the 12th calendar month before the month in which the applicant completes the practical test for the additional rating, has logged—
       - 1. At least 100 hours of flight time in airplanes in the same class as the airplane for which the type rating is sought and which requires a type rating; and
       - 2. At least 25 hours of flight time in airplanes of the same type for which the type rating is sought.

5. An applicant meeting only the requirements of paragraph (g)(4)(ii)(A) and (B) of this section will be issued an additional rating, or an airline transport pilot certificate with an added rating, as applicable, with a limitation. The limitation shall state: “This certificate is subject to pilot-in-command limitations for the additional rating.”

6. An applicant who has been issued a certificate with the limitation specified in paragraph (g)(5) of this section—
   - i. May not act as pilot in command of the aircraft for which an additional rating was obtained under the provisions of this section until the limitation is removed from the certificate; and
   - ii. May have the limitation removed by accomplishing 15 hours of supervised operating experience as pilot in command under the supervision of a
qualified and current pilot in command, in the seat normally occupied by the pilot in command, in an airplane of the same type for which the limitation applies.

(7) An applicant who does not meet the requirements of paragraph (g)(3)(ii)(A) through (E) or (g)(4)(ii)(A) and (B) of this section may be issued an airline transport pilot certificate or an additional rating to that pilot certificate after successful completion of one of the following requirements—

(i) An approved course at a part 142 training center that includes all training and testing for that certificate or rating, followed by training and testing on the following tasks, which must be successfully completed on a static airplane or in flight, as appropriate—

(A) Preflight inspection;
(B) Normal takeoff;
(C) Normal ILS approach;
(D) Missed approach; and
(E) Normal landing.

(ii) An approved course at a part 142 training center that complies with paragraphs (g)(8) and (g)(9) of this section and includes all training and testing for a certificate or rating.

(8) An applicant meeting only the requirements of paragraph (g)(7)(ii) of this section will be issued an additional rating or an airline transport pilot certificate with an additional rating, as applicable, with a limitation. The limitation shall state: "This certificate is subject to pilot-in-command limitations for the additional rating."

(9) An applicant issued a pilot certificate with the limitation specified in paragraph (g)(8) of this section—

(i) May not act as pilot in command of the aircraft for which an additional rating was obtained under the provisions of this section until the limitation is removed from the certificate; and

(ii) May have the limitation removed by accomplishing 25 hours of supervised operating experience as pilot in command under the supervision of a qualified and current pilot in command, in the seat normally occupied by the pilot in command, in an airplane of the same type for which the limitation applies.

(h) Use of a flight simulator or flight training device for a helicopter rating. If a flight simulator or flight training device is used for accomplishing all of the training and the required practical test for an airline transport pilot certificate with a helicopter class rating and type rating, if applicable, the applicant, flight simulator, and flight training device are subject to the following requirements:

(1) The flight simulator and flight training device must represent that helicopter type if the rating involves a type rating in a helicopter, or is representative of a helicopter if the applicant is only seeking a helicopter class rating and does not require a type rating.

(2) The flight simulator and flight training device must be used in accordance with an approved course at a training center certificated under part 142 of this chapter.

(3) All training and testing requirements (except preflight inspection) must be accomplished by the applicant to receive a helicopter class rating and type rating, if applicable, without limitations and—

(i) The flight simulator must be qualified and approved as a Level C or Level D; and

(ii) The applicant must meet the aeronautical experience requirements of §61.161 of this part and at least one of the following—

(A) Hold a type rating for a turbine-powered helicopter, or have been designated by a military service as a pilot in command of a turbine-powered helicopter, if a turbine-powered helicopter type rating is sought;

(B) Have at least 1,200 hours of flight time, of which 500 hours must be in turbine-powered helicopters;

(C) Have at least 500 hours of flight time in the same type helicopter as the helicopter for which the type rating is sought; or

(D) Have at least 1,000 hours of flight time in at least two different helicopters requiring a type rating.

(4) Subject to the limitation of paragraph (h)(5) of this section, an applicant who does not meet the requirements of paragraph (h)(3) of this section may complete all training and testing (except for preflight inspection) for an additional rating if—
(i) The flight simulator is qualified and approved as Level C or Level D; and

(ii) The applicant meets the aeronautical experience requirements of §61.161 of this part and, since the beginning of the 12th calendar month before the month in which the applicant completes the practical test for the additional rating, has logged—

(A) At least 100 hours of flight time in helicopters; and

(B) At least 15 hours of flight time in helicopters of the same type of helicopter for which the type rating is sought.

(5) An applicant meeting only the requirements of paragraph (h)(4)(ii) (A) and (B) of this section will be issued an additional rating or an airline transport pilot certificate with a limitation. The limitation shall state: “This certificate is subject to pilot-in-command limitations for the additional rating.”

(6) An applicant who has been issued a certificate with the limitation specified in paragraph (h)(5) of this section—

(i) May not act as pilot in command of the helicopter for which an additional rating was obtained under the provisions of this section until the limitation is removed from the certificate; and

(ii) May have the limitation removed by accomplishing 15 hours of supervised operating experience as pilot in command under the supervision of a qualified and current pilot in command, in the seat normally occupied by the pilot in command, in a helicopter of the same type for which the limitation applies.

(7) An applicant who does not meet the requirements of paragraph (h)(3)(ii) (A) through (D), or (h)(4)(ii) (A) and (B) of this section may be issued an airline transport pilot certificate or an additional rating to that pilot certificate after successful completion of one of the following requirements—

(i) An approved course at a part 142 training center that includes all training and testing for that certificate or rating, followed by training and testing on the following tasks, which must be successfully completed on a static aircraft or in flight, as appropriate—

(A) Preflight inspection;

(B) Normal takeoff from a hover;

(C) Manually flown precision approach; and

(D) Steep approach and landing to an off-airport heliport; or

(ii) An approved course at a training center that includes all training and testing for that certificate or rating and compliance with paragraphs (h)(8) and (h)(9) of this section.

(8) An applicant meeting only the requirements of paragraph (h)(7)(ii) of this section will be issued an additional rating or an airline transport pilot certificate with an additional rating, as applicable, with a limitation. The limitation shall state: “This certificate is subject to pilot-in-command limitations for the additional rating.”

(9) An applicant issued a certificate with the limitation specified in paragraph (h)(8) of this section—

(i) May not act as pilot in command of the aircraft for which an additional rating was obtained under the provisions of this section until the limitation is removed from the certificate; and

(ii) May have the limitation removed by accomplishing 25 hours of supervised operating experience as pilot in command under the supervision of a qualified and current pilot in command, in the seat normally occupied by the pilot in command, in an aircraft of the same type for which the limitation applies.

(i) Use of a flight simulator or flight training device for a powered-lift rating.

If a flight simulator or flight training device is used for accomplishing all of the training and the required practical test for an airline transport pilot certificate with a powered-lift category rating and type rating, if applicable, the applicant, flight simulator, and flight training device are subject to the following requirements:

(1) The flight simulator and flight training device must represent that powered-lift type, if the rating involves a type rating in a powered-lift, or is representative of a powered-lift if the applicant is only seeking a powered-lift category rating and does not require a type rating.

(2) The flight simulator and flight training device must be used in accordance with an approved course at a
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training center certificated under part 142 of this chapter.

(3) All training and testing requirements (except preflight inspection) must be accomplished by the applicant to receive a powered-lift category rating and type rating, if applicable, without limitations; and—

(i) The flight simulator must be qualified and approved as Level C or Level D; and

(ii) The applicant must meet the aeronautical experience requirements of § 61.163 of this part and at least one of the following—

(A) Hold a type rating for a turbine-powered powered-lift, or have been designated by a military service as a pilot in command of a turbine-powered powered-lift, if a turbine-powered powered-lift type rating is sought;

(B) Have at least 1,200 hours of flight time, of which 500 hours must be in turbine-powered powered-lifts;

(C) Have at least 500 hours of flight time in the same type of powered-lift for which the type rating is sought; or

(D) Have at least 1,000 hours of flight time in at least two different powered-lifts requiring a type rating.

(4) Subject to the limitation of paragraph (i)(5) of this section, an applicant who does not meet the requirements of paragraph (i)(3)(ii) of this section may complete all training and testing (except for preflight inspection) for an additional rating if—

(i) The flight simulator is qualified and approved as Level C or Level D; and

(ii) The applicant meets the aeronautical experience requirements of § 61.163 of this part and, since the beginning of the 12th calendar month before the month in which the applicant completes the practical test for the additional rating, has logged—

(A) At least 100 hours of flight time in powered-lifts; and

(B) At least 15 hours of flight time in powered-lifts of the same type of powered-lift for the type rating sought.

(5) An applicant meeting only the requirements of paragraph (i)(4)(ii) (A) and (B) of this section will be issued an additional rating or an airline transport pilot certificate with a limitation.

The limitation shall state: “This certificate is subject to pilot-in-command limitations for the additional rating.”

(6) An applicant who has been issued a certificate with the limitation specified in paragraph (i)(5) of this section—

(i) May not act as pilot in command of the powered-lift for which an additional rating was obtained under the provisions of this section until the limitation is removed from the certificate; and

(ii) May have the limitation removed by accomplishing 15 hours of supervised operating experience as pilot in command under the supervision of a qualified and current pilot in command, in the seat normally occupied by the pilot in command, in a powered-lift of the same type for which the limitation applies.

(7) An applicant who does not meet the requirements of paragraph (i)(3)(ii) (A) through (D) or (i)(4)(ii) (A) and (B) of this section may be issued an airline transport pilot certificate or an additional rating to that pilot certificate after successful completion of one of the following requirements—

(i) An approved course at a part 142 training center that includes all training and testing for that certificate or rating, followed by training and testing on the following tasks, which must be successfully completed on a static aircraft or in flight, as appropriate—

(A) Preflight inspection;

(B) Normal takeoff from a hover;

(C) Manually flown precision approach; and

(D) Steep approach and landing to an off-airport site; or

(ii) An approved course at a training center that includes all training and testing for that certificate or rating and is in compliance with paragraphs (i)(8) and (i)(9) of this section.

(8) An applicant meeting only the requirements of paragraph (i)(7)(ii) of this section will be issued an additional rating or an airline transport pilot certificate with an additional rating, as applicable, with a limitation. The limitation shall state: “This certificate is subject to pilot-in-command limitations for the additional rating.”

(9) An applicant issued a pilot certificate with the limitation specified in paragraph (i)(8) of this section—
§ 61.159 Aeronautical experience: Airplane category rating.

(a) Except as provided in paragraphs (b), (c), and (d) of this section, a person who is applying for an airline transport pilot certificate with an airplane category and class rating must have at least 1,500 hours of total time as a pilot that includes at least:

(1) 500 hours of cross-country flight time.

(2) 100 hours of night flight time.

(3) 75 hours of instrument flight time, in actual or simulated instrument conditions, subject to the following:

(i) Except as provided in paragraph (a)(3)(ii) of this section, an applicant may not receive credit for more than a total of 25 hours of simulated instrument time in a flight simulator or flight training device.

(ii) A maximum of 50 hours of training in a flight simulator or flight training device may be credited toward the instrument flight time requirements of paragraph (a)(3) of this section if the training was accomplished in a course conducted by a training center certificated under part 142 of this chapter.

(iii) Training in a flight simulator or flight training device must be accomplished in a flight simulator or flight training device, representing an airplane.

(4) 250 hours of flight time in an airplane as a pilot in command, or as second in command performing the duties of pilot in command while under the supervision of a pilot in command, or any combination thereof, which includes at least—

(i) 100 hours of cross-country flight time; and

(ii) 25 hours of night flight time.

(5) Not more than 100 hours of the total aeronautical experience requirements of paragraph (a) of this section may be obtained in a flight simulator or flight training device that represents an airplane, provided the aeronautical experience was obtained in an approved course conducted by a training center certificated under part 142 of this chapter.

(b) A person who has performed at least 20 night takeoffs and landings to a full stop may substitute each additional night takeoff and landing to a full stop for 1 hour of night flight time to satisfy the requirements of paragraph (a)(2) of this section; however, not more than 25 hours of night flight time may be credited in this manner.

(c) A commercial pilot may credit the following second-in-command flight time or flight-engineer flight time toward the 1,500 hours of total time as a pilot required by paragraph (a) of this section:

(1) Second-in-command time, provided the time is acquired in an airplane—

(i) Required to have more than one pilot flight crewmember by the airplane's flight manual, type certificate, or the regulations under which the flight is being conducted;

(ii) Engaged in operations under part 121 or part 135 of this chapter for which a second in command is required; or

(iii) That is required by the operating rules of this chapter to have more than one pilot flight crewmember.

(2) Flight-engineer time, provided the time—

(i) Required to have more than one pilot flight crewmember by the airplane's flight manual, type certificate, or the regulations under which the flight is being conducted;

(ii) Engaged in operations under part 121 or part 135 of this chapter for which a second in command is required; or

(iii) That is required by the operating rules of this chapter to have more than one pilot flight crewmember.
§ 61.161 Aeronautical experience: Rotorcraft category and helicopter class rating.

(a) A person who is applying for an airline transport pilot certificate with a rotorcraft category and helicopter class rating, must have at least 1,200 hours of total time as a pilot that includes at least:

1. 500 hours of cross-country flight time;
2. 100 hours of night flight time, of which 15 hours are in helicopters;
3. 200 hours of flight time in helicopters, which includes at least 75 hours as a pilot in command, or as second in command performing the duties of a pilot in command under the supervision of a pilot in command, or any combination thereof; and
4. 75 hours of instrument flight time in actual or simulated instrument meteorological conditions, of which at least 50 hours are obtained in flight with at least 25 hours in helicopters as a pilot in command, or as second in command performing the duties of a pilot in command under the supervision of a pilot in command, or any combination thereof.

(b) Training in a flight simulator or flight training device may be credited toward the instrument flight time requirements of paragraph (a)(4) of this section, subject to the following:

1. Credits second-in-command or flight-engineer time under paragraph (c) of this section toward the 1,500 hours total flight time requirement of paragraph (a) of this section;
2. Does not have at least 1,200 hours of flight time as a pilot, including no more than 50 percent of his or her second-in-command time and none of his or her flight-engineer time; and
3. Otherwise meets the requirements of paragraph (a) of this section.

(c) When the applicant specified in paragraph (d) of this section presents satisfactory evidence of the accumulation of 1,200 hours of flight time as a pilot including no more than 50 percent of his or her second-in-command flight time and none of his or her flight-engineer time, the applicant is entitled to an airline transport pilot certificate without the endorsement prescribed in that paragraph.

[Docket No. 25910, 62 FR 16298, Apr. 4, 1997; Amdt. 61-103, 62 FR 40906, July 30, 1997; Amdt. 61-104, 63 FR 20288, Apr. 23, 1998]
(2) 100 hours of night flight time;
(3) 250 hours in a powered-lift as a pilot in command, or as a second in command performing the duties of a pilot in command under the supervision of a pilot in command, or any combination thereof, which includes at least—
   (i) 100 hours of cross-country flight time; and
   (ii) 25 hours of night flight time.
(4) 75 hours of instrument flight time in actual or simulated instrument conditions, subject to the following:
   (i) Except as provided in paragraph (a)(4)(ii) of this section, an applicant may not receive credit for more than a total of 25 hours of simulated instrument time in a flight simulator or flight training device.
   (ii) A maximum of 50 hours of training in a flight simulator or flight training device may be credited toward the instrument flight time requirements of paragraph (a)(4) of this section if the training was accomplished in a course conducted by a training center certified under part 142 of this chapter.
   (iii) Training in a flight simulator or flight training device must be accomplished in a flight simulator or flight training device that represents a powered-lift.
(b) Not more than 100 hours of the total aeronautical experience requirements of paragraph (a) of this section may be obtained in a flight simulator or flight training device that represents a powered-lift, provided the aeronautical experience was obtained in an approved course conducted by a training center certified under part 142 of this chapter.

§ 61.165 Additional aircraft category and class ratings.

(a) Rotorcraft category and helicopter class rating. A person applying for an airline transport certificate with a rotorcraft category and helicopter class rating who holds an airline transport pilot certificate with another aircraft category rating must:
   (1) Meet the eligibility requirements of §61.153 of this part;
   (2) Pass a knowledge test on the aeronautical knowledge areas of §61.155(c) of this part;
   (3) Comply with the requirements in §61.157(b) of this part, if appropriate;
   (4) Meet the applicable aeronautical experience requirements of §61.161 of this part; and
   (5) Pass the practical test on the areas of operation of §61.157(e)(4) of this part.

(b) Airplane category rating with a single-engine class rating. A person applying for an airline transport certificate with an airplane category and single-engine class rating who holds an airline transport pilot certificate with another aircraft category rating must:
   (1) Meet the eligibility requirements of §61.153 of this part;
   (2) Pass a knowledge test on the aeronautical knowledge areas of §61.155(c) of this part;
   (3) Comply with the requirements in §61.157(b) of this part, if appropriate;
   (4) Meet the applicable aeronautical experience requirements of §61.159 of this part; and
   (5) Pass the practical test on the areas of operation of §61.157(e)(1) of this part.

(c) Airplane category rating with a multiengine class rating. A person applying for an airline transport certificate with an airplane category and multiengine class rating who holds an airline transport certificate with another aircraft category rating must:
   (1) Meet the eligibility requirements of §61.153 of this part;
   (2) Pass a knowledge test on the aeronautical knowledge areas of §61.155(c) of this part;
   (3) Comply with the requirements in §61.157(b) of this part, if appropriate;
   (4) Meet the applicable aeronautical experience requirements of §61.159 of this part; and
   (5) Pass the practical test on the areas of operation of §61.157(e)(2) of this part.

(d) Powered-lift category. A person applying for an airline transport pilot certificate with a powered-lift category rating who holds an airline transport certificate with another aircraft category rating must:
   (1) Meet the eligibility requirements of §61.153 of this part;
§ 61.167 Privileges.

(a) A person who holds an airline transport pilot certificate is entitled to the same privileges as those afforded a person who holds a commercial pilot certificate with an instrument rating.

(b) An airline transport pilot may instruct—

1. Other pilots in aircraft, flight simulators, and flight training devices representing the aircraft referenced in paragraph (b)(1) of this section, when instructing under the provisions of this section and endorsing the logbook or other training record of the person to whom training has been given;

2. In flight simulators, and flight training devices representing the aircraft referenced in paragraph (b)(1) of this section, when instructing under the provisions of this section and endorsing the logbook or other training record of the person to whom training has been given;

3. Only as provided in this section, unless the airline transport pilot also holds a flight instructor certificate, in which case the holder may exercise the instructor privileges of subpart H of part 61 for which he or she is rated; and

4. In an aircraft, only if the aircraft has functioning dual controls, when instructing under the provisions of this section.

(c) Excluding briefings and debriefings, an airline transport pilot may not instruct in aircraft, flight simulators, or flight training devices under this section—

1. For more than 8 hours in any 24-consecutive-hour period; or

2. For more than 36 hours in any 7-consecutive-day period.

(d) An airline transport pilot may not instruct in Category II or Category III operations unless he or she has been trained and successfully tested under Category II or Category III operations, as applicable.

§ 61.169—69.171 [Reserved]

Subpart H—Flight Instructors

§ 61.181 Applicability.

This subpart prescribes the requirements for the issuance of flight instructor certificates and ratings, the conditions under which those certificates and ratings are necessary, and the limitations on those certificates and ratings.

§ 61.183 Eligibility requirements.

To be eligible for a flight instructor certificate or rating a person must:

(a) Be at least 18 years of age;

(b) Be able to read, speak, write, and understand the English language. If the applicant is unable to meet one of these requirements due to medical reasons, then the Administrator may place such operating limitations on that applicant’s flight instructor certificate as are necessary;

(c) Hold either a commercial pilot certificate or airline transport pilot certificate with:

1. An aircraft category and class rating that is appropriate to the flight instructor rating sought; and

2. An instrument rating, or privileges on that person’s pilot certificate
that are appropriate to the flight instructor rating sought, if applying for—

(i) A flight instructor certificate with an airplane category and single-engine class rating;

(ii) A flight instructor certificate with an airplane category and multi-engine class rating;

(iii) A flight instructor certificate with a powered-lift rating; or

(iv) A flight instructor certificate with an instrument rating.

(d) Receive a logbook endorsement from an authorized instructor on the fundamentals of instructing listed in §61.185 of this part appropriate to the required knowledge test;

(e) Pass a knowledge test on the areas listed in §61.185(a)(1) of this part, unless the applicant:

(1) Holds a flight instructor certificate or ground instructor certificate issued under this part;

(2) Holds a current teacher’s certificate issued by a State, county, city, or municipality that authorizes the person to teach at an educational level of the 7th grade or higher; or

(3) Is employed as a teacher at an accredited college or university.

(f) Pass a knowledge test on the aeronautical knowledge areas listed in §61.185(a)(2) and (a)(3) of this part that are appropriate to the flight instructor rating sought;

(g) Receive a logbook endorsement from an authorized instructor on the areas of operation listed in §61.187(b) of this part, appropriate to the flight instructor rating sought;

(h) Pass the required practical test that is appropriate to the flight instructor rating sought in an:

(1) Aircraft that is representative of the category and class of aircraft for the aircraft rating sought; or

(2) Flight simulator or approved flight training device that is representative of the category and class of aircraft for the rating sought, and used in accordance with a course at a training center certificated under part 142 of this chapter.

(i) Accomplish the following for a flight instructor certificate with an airplane or a glider rating:

(1) Receive a logbook endorsement from an authorized instructor indicating that the applicant is competent and possesses instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures after providing the applicant with flight training in those training areas in an airplane or glider, as appropriate, that is certificated for spins; and

(2) Demonstrate instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures. However, upon presentation of the endorsement specified in paragraph (i)(1) of this section an examiner may accept that endorsement as satisfactory evidence of instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures for the practical test, provided that the practical test is not a retest as a result of the applicant failing the previous test for deficiencies in the knowledge or skill of stall awareness, spin entry, spins, or spin recovery instructional procedures. If the retest is a result of deficiencies in the ability of an applicant to demonstrate knowledge or skill of stall awareness, spin entry, spins, or spin recovery instructional procedures, the examiner must test the person on stall awareness, spin entry, spins, or spin recovery instructional procedures in an airplane or glider, as appropriate, that is certificated for spins;

(j) Log at least 15 hours as pilot in command in the category and class of aircraft that is appropriate to the flight instructor rating sought; and

(k) Comply with the appropriate sections of this part that apply to the flight instructor rating sought.

§61.185 Aeronautical knowledge.

(a) A person who is applying for a flight instructor certificate must receive and log ground training from an authorized instructor on:

(1) Except as provided in paragraph (b) of this section, the fundamentals of instructing, including:

(i) The learning process;

(ii) Elements of effective teaching;

(iii) Student evaluation and testing;

(iv) Course development;

(v) Lesson planning; and

(vi) Classroom training techniques.
§ 61.187 Flight proficiency.

(a) General. A person who is applying for a flight instructor certificate must receive and log flight and ground training from an authorized instructor on the areas of operation listed in this section that apply to the flight instructor rating sought. The applicant’s logbook must contain an endorsement from an authorized instructor certifying that the person is proficient to pass a practical test on those areas of operation.

(b) Areas of operation. (1) For an airplane category rating with a single-engine class rating:
   (i) Fundamentals of instructing;
   (ii) Technical subject areas;
   (iii) Preflight preparation;
   (iv) Preflight lesson on a maneuver to be performed in flight;
   (v) Preflight procedures;
   (vi) Airport and seaplane base operations;
   (vii) Takeoffs, landings, and go-arounds;
   (viii) Fundamentals of flight;
   (ix) Performance maneuvers;
   (x) Ground reference maneuvers;
   (xi) Slow flight, stalls, and spins;
   (xii) Basic instrument maneuvers;
   (xiii) Emergency operations; and
   (xiv) Postflight procedures.

(2) For an airplane category rating with a multiengine class rating:
   (i) Fundamentals of instructing;
   (ii) Technical subject areas;
   (iii) Preflight preparation;
   (iv) Preflight lesson on a maneuver to be performed in flight;
   (v) Preflight procedures;
   (vi) Airport and seaplane base operations;
   (vii) Takeoffs, landings, and go-arounds;
   (viii) Fundamentals of flight;
   (ix) Performance maneuvers;
   (x) Ground reference maneuvers;
   (xi) Slow flight and stalls;
   (xii) Basic instrument maneuvers;
   (xiii) Emergency operations;
   (xiv) Multiengine operations; and
   (xv) Postflight procedures.

(3) For a rotorcraft category rating with a helicopter class rating:
   (i) Fundamentals of instructing;
   (ii) Technical subject areas;
   (iii) Preflight preparation;
   (iv) Preflight lesson on a maneuver to be performed in flight;
   (v) Preflight procedures;
   (vi) Airport and heliport operations;
   (vii) Hovering maneuvers;
   (viii) Takeoffs, landings, and go-arounds;
   (ix) Fundamentals of flight;
   (x) Performance maneuvers;
   (xi) Emergency operations;
   (xii) Special operations; and
   (xiii) Postflight procedures.

(4) For a rotorcraft category rating with a gyroplane class rating:
   (i) Fundamentals of instructing;
   (ii) Technical subject areas;
   (iii) Preflight preparation;
   (iv) Preflight lesson on a maneuver to be performed in flight;
   (v) Preflight procedures;
   (vi) Airport operations;
   (vii) Takeoffs, landings, and go-arounds;
   (viii) Fundamentals of flight;
   (ix) Performance maneuvers;
   (x) Flight at low airspeeds;
   (xi) Ground reference maneuvers;
   (xii) Emergency operations; and
   (xiii) Postflight procedures.

(5) For a powered-lift category rating:
   (i) Fundamentals of instructing;
   (ii) Technical subject areas;
   (iii) Preflight preparation;
§ 61.193 Flight instructor privileges.

A person who holds a flight instructor certificate is authorized within the limitations of that person's flight instructor certificate and ratings to give training and endorsements that are required for, and relate to:

(a) A student pilot certificate;
(b) A pilot certificate;
(c) A flight instructor certificate;
(d) A ground instructor certificate;
(e) An aircraft rating;
(f) An instrument rating;

with an approved course at a training center certificated under part 142 of this chapter.


§ 61.189 Flight instructor records.

(a) A flight instructor must sign the logbook of each person to whom that instructor has given flight training or ground training.

(b) A flight instructor must maintain a record in a logbook or a separate document that contains the following:

1. The name of each person whose logbook or student pilot certificate that instructor has endorsed for solo flight privileges, and the date of the endorsement; and
2. The name of each person that instructor has endorsed for a knowledge test or practical test, and the record shall also indicate the kind of test, the date, and the results.

(c) Each flight instructor must retain the records required by this section for at least 3 years.


§ 61.191 Additional flight instructor ratings.

(a) A person who applies for an additional flight instructor rating on a flight instructor certificate must meet the eligibility requirements listed in §61.183 of this part that apply to the flight instructor rating sought.

(b) A person who applies for an additional rating on a flight instructor certificate is not required to pass the knowledge test on the areas listed in §61.185(a)(1) of this part.

§ 61.195 Flight instructor limitations and qualifications.

A person who holds a flight instructor certificate is subject to the following limitations:

(a) Hours of training. In any 24-consecutive-hour period, a flight instructor may not conduct more than 8 hours of flight training.

(b) Aircraft ratings. A flight instructor may not conduct flight training in any aircraft for which the flight instructor does not hold:

(1) A pilot certificate and flight instructor certificate with the applicable category and class rating; and

(2) If appropriate, a type rating.

(c) Instrument Rating. A flight instructor who provides instrument flight training for the issuance of an instrument rating or a type rating not limited to VFR must hold an instrument rating on his or her flight instructor certificate and pilot certificate that is appropriate to the category and class of aircraft in which instrument training is being provided.

(d) Limitations on endorsements. A flight instructor may not endorse a:

(1) Student pilot’s certificate and logbook for solo flight privileges, unless that flight instructor has—

(i) Given that student the flight training required for solo flight privileges required by this part; and

(ii) Determined that the student is prepared to conduct the flight safely under known circumstances, subject to any limitations listed in the student’s logbook that the instructor considers necessary for the safety of the flight.

(2) Student pilot’s certificate and logbook for a solo cross-country flight, unless that flight instructor has determined the student’s flight preparation, planning, equipment, and proposed procedures are adequate for the proposed flight under the existing conditions and within any limitations listed in the logbook that the instructor considers necessary for the safety of the flight;

(3) Student pilot’s certificate and logbook for solo flight in a Class B airspace area or at an airport within Class B airspace unless that flight instructor has—

(i) Given that student ground and flight training in that Class B airspace or at that airport; and

(ii) Determined that the student is proficient to operate the aircraft safely.

(4) Logbook of a recreational pilot, unless that flight instructor has—

(i) Given that pilot the ground and flight training required by this part; and

(ii) Determined that the recreational pilot is proficient to operate the aircraft safely.

(5) Logbook of a pilot for a flight review, unless that instructor has conducted a review of that pilot in accordance with the requirements of §61.56(a) of this part; or

(6) Logbook of a pilot for an instrument proficiency check, unless that instructor has tested that pilot in accordance with the requirements of §61.57(d) of this part.

(e) Training in an aircraft that requires a type rating. A flight instructor may not give flight training in an aircraft that requires the pilot in command to hold a type rating unless the flight instructor holds a type rating for that aircraft on his or her pilot certificate.

(f) Training received in a multiengine airplane, a helicopter, or a powered-lift. A flight instructor may not give training required for the issuance of a certificate or rating in a multiengine airplane, a helicopter, or a powered-lift unless that flight instructor has at least 5 flight hours of pilot-in-command time in the specific make and model of multiengine airplane, helicopter, or powered-lift, as appropriate.

(g) Position in aircraft and required pilot stations for providing flight training.

(1) A flight instructor must perform all training from in an aircraft that complies with the requirements of §91.109 of this chapter.

(2) A flight instructor who provides flight training for a pilot certificate or rating issued under this part must provide that flight training in an aircraft...
§ 61.197 Renewal of flight instructor certificates.

(a) A person who holds a flight instructor certificate that has not expired may renew that certificate by—

(1) Passing a practical test for—

(i) One of the ratings listed on the current flight instructor certificate; or

(ii) An additional flight instructor rating; or

(2) Presenting to an authorized FAA Flight Standards Inspector—

(i) A record of training students showing that, during the preceding 24 calendar months, the flight instructor has endorsed at least five students for a practical test for a certificate or rating and at least 80 percent of those students passed that test on the first attempt;

(ii) Holds a current ground or flight instructor certificate with the appropriate rating, has held that certificate for at least 24 months, and has given at least 40 hours of ground training; or

(iii) Hold the appropriate flight instructor certificate and rating;

(iv) For training in preparation for an airplane, rotorcraft, or powered-lift rating, have given at least 200 hours of flight training as a flight instructor; and

(v) For training in preparation for a glider rating, have given at least 80 hours of flight training as a flight instructor.

(3) A flight instructor who serves as a flight instructor in an FAA-approved course for the issuance of a flight instructor rating must hold a current flight instructor certificate with the appropriate rating and pass the required initial and recurrent flight instructor proficiency tests, in accordance with the requirements of the part under which the FAA-approved course is conducted, and must—

(i) Meet the requirements of paragraph (h)(2) of this section; or

(ii) Have trained and endorsed at least five applicants for a practical test for a pilot certificate, flight instructor certificate, ground instructor certificate, or an additional rating, and at least 80 percent of those applicants passed that test on their first attempt; and

(A) Given at least 400 hours of flight training as a flight instructor for training in an airplane, a rotorcraft, or for a powered-lift rating; or

(B) Given at least 100 hours of flight training as a flight instructor, for training in a glider rating.

(i) Prohibition against self-endorsements. A flight instructor shall not make any self-endorsement for a certificate, rating, flight review, authorization, operating privilege, practical test, or knowledge test that is required by this part.

(j) Additional qualifications required to give training in Category II or Category III operations. A flight instructor may not give training in Category II or Category III operations unless the flight instructor has been trained and tested in Category II or Category III operations, pursuant to §61.67 or §61.68 of this part, as applicable.

§ 61.199 Expired flight instructor certificates and ratings.

(a) Flight instructor certificates. The holder of an expired flight instructor certificate may exchange that certificate for a new certificate with the same ratings by passing a practical test as prescribed in §61.183(h) of this part for one of the ratings listed on the expired flight instructor certificate.

(b) Flight instructor ratings. (1) A flight instructor rating on a limited flight instructor rating on a pilot certificate is no longer valid and may not be exchanged for a similar rating or a flight instructor certificate.

(2) The holder of a flight instructor rating on a limited flight instructor rating on a pilot certificate may be issued a flight instructor certificate with the current ratings, but only if the person passes the required knowledge and practical test prescribed in this subpart for the issuance of the current flight instructor certificate and rating.

§ 61.201 [Reserved]
§ 61.215 Ground instructor privileges.

(a) A person who holds a basic ground instructor rating is authorized to provide:

(1) Ground training in the aeronautical knowledge areas required for the issuance of a recreational pilot certificate, private pilot certificate, or associated ratings under this part;

(2) Ground training required for a recreational pilot and private pilot flight review; and

(3) A recommendation for a knowledge test required for the issuance of a recreational pilot certificate or private pilot certificate under this part.

(b) A person who holds an advanced ground instructor rating is authorized to provide:

(1) Ground training in the aeronautical knowledge areas required for the issuance of any certificate or rating under this part;

(2) Ground training required for any flight review; and

(3) A recommendation for a knowledge test required for the issuance of any certificate under this part.

(c) A person who holds an instrument ground instructor rating is authorized to provide:

(1) Ground training in the aeronautical knowledge areas required for the issuance of an instrument rating under this part;

(2) Ground training required for an instrument proficiency check; and

(3) A recommendation for a knowledge test required for the issuance of an instrument rating under this part.

(d) A person who holds a ground instructor certificate is authorized, within the limitations of the ratings on the ground instructor certificate, to endorse the logbook or other training record of a person to whom the holder has provided the training or recommendation specified in paragraphs (a) through (c) of this section.

§ 61.217 Recent experience requirements.

The holder of a ground instructor certificate may not perform the duties of a ground instructor unless, within the preceding 12 months:

(a) The person has served for at least 3 months as a ground instructor; or

(b) The person has received an endorsement from an authorized ground or flight instructor certifying that the person has demonstrated satisfactory proficiency in the subject areas prescribed in § 61.213(a)(3) and (a)(4), as applicable.

63.23 Special purpose flight engineer and flight navigator certificates: Operation of U.S.-registered civil airplanes leased by a person not a U.S. citizen.

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APPENDIX A TO PART 63—TEST REQUIREMENTS FOR FLIGHT NAVIGATOR CERTIFICATE

APPENDIX B TO PART 63—FLIGHT NAVIGATOR TRAINING COURSE REQUIREMENTS

APPENDIX C TO PART 63—FLIGHT ENGINEER TRAINING COURSE REQUIREMENTS


SPECIAL FEDERAL AVIATION REGULATIONS

SFAR No. 58

EDITORIAL NOTE: For the text of SFAR No. 58, see part 121 of this chapter.

SFAR No. 63—RELIEF FOR PARTICIPANTS IN OPERATION DESERT SHIELD/STORM

Sections

1. Applicability.
2. Required documents.
3. Expiration date.

1. Applicability. Contrary provisions of part 63 notwithstanding, under the procedures prescribed herein, Flight Standards District Offices (FSDO) are authorized to accept an expired written test report to show eligibility under §§ 63.33 and 63.57 to take a flight/practical test, provided—

a. It is submitted by a civilian or military person who served in support of Operation Desert Shield/Storm during the time period from August 2, 1990 to December 31, 1992;

b. The person completes the required flight/practical test within 6 calendar months following the date of reassignment from Operation Desert Shield/Storm or by December 31, 1992, whichever date is sooner.

c. The person completes the required flight/practical test within 6 calendar months following the date of reassignment from Operation Desert Shield/Storm or by December 31, 1992, whichever date is sooner.

2. Required documents. The FSDO and applicant shall include one of the following documents with the airman application, and the documents must show the dates of assignment to and reassignment from support of Operation Desert Shield/Storm:

a. Official government documents showing the person was a civilian on official duty for the United States Government in support of Operation Desert Shield/Storm during the time period from August 2, 1990 to December 31, 1992;

b. Military orders showing the person was a member of the uniformed services assigned to duty in support of Operation Desert Shield/Storm during the time period from August 2, 1990 to December 31, 1992;

c. Military orders showing the person was an active member of the National Guard or Reserve called to active duty in support of Operation Desert Shield/Storm during the time period from August 2, 1990 to December 31, 1992, or

d. A letter from the unit commander providing inclusive dates during which the person served in support of Operation Desert Shield/Storm during the time period from August 2, 1990 to December 31, 1992.

3. Expiration date. This SFAR expires December 31, 1992, unless sooner superseded or rescinded.

[SFAR 63, 56 FR 27163, June 12, 1991]
Federal Aviation Administration, DOT

§ 63.12

[Doc. No. 22052, 47 FR 35693, Aug. 18, 1982]

§ 63.3 Certificates and ratings required.

(a) No person may act as a flight engineer of a civil aircraft of U.S. registry unless he has in his personal possession a current flight engineer certificate with appropriate ratings issued to him under this part and a second-class (or higher) medical certificate issued to him under part 67 of this chapter within the preceding 12 months. However, when the aircraft is operated within a foreign country, a current flight engineer certificate issued by the country in which the aircraft is operated, with evidence of current medical qualification for that certificate, may be used. Also, in the case of a flight engineer certificate issued under §63.42, evidence of current medical qualification accepted for the issue of that certificate is used in place of a medical certificate.

(b) No person may act as a flight navigator of a civil aircraft of U.S. registry unless he has in his personal possession a current flight navigator certificate issued to him under part 67 of this chapter within the preceding 12 months. However, when the aircraft is operated within a foreign country, a current flight navigator certificate issued by the country in which the aircraft is operated, with evidence of current medical qualification for that certificate, may be used. Also, in the case of a flight navigator certificate issued under §63.42, evidence of current medical qualification accepted for the issue of that certificate is used in place of a medical certificate.

(c) Each person who holds a flight engineer or flight navigator certificate, or medical certificate, shall present either or both for inspection upon the request of the Administrator or an authorized representative of the National Transportation Safety Board, or of any Federal, State, or local law enforcement officer.

(Secs. 3, 6, 9, 80 Stat. 931, 49 U.S.C. 1652, 1655, 1657)


§ 63.11 Application and issue.

(a) An application for a certificate and appropriate class rating, or for an additional rating, under this part must be made on a form and in a manner prescribed by the Administrator. Each person who is neither a United States citizen nor a resident alien and applies for a written or practical test to be administered outside the United States for any certificate or rating issued under this part must show evidence that the fee prescribed in appendix A of part 187 of this chapter has been paid.

(b) An applicant who meets the requirements of this part is entitled to an appropriate certificate and appropriate class ratings.

(c) Unless authorized by the Administrator, a person whose flight engineer certificate is suspended may not apply for any rating to be added to that certificate during the period of suspension.

(d) Unless the order of revocation provides otherwise, a person whose flight engineer or flight navigator certificate is revoked may not apply for the same kind of certificate for 1 year after the date of revocation.

(Secs. 313, 601, 602, Federal Aviation Act of 1958, as amended (49 U.S.C. 1354, 1421, and 1422); sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)); Title V, Independent Offices Appropriations Act of 1952 (31 U.S.C. 483(a)); sec. 28, International Air Transportation Competition Act of 1979 (49 U.S.C. 1159(b)))


§ 63.12 Offenses involving alcohol or drugs.

(a) A conviction for the violation of any Federal or state statute relating to
§ 63.12a Refusal to submit to an alcohol test or to furnish test results.

A refusal to submit to a test to indicate the percentage by weight of alcohol in the blood, when requested by a law enforcement officer in accordance with §91.11(c) of this chapter, or a refusal to furnish or authorize the release of the test results when requested by the Administrator in accordance with §91.17(c) or (d) of this chapter, is grounds for—

(a) Denial of an application for any certificate or rating issued under this part for a period of up to 1 year after the date of that refusal; or

(b) Suspension or revocation of any certificate or rating issued under this part.

§ 63.12b Refusal to submit to a drug or alcohol test.

(a) This section applies to an employee who performs a function listed in appendix I or appendix J to part 121 of this chapter directly or by contract for a part 121 certificate holder, a part 135 certificate holder, or an operator as defined in §135.1(c) of this chapter.

(b) Refusal by the holder of a certificate issued under this part to take a drug test required under the provisions of appendix I to part 121 or an alcohol test required under the provisions of appendix J to part 121 is grounds for—

(1) Denial of an application for any certificate or rating issued under this part for a period of up to 1 year after the date of such refusal; and

(2) Suspension or revocation of any certificate or rating issued under this part.


§ 63.13 Temporary certificate.

A certificate effective for a period of not more than 120 days may be issued to a qualified applicant, pending review of his application and supplementary documents and the issue of the certificate for which he applied.


§ 63.15 Duration of certificates.

(a) Except as provided in §63.23 and paragraph (b) of this section, a certificate or rating issued under this part is effective until it is surrendered, suspended, or revoked.

(b) A flight engineer certificate (with any amendment thereto) issued under §63.42 expires at the end of the 24th month after the month in which the certificate was issued or renewed. However, the holder may exercise the privileges of that certificate only while the foreign flight engineer license on which that certificate is based is effective.

(c) Any certificate issued under this part ceases to be effective if it is surrendered, suspended, or revoked. The holder of any certificate issued under this part that is suspended or revoked shall, upon the Administrator's request, return it to the Administrator.


§ 63.15a [Reserved]

§ 63.16 Change of name; replacement of lost or destroyed certificate.

(a) An application for a change of name on a certificate issued under this part must be accompanied by the applicant's current certificate and the marriage license, court order, or other document verifying the change. The documents are returned to the applicant after inspection.

(b) An application for a replacement of a lost or destroyed certificate is made by letter to the Department of Transportation, Federal Aviation Administration, Airman Certification Branch, Post Office Box 25082, Oklahoma City, OK 73125. The letter must—

(1) Contain the name in which the certificate was issued, the permanent mailing address (including zip code), social security number (if any), and date and place of birth of the certificate holder, and any available information regarding the grade, number, and date of issue of the certificate, and the ratings on it; and

(2) Be accompanied by a check or money order for $2, payable to the Federal Aviation Administration.

(c) An application for a replacement of a lost or destroyed medical certificate is made by letter to the Department of Transportation, Federal Aviation Administration, Civil Aeromedical Institute, Aeromedical Certification Branch, Post Office Box 25082, Oklahoma City, OK 73125, accompanied by a check or money order for $2.00.

(d) A person whose certificate issued under this part or medical certificate, or both, has been lost may obtain a telegram from the Federal Aviation Administration confirming that it was issued. The telegram may be carried as a certificate for a period not to exceed 60 days pending his receiving a duplicate under paragraph (b) or (c) of this section, as appropriate. However, a request for both at the same time should be sent to the office prescribed in paragraph (b) of this section.


§ 63.17 Tests: General procedure.

(a) Tests prescribed by or under this part are given at times and places, and by persons, designated by the Administrator.

(b) The minimum passing grade for each test is 70 percent.

§ 63.18 Written tests: Cheating or other unauthorized conduct.

(a) Except as authorized by the Administrator, no person may—

(1) Copy, or intentionally remove, a written test under this part;

(2) Give to another, or receive from another, any part or copy of that test;

(3) Give help on that test to, or receive help on that test from, any person during the period that test is being given.

(4) Take any part of that test in behalf of another person;

(5) Use any material or aid during the period that test is being given; or

(6) Intentionally cause, assist, or participate in any act prohibited by this paragraph.

(b) No person who commits an act prohibited by paragraph (a) of this section is eligible for any airman or ground instructor certificate or rating under this chapter for a period of 1 year after the date of that act. In addition, the commission of that act is a basis for suspending or revoking any airman or ground instructor certificate or rating held by that person.

[Doc. No. 4086, 30 FR 2196, Feb. 18, 1965]

§ 63.19 Operations during physical deficiency.

No person may serve as a flight engineer or flight navigator during a period of known physical deficiency, or increase in physical deficiency, that would make him unable to meet the physical requirements for his current medical certificate.
§ 63.20 Applications, certificates, logbooks, reports, and records; falsification, reproduction, or alteration.

(a) No person may make or cause to be made—

(1) Any fraudulent or intentionally false statement on any application for a certificate or rating under this part;

(2) Any fraudulent or intentionally false entry in any logbook, record, or report that is required to be kept, made, or used, to show compliance with any requirement for any certificate or rating under this part;

(3) Any reproduction, for fraudulent purpose, of any certificate or rating under this part; or

(4) Any alteration of any certificate or rating under this part.

(b) The commission by any person of an act prohibited under paragraph (a) of this section is a basis for suspending or revoking any airman or ground instructor certificate or rating held by that person.

[Doc. No. 4086, 30 FR 2196, Feb. 18, 1965]

§ 63.21 Change of address.

Within 30 days after any change in his permanent mailing address, the holder of a certificate issued under this part shall notify the Department of Transportation, Federal Aviation Administration, Airman Certification Branch, Post Office Box 25082, Oklahoma City, OK 73125, in writing, of his new address.

[Doc. No. 10536, 35 FR 14075, Sept. 4, 1970]

§ 63.23 Special purpose flight engineer and flight navigator certificates: Operation of U.S.-registered civil airplanes leased by a person not a U.S. citizen.

(a) General. The holder of a current foreign flight engineer or flight navigator certificate, license, or authorization issued by a foreign contracting State to the Convention on International Civil Aviation, who meets the requirements of this section, may hold a special purpose flight engineer or flight navigator certificate, as appropriate, authorizing the holder to perform flight engineer or flight navigator duties on a civil airplane of U.S. registry, leased to a person not a citizen of the United States, carrying persons or property for compensation or hire. Special purpose flight engineer and flight navigator certificates are issued under this section only for airplane types that can have a maximum passenger seating configuration, excluding any flight crewmember seat, of more than 30 seats or a maximum payload capacity (as defined in §135.2(e) of this chapter) of more than 7,500 pounds.

(b) Eligibility. To be eligible for the issuance, or renewal, of a certificate under this section, an applicant must present the following to the Administrator:

(1) A current foreign flight engineer or flight navigator certificate, license, or authorization issued by the aeronautical authority of a foreign contracting State to the Convention on International Civil Aviation or a facsimile acceptable to the Administrator. The certificate or license must authorize the applicant to perform the flight engineer or flight navigator duties to be authorized by a certificate issued under this section on the same airplane type as the leased airplane.

(2) A current certification by the lessee of the airplane—

(i) Stating that the applicant is employed by the lessee;

(ii) Specifying the airplane type on which the applicant will perform flight engineer or flight navigator duties; and

(iii) Stating that the applicant has received ground and flight instruction which qualifies the applicant to perform the duties to be assigned on the airplane.

(3) Documentation showing that the applicant currently meets the medical standards for the foreign flight engineer or flight navigator certificate, license, or authorization required by paragraph (b)(1) of this section, except that a U.S. medical certificate issued under part 67 of this chapter is not evidence that the applicant meets those standards unless the State which issued the applicant's foreign flight engineer or flight navigator certificate, license, or authorization accepts a U.S. medical certificate as evidence of medical fitness for a flight engineer or flight navigator certificate, license, or authorization.

Federal Aviation Administration, DOT

§ 63.31 Eligibility requirements; general.

To be eligible for a flight engineer certificate, a person must—

(a) Be at least 21 years of age;

(b) Be able to read, speak, and understand the English language, or have an appropriate limitation placed on his flight engineer certificate;

(c) Hold at least a second-class medical certificate issued under part 67 of this chapter within the 12 months before the date he applies, or other evidence of medical qualification accepted for the issue of a flight engineer certificate under §63.42; and
§ 63.33 Aircraft ratings.

(a) The aircraft class ratings to be placed on flight engineer certificates are—

(1) Reciprocating engine powered;
(2) Turbopropeller powered; and
(3) Turbojet powered.

(b) To be eligible for an additional aircraft class rating after his flight engineer certificate with a class rating is issued to him, an applicant must pass the written test that is appropriate to the class of airplane for which an additional rating is sought, and—

(1) Pass the flight test for that class of aircraft; or
(2) Satisfactorily complete an approved flight engineer training program that is appropriate to the additional class rating sought.

§ 63.35 Knowledge requirements.

(a) An applicant for a flight engineer certificate must pass a written test on the following:

(1) The regulations of this chapter that apply to the duties of a flight engineer.
(2) The theory of flight and aerodynamics.
(3) Basic meteorology with respect to engine operations.
(4) Center of gravity computations.

(b) An applicant for the original or additional issue of a flight engineer class rating must pass a written test for that airplane class on the following:

(1) Preflight.
(2) Airplane equipment.
(3) Airplane systems.
(4) Airplane loading.
(5) Airplane procedures and engine operations with respect to limitations.
(6) Normal operating procedures.
(7) Emergency procedures.
(8) Mathematical computation of engine operations and fuel consumption.

(c) Before taking the written tests prescribed in paragraphs (a) and (b) of this section, an applicant for a flight engineer certificate must present satisfactory evidence of having completed one of the experience requirements of §63.37. However, he may take the written tests before acquiring the flight training required by §63.37.

(d) An applicant for a flight engineer certificate or rating must have passed the written tests required by paragraphs (a) and (b) of this section since the beginning of the 24th calendar month before the month in which the flight is taken. However, this limitation does not apply to an applicant for a flight engineer certificate or rating if—

(1) The applicant—
   (i) Within the period ending 24 calendar months after the month in which the applicant passed the written test, is employed as a flight crewmember or mechanic by a U.S. air carrier or commercial operator operating either under part 121 or as a commuter air carrier under part 135 (as defined in part 298 of this title) and is employed by such a certificate holder at the time of the flight test;
   (ii) If employed as a flight crewmember, has completed initial training, and, if appropriate, transition or upgrade training; and
   (iii) Meets the recurrent training requirements of the applicable part or, for mechanics, meets the recency of experience requirements of part 65;

(2) Within the period ending 24 calendar months after the month in which the applicant passed the written test, the applicant participated in a flight engineer or maintenance training program of a U.S. scheduled military air transportation service and is currently participating in that program.

(e) An air carrier or commercial operator with an approved training program under part 121 of this chapter may, when authorized by the Administrator, provide as part of that program a written test that it may administer
§ 63.37 Aeronautical experience requirements.

(a) Except as otherwise specified therein, the flight time used to satisfy the aeronautical experience requirements of paragraph (b) of this section must have been obtained on an airplane—

(1) On which a flight engineer is required by this chapter; or

(2) That has at least three engines that are rated at least 800 horsepower each or the equivalent in turbine-powered engines.

(b) An applicant for a flight engineer certificate with a class rating must present, for the class rating sought, satisfactory evidence of one of the following:

(1) At least 3 years of diversified practical experience in aircraft and aircraft engine maintenance (of which at least 1 year was in maintaining multiengine aircraft with engines rated at least 800 horsepower each, or the equivalent in turbine engine powered aircraft), and at least 5 hours of flight training in the duties of a flight engineer.

(2) Graduation from at least a 2-year specialized aeronautical training course in maintaining aircraft and aircraft engines (of which at least 6 calendar months were in maintaining multiengine aircraft with engines rated at least 800 horsepower each or the equivalent in turbine engine powered aircraft), and at least 5 hours of flight training in the duties of a flight engineer.

(3) A degree in aeronautical, electrical, or mechanical engineering from a recognized college, university, or engineering school; at least 6 calendar months of practical experience in maintaining multiengine aircraft with engines rated at least 800 horsepower each, or the equivalent in turbine engine powered aircraft; and at least 5 hours of flight training in the duties of a flight engineer.

(4) At least a commercial pilot certificate with an instrument rating and at least 5 hours of flight training in the duties of a flight engineer.

(5) At least 200 hours of flight time in a transport category airplane (or in a military airplane with at least two engines and at least equivalent weight and horsepower) as pilot in command or second in command performing the functions of a pilot in command under the supervision of a pilot in command.

(6) At least 100 hours of flight time as a flight engineer.

(7) Within the 90-day period before he applies, successful completion of an approved flight engineer ground and flight course of instruction as provided in appendix C of this part.

§ 63.39 Skill requirements.

(a) An applicant for a flight engineer certificate with a class rating must pass a practical test on the duties of a flight engineer in the class of airplane for which a rating is sought. The test may only be given on an airplane specified in §63.37(a).

(b) The applicant must—

(1) Show that he can satisfactorily perform preflight inspection, servicing, starting, pretakeoff, and postlanding procedures;

(2) In flight, show that he can satisfactorily perform the normal duties and procedures relating to the airplane, airplane engines, propellers (if appropriate), systems, and appliances; and

(3) In flight, in an airplane simulator, or in an approved flight engineer training device, show that he can satisfactorily perform emergency duties and procedures and recognize and take appropriate action for malfunctions of the airplane, engines, propellers (if appropriate), systems and appliances.
§ 63.41 Retesting after failure.

An applicant for a flight engineer certificate who fails a written test or practical test for that certificate may apply for retesting—

(a) After 30 days after the date he failed that test; or

(b) After he has received additional practice or instruction (flight, synthetic trainer, or ground training, or any combination thereof) that is necessary, in the opinion of the Administrator or the applicant's instructor (if the Administrator has authorized him to determine the additional instruction necessary) to prepare the applicant for retesting.

§ 63.42 Flight engineer certificate issued on basis of a foreign flight engineer license.

(a) Certificates issued. The holder of a current foreign flight engineer license issued by a contracting State to the Convention on International Civil Aviation, who meets the requirements of this section, may have a flight engineer certificate issued to him for the operation of civil aircraft of U.S. registry. Each flight engineer certificate issued under this section specifies the number and State of issuance of the foreign flight engineer license on which it is based. If the holder of the certificate cannot read, speak, or understand the English language, the Administrator may place any limitation on the certificate that he considers necessary for safety.

(b) Medical standards and certification. An applicant must submit evidence that he currently meets the medical standards for the foreign flight engineer license on which the application for a certificate under this section is based. A current medical certificate issued under part 67 of this chapter will be excepted as evidence that the applicant meets those standards. However, a medical certificate issued under part 67 of this chapter is not evidence that the applicant meets those standards outside the United States unless the State that issued the applicant's foreign flight engineer license also accepts that medical certificate as evidence of the applicant's physical fitness for his foreign flight engineer license.

(c) Ratings issued. Aircraft class ratings listed on the applicant's foreign flight engineer license, in addition to any issued to him after testing under the provisions of this part, are placed on the applicant's flight engineer certificate. An applicant without an aircraft class rating on his foreign flight engineer license may be issued a class rating if he shows that he currently meets the requirements for exercising the privileges of his foreign flight engineer license on that class of aircraft.

(d) Privileges and limitations. The holder of a flight engineer certificate issued under this section may act as a flight engineer of a civil aircraft of U.S. registry subject to the limitations of this part and any additional limitations placed on his certificate by the Administrator. He is subject to these limitations while he is acting as a flight engineer of the aircraft within or outside the United States. However, he may not act as flight engineer or in any other capacity as a required flight crewmember, of a civil aircraft of U.S. registry that is carrying persons or property for compensation or hire.

(e) Renewal of certificate and ratings. The holder of a certificate issued under this section may have that certificate and the ratings placed thereon renewed if, at the time of application for renewal, the foreign flight engineer license on which that certificate is based is in effect. Application for the renewal of the certificate and ratings thereon must be made before the expiration of the certificate.

§ 63.43 Flight engineer courses.

An applicant for approval of a flight engineer course must submit a letter to the Administrator requesting approval, and must also submit three copies of each course outline, a description of the facilities and equipment, and a list of the instructors and their qualifications. An air carrier or commercial operator with an approved flight engineer training course under part 121 of this chapter may apply for approval of a training course under this part by letter without submitting...
Federal Aviation Administration, DOT

the additional information required by this paragraph. Minimum requirements for obtaining approval of a flight engineer course are set forth in appendix C of this part.

Subpart C—Flight Navigators

AUTHORITY: Secs. 313(a), 314, 601, and 607; 49 U.S.C. 1354(a), 1355, 1421, and 1427.

SOURCE: Docket No. 1179, 27 FR 7970, Aug. 10, 1962, unless otherwise noted.

§ 63.51 Eligibility requirements; general.

To be eligible for a flight navigator certificate, a person must—
(a) Be at least 21 years of age;
(b) Be able to read, write, speak, and understand the English language;
(c) Hold at least a second-class medical certificate issued under part 67 of this chapter within the 12 months before the date he applies; and
(d) Comply with §§ 63.53, 63.55, and 63.57.

§ 63.53 Knowledge requirements.

(a) An applicant for a flight navigator certificate must pass a written test on—
(1) The regulations of this chapter that apply to the duties of a flight navigator;
(2) The fundamentals of flight navigation, including flight planning and cruise control;
(3) Practical meteorology, including analysis of weather maps, weather reports, and weather forecasts; and weather sequence abbreviations, symbols, and nomenclature;
(4) The types of air navigation facilities and procedures in general use;
(5) Calibrating and using air navigation instruments;
(6) Navigation by dead reckoning;
(7) Navigation by celestial means;
(8) Navigation by radio aids;
(9) Pilotage and map reading; and
(10) Interpretation of navigation aid identification signals.

(b) A report of the test is mailed to the applicant. A passing grade is evidence, for a period of 24 months after the test, that the applicant has complied with this section.


§ 63.55 Experience requirements.

(a) An applicant for a flight navigator certificate must be a graduate of a flight navigator course approved by the Administrator or present satisfactory documentary evidence of—
(1) Satisfactory determination of his position in flight at least 25 times by night by celestial observations and at least 25 times by day by celestial observations in conjunction with other aids; and
(2) At least 200 hours of satisfactory flight navigation including celestial and radio navigation and dead reckoning.

A pilot who has logged 500 hours of cross-country flight time, of which at least 100 hours were at night, may be credited with not more than 100 hours for the purposes of paragraph (a)(2) of this section.

(b) Flight time used exclusively for practicing long-range navigation methods, with emphasis on celestial navigation and dead reckoning, is considered to be satisfactory navigation experience for the purposes of paragraph (a) of this section. It must be substantiated by a logbook, by records of an armed force or a certificated air carrier, or by a letter signed by a certificated flight navigator and attached to the application.

§ 63.57 Skill requirements.

(a) An applicant for a flight navigator certificate must pass a practical test in navigating aircraft by—
(1) Dead reckoning;
(2) Celestial means; and
(3) Radio aids to navigation.

(b) An applicant must pass the written test prescribed by § 63.53 before taking the test under this section. However, if a delay in taking the test under this section would inconvenience the applicant or an air carrier, he may take it before he receives the result of the written test, or after he has failed the written test.
§ 63.59 Retesting after failure.

(a) An applicant for a flight navigator certificate who fails a written or practical test for that certificate may apply for retesting—

(1) After 30 days after the date he failed that test; or

(2) Before the 30 days have expired if the applicant presents a signed statement from a certificated flight navigator, certificated ground instructor, or any other qualified person approved by the Administrator, certifying that that person has given the applicant additional instruction in each of the subjects failed and that person considers the applicant ready for retesting.

(b) A statement from a certificated flight navigator, or from an operations official of an approved navigator course, is acceptable, for the purposes of paragraph (a)(2) of this section, for the written test and for the flight test. A statement from a person approved by the Administrator is acceptable for the written tests. A statement from a supervising or check navigator with the United States Armed Forces is acceptable for the written test and for the practical test.

(c) If the applicant failed the flight test, the additional instruction must have been administered in flight.


§ 63.61 Flight navigator courses.

An applicant for approval of a flight navigator course must submit a letter to the Administrator requesting approval, and must also submit three copies of the course outline, a description of his facilities and equipment, and a list of the instructors and their qualifications. Requirements for the course are set forth in appendix B to this part.

APPENDIX A TO PART 63—TEST REQUIREMENTS FOR FLIGHT NAVIGATOR CERTIFICATE

(a) Demonstration of skill. An applicant will be required to pass practical tests on the prescribed subjects. These tests may be given by FAA inspectors and designated flight navigator examiners.

(b) The examination. The practical examination consists of a ground test and a flight test as itemized on the examination check sheet. Each item must be completed satisfactorily in order for the applicant to obtain a passing grade. Items 5, 6, 7 of the ground test may be completed orally, and items 17, 22, 23, 34, 36, 37, 38, and 39 of the flight test may be completed by an oral examination when a lack of ground facilities or navigation equipment makes such procedure necessary. In these cases a notation to that effect shall be made in the “Remarks” space on the check sheet.

(c) Examination procedure. (1) An applicant will provide an aircraft in which celestial observations can be taken in all directions. Minimum equipment shall include a table for plotting, a drift meter or absolute altimeter, an instrument for taking visual bearings, and a radio direction finder.

(2) More than one flight may be used to complete the flight test and any type of flight pattern may be used. The test will be conducted chiefly over water whenever practicable, and without regard to radio range legs or radials. If the test is conducted chiefly over land, a chart should be used which shows very little or no topographical and aeronautical data. The total flight time will cover a period of at least four hours. Only one applicant may be examined at one time, and no applicant may perform other than navigator duties during the examination.

(3) When the test is conducted with an aircraft belonging to an air carrier, the navigation procedures should conform with those set forth in the carrier's operations manual. Items of the flight test which are not performed during the routine navigation of the flight will be completed by oral examination after the flight or at times during flight which the applicant indicates may be used for tests on those items. Since in-flight weather conditions, the reliability of the weather forecast, and the stability of the aircraft will have considerable effect on an applicant’s performance, good judgment must be used by the agent or examiner in evaluating the tests.

(d) Ground test. For the ground test, in the order of the numbered items on the examination check sheet, an applicant will be required to:

(1) Identify without a star identifier, at least six navigational stars and all planets available for navigation at the time of the
Federal Aviation Administration, DOT

examination and explain the method of identification.

(2) Identify two additional stars with a star identifier or sky diagrams and explain identification procedure.

(3) Precompute a time-altitude curve for a period of about 20 minutes and take 10 single observations of a celestial body which is rising or setting rapidly. The intervals between observations should be at least one minute. Mark each observation on the graph to show accuracy. All observations, after corrections, shall plot within 8 minutes of arc from the time-altitude curve, and the average error shall not exceed 5 minutes of arc.

(4) Take and plot one 3-star fix and 3 LOP’s of the sun. Plotted fix or an average of LOP’s must fall within 5 miles of the actual position of the observer.

(5) Demonstrate or explain the compensation and swinging of a liquid-type magnetic compass.

(6) Demonstrate or explain a method of aligning one type of drift meter.

(7) Demonstrate or explain a method of aligning an astro-compass or periscopic sextant.

(e) Flight test. For the flight test, in the order of the numbered items on the examination check sheet, an applicant will be required to:

(1) Demonstrate his ability to read weather symbols and interpret synoptic surface and upper air weather maps with particular emphasis being placed on winds.

(2) Prepare a flight plan by zones from the forecast winds or pressure data of an upper air chart and the operator’s data.

(3) Compute from the operator’s data the predicted fuel consumption for each zone of the flight, including the alternate.

(4) Determine the point-of-no-return for the flight with all engines running and the equitime point with one engine inoperative. Graphical methods which are part of the company’s operations manual may be used for these computations.

(5) Prepare a cruise control (howgozit) chart from the operator’s data.

(6) Enter actual fuel consumed on the cruise control chart and interpret the variations of the actual curve from the predicted curve.

(7) Check the presence on board and operating condition of all navigation equipment. Normally a check list will be used. This check will include a time tick or chronometer comparison. Any lack of thoroughness during this check will justify this item being graded unsatisfactory.

(8) Locate emergency equipment, such as, the nearest fire extinguisher, life preserver, life rafts, exits, axe, first aid kits, etc.

(9) Recite the navigator’s duties and stations during emergencies for the type of aircraft used for the test.

(10) Demonstrate the proper use of a flux gate compass or gyrosyn compass (when available), with special emphasis on the caging methods and the location of switches, circuit breakers, and fuses. If these compasses are not part of the aircraft’s equipment, an oral examination will be given.

(11) Be accurate and use good judgment when setting and altering headings. Errorneous application of variation, deviation, or drift correction, or incorrect measurement of course on the chart will be graded as unsatisfactory.

(12) Demonstrate or explain the use of characteristics of various chart projections used in long-range air navigation, including the plotting of courses and bearings, and the measuring of distances.

(13) Demonstrate ability to identify designated landmarks by the use of a sectional or WAC chart.

(14) Use a computer with facility and accuracy for the computation of winds, drift correction and drift angles, ground speeds, ETA’s, fuel loads, etc.

(15) Determine track, ground speed, and wind by the double drift method. When a drift meter is not part of the aircraft’s equipment, an oral examination on the use of the drift meter and a double drift problem shall be completed.

(16) Determine ground speed and wind by the timing method with a drift meter. When a drift meter is not part of the aircraft’s equipment, an oral examination on the procedure and a problem shall be completed.

(17) Demonstrate the use of air plot for determining wind between fixes and for plotting pressure lines of position when using pressure and absolute altimeter comparisons.

(18) Give ETA’s to well defined check points at least once each hour after the second hour of flight. The average error shall not be more than 5 percent of the intervening time intervals, and the maximum error of any one ETA shall not be more than 10 percent.

(19) Demonstrate knowledge and use of D/F equipment and radio facility information. Grading on this item will be based largely on the applicant’s selection of those radio aids which will be of most value to his navigation, the manner with which he uses equipment, including filter box controls, and the precision with which he reads bearings. The aircraft’s compass heading and all compass corrections must be considered for each bearing.

(20) Use care in tuning to radio stations to insure maximum reception of signal and check for interference signals. Receiver will be checked to ascertain that antenna and BFO (Voice-CW) switches are in correct positions.
(21) Identify at least three radio stations using International Morse code only for identification. The agent or examiner will tune in these stations so that the applicant will have no knowledge of the direction, distance, or frequency of the stations.

(22) Take at least one radio bearing by manual use of the loop. The agent or examiner will check the applicant’s bearing by taking a manual bearing on the same station immediately after the applicant.

(23) Show the use of good judgment in evaluating radio bearings, and explain why certain bearings may be of doubtful value.

(24) Determine and apply correctly the corrections required to be made to radio bearings before plotting them on a Mercator chart, and demonstrate the ability to plot bearings accurately on charts of the Mercator and Lambert conformal projections.

(25) Compute the compass heading, ETA, and fuel remaining if it is assumed that the flight would be diverted to an alternate airport at a time specified by the agent or examiner.

(26) Check the counter scales of a Loran receiver for accuracy, and explain the basic (face) adjustments which affect tuning and counter alignment. A guide sheet may be used for this test.

(27) Demonstrate a knowledge of the basic principle of Loran and the ability to tune a Loran receiver, to match signals, to read time differences, to plot Loran LOP’s, and to identify and use sky waves.

(28) Take and plot bearings from a consol station and explain the precautions which must be taken when tuning a radio receiver for consol signals. Also, discuss those conditions which affect the reliability of consol bearings.

(29) Demonstrate the ability to properly operate and read an absolute altimeter.

(30) Demonstrate the “D” factors for a series of compared readings of an absolute altimeter and a pressure altimeter.

(31) Determine drift angle or lateral displacement from the true headingline by application of Bellamy’s formula or a variation thereof.

(32) Interpret altimeter comparison data with respect to the pressure system found at flight level. From this data evaluate the accuracy of the prognostic weather map used for flight planning and apply this analysis to the navigation of the flight.

(33) Interpret single LOP’s for most probable position, and show how a series of single LOP’s of the same body may be used to indicate the probable track and ground speed. Also, show how a series of single LOP’s (celestial or radio) from the same celestial body or radio station may be used to determine position when the change of azimuth or bearing is 30° or more between observations.

(34) Select one of the celestial LOP’s used during the flight and explain how to make a single line of position approach to a point selected by the agent or examiner, giving headings, times, and ETA’s.

(35) Demonstrate the proper use of an astro-compass or periscope sextant for taking bearings.

(36) Determine compass deviation as soon as possible after reaching cruising altitude and whenever there is a change of compass heading of 15° or more.

(37) Take celestial fixes at hourly intervals when conditions permit. The accuracy of these fixes shall be checked by means of a Loran, radio, or visual fix whenever practicable. After allowing for the probable error of a Loran, radio, or visual fix, a celestial fix under favorable conditions should plot within 10 miles of the actual position.

(38) Select celestial bodies for observation, when possible, whose azimuths will differ by approximately 120° for a 3-body fix and will differ by approximately 90° for a 2-body fix. The altitudes of the selected bodies should be between 25° and 75° whenever practicable.

(39) Have POMAR and any other required reports ready for transmission at time of schedule, and be able to inform the pilot in command promptly with regard to the aircraft’s position and progress in comparison with the flight plan.

(40) Keep a log with sufficient legible entries to provide a record from which the flight could be retraced.

(41) Note significant weather changes which might influence the drift or ground speed of the aircraft, such as, temperature, “D” factors, frontal conditions, turbulence, etc.

(42) Determine the wind between fixes as a regular practice.

(43) Estimate the time required and average ground speed during a letdown, under conditions specified by the pilot in command.

(44) Work with sufficient speed to determine the aircraft’s position hourly by celestial means and also make all other observations and records pertinent to the navigation. The applicant should be able to take the observation, compute, and plot a celestial LOP within a time limit of 8 minutes; take and plot a Loran LOP within a time limit of 3 minutes for ground waves and 4 minutes for sky waves; observe the absolute and pressure altimeters and compute the drift or lateral displacement within a time limit of 3 minutes.

(45) Be accurate in reading instruments and making computations. Errors which are made and corrected without affecting the navigation will be disregarded unless they cause considerable loss of time.

An uncorrected error in computation (including reading instruments and books) which will affect the reported position more than 25 miles, the heading more than 3°, or
any ETA more than 15 minutes will cause this item to be graded unsatisfactory.

(46) Be alert to changing weather or other conditions during flight which might affect the navigation. An applicant should not fail to take celestial observations just prior to encountering a broken or overcast sky condition; and he should not fail to take a bearing on a radio station, which operates at scheduled intervals and which would be a valuable aid to the navigation.

(47) Show a logical choice and sequence in using the various navigation methods according to time and accuracy, and check the positions determined by one method against positions determined by other methods.

(48) Use a logical sequence in performing the various duties of a navigator and plan work according to a schedule. The more important duties should not be neglected for others of less importance.

APPENDIX B TO PART 63—FLIGHT NAVIGATOR TRAINING COURSE REQUIREMENTS

(a) Training course outline—(1) Format. The ground course outline and the flight course outline shall be combined in one looseleaf binder and shall include a table of contents, divided into two parts—ground course and flight course. Each part of the table of contents must contain a list of the major subjects, together with hours allotted to each subject and the total classroom and flight hours.

(2) Ground course outline. (i) It is not mandatory that a course outline have the subject headings arranged exactly as listed in this paragraph. Any arrangement of general headings and subheadings will be satisfactory provided all the subject material listed here is included and the acceptable minimum number of hours is assigned to each subject. Each general subject shall be broken down into detail showing items to be covered.

(ii) If any agency desires to include additional subjects in the ground training curriculum, such as international law, flight hygiene, or others which are not required, the hours allotted these additional subjects may not be included in the minimum classroom hours.

(iii) The following subjects with classroom hours are considered the minimum coverage for a ground training course for flight navigators:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Classroom hours</th>
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</thead>
<tbody>
<tr>
<td>Federal Aviation Administration</td>
<td>5</td>
</tr>
<tr>
<td>To include: Parts 63, 91, and 121 of this chapter.</td>
<td></td>
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<tr>
<td>Meteorology</td>
<td>40</td>
</tr>
</tbody>
</table>

B. Navigation

<table>
<thead>
<tr>
<th>Subject</th>
<th>Classroom hours</th>
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<tbody>
<tr>
<td>To include:</td>
<td></td>
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<tr>
<td>Basic weather principles</td>
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<tr>
<td>Temperature</td>
<td></td>
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<td>Pressure</td>
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<tr>
<td>Winds</td>
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<tr>
<td>Moisture in the atmosphere</td>
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<tr>
<td>Stability</td>
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<tr>
<td>Clouds</td>
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<tr>
<td>Hazards</td>
<td></td>
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<tr>
<td>Air masses</td>
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<tr>
<td>Front weather</td>
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<tr>
<td>Fog</td>
<td></td>
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<tr>
<td>Thunderstorms</td>
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<tr>
<td>Icing</td>
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<tr>
<td>World weather and climate</td>
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<tr>
<td>Weather maps and weather reports</td>
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<tr>
<td>Forecasting</td>
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</table>

C. Navigation instruments (exclusive of radio and radar)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Classroom hours</th>
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</thead>
<tbody>
<tr>
<td>To include:</td>
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<tr>
<td>Compasses</td>
<td></td>
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<tr>
<td>Pressure altimeters</td>
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<tr>
<td>Airspeed indicators</td>
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<tr>
<td>Dihelimeter</td>
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<td>Bearing indicators</td>
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<tr>
<td>Aircraft octants</td>
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<tr>
<td>Instrument calibration and alignment</td>
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</table>

D. Charts and pilotage

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<thead>
<tr>
<th>Subject</th>
<th>Classroom hours</th>
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<tbody>
<tr>
<td>To include:</td>
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<tr>
<td>Chart projections</td>
<td></td>
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<tr>
<td>Chart symbols</td>
<td></td>
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<tr>
<td>Principles of pilotage</td>
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</table>

E. Dead reckoning

<table>
<thead>
<tr>
<th>Subject</th>
<th>Classroom hours</th>
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</thead>
<tbody>
<tr>
<td>To include:</td>
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<tr>
<td>Air plot</td>
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<tr>
<td>Ground plot</td>
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<tr>
<td>Calculation of ETA</td>
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<tr>
<td>Vector analysis</td>
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<tr>
<td>Use of computer</td>
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<td>Search</td>
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F. Absolute altimeter with applications

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<thead>
<tr>
<th>Subject</th>
<th>Classroom hours</th>
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<tbody>
<tr>
<td>To include:</td>
<td></td>
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<tr>
<td>Principles of construction</td>
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<tr>
<td>Operating instructions</td>
<td></td>
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<tr>
<td>Use of Bellamy’s formula</td>
<td></td>
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<tr>
<td>Flight planning with single drift correction</td>
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</table>

G. Radio and long-range navigational aids

<table>
<thead>
<tr>
<th>Subject</th>
<th>Classroom hours</th>
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<tbody>
<tr>
<td>To include:</td>
<td></td>
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<tr>
<td>Principles of radio transmission and reception</td>
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<tr>
<td>Radio aids to navigation</td>
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<tr>
<td>Government publications</td>
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<tr>
<td>Airborne D/F equipment</td>
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<tr>
<td>Errors of radio bearings</td>
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<td>Quadrantal correction</td>
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<td>Plotting radio bearings</td>
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<tr>
<td>ICAO Q code for direction finding</td>
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<tr>
<td>Loran</td>
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<tr>
<td>Consol</td>
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H. Celestial navigation

<table>
<thead>
<tr>
<th>Subject</th>
<th>Classroom hours</th>
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<tbody>
<tr>
<td>To include:</td>
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<tr>
<td>ICAO Q code for direction finding</td>
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<tr>
<td>Loran</td>
<td></td>
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<tr>
<td>Consol</td>
<td></td>
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</tbody>
</table>

109
Subject | Classroom hours
--- | ---
To include:  
The solar system.  
The celestial sphere.  
The astronomical triangle.  
Theory of lines of position.  
Use of the Air Almanac.  
Time and its applications.  
Navigation tables.  
Precomputation.  
Celestial line of position approach.  
Star identification.  
Corrections to celestial observations.  
|  
Flight planning and cruise control | 25

To include:  
The flight plan.  
Fuel consumption charts.  
Methods of cruise control.  
Flight progress chart.  
Point-of-no-return.  
Precomputation.  
Celestial line of position approach.  
|  
Long-range flight problems | 15

Total (exclusive of final examinations) | 350

(3) Flight course outline. (i) A minimum of 150 hours of supervised flight training shall be given, of which at least 50 hours of flight training must be given at night, and celestial navigation must be used during flights which total at least 125 hours.

(ii) A maximum of 50 hours of the required flight training may be obtained in acceptable types of synthetic flight navigator training devices.

(iii) Flights should be at least four hours in length and should be conducted off civil airways. Some training on long-range flights is desirable, but is not required. There is no limit to the number of students that may be trained on one flight, but at least one astrodrome or one perisopic sextant mounting must be provided for each group of four students.

(iv) Training must be given in dead reckoning, piloting, radio navigation, celestial navigation, and the use of the absolute altimeter.

(b) Equipment. (1) Classroom equipment shall include one table at least 24" x 32" in dimensions for each student.

(2) Aircraft suitable for the flight training must be available to the approved course operator to insure that the flight training may be completed without undue delay.

The approved course operator may contract or obtain written agreements with aircraft operators for the use of suitable aircraft. A copy of the contract or written agreement with an aircraft operator shall be attached to each of the three copies of the course outline submitted for approval. In all cases, the approved course operator is responsible for the nature and quality of instruction given during flight.

(c) Instructors. (1) Sufficient classroom instructors must be available to prevent an excessive ratio of students to instructors. Any ratio in excess of 20 to 1 will be considered unsatisfactory.

(2) At least one ground instructor must hold a valid flight navigator certificate, and be utilized to coordinate instruction of ground school subjects.

(3) Each instructor who conducts flight training must hold a valid flight navigator certificate.

(d) Revision of training course. (1) Requests for revisions to course outlines, facilities, and equipment shall follow procedures for original approval of the course. Revisions should be submitted in such form that an entire page or pages of the approved outline can be removed and replaced by the revisions.

(2) The list of instructors may be revised at any time without request for approval, provided the minimum requirement of paragraph (e) of this section is maintained.

(e) Credit for previous training and experience. (1) Credit may be granted by an operator to students for previous training and experience which is provable and comparable to portions of the approved curriculum. When granting such credit, the approved course operator should be fully cognizant of the fact that he is responsible for the proficiency of his graduates in accordance with subdivision (i) of paragraph (3) of this section.

(2) Where advanced credit is allowed, the operator shall evaluate the student's previous training and experience in accordance with the normal practices of accredited technical schools. Before credit is given for any ground school subject or portion thereof, the student must pass an appropriate examination given by the operator. The results of the examination, the basis for credit allowance, and the hours credited shall be incorporated as a part of the student's records.

(3) Credit up to a maximum of 50 hours toward the flight training requirement may be given to pilots who have logged at least 500 hours while a member of a flight crew which required a certificated flight navigator or the Armed Forces equivalent. A similar credit may also be given to a licensed deck officer of the Maritime Service who has served as such for at least one year on ocean-going vessels. One-half of the flight time credited under the terms of this paragraph may be applied toward the 50 hours of flight training required at night.

(f) Students records and reports. Approval of a course shall not be continued in effect unless the course operator keeps an accurate record of each student, including a chronological log of all instruction, subjects covered and course examinations and grades, and unless he prepares and transmits to the local Flight Standards District Office not later than January 31 of each year, a report containing the following information for the previous calendar year:
(1) The names of all students graduated, together with their school grades for ground and flight subjects.

(2) The names of all students failed or dropped, together with their school grades and reasons for dropping.

(g) Quality of instruction. Approval of a course shall not be continued in effect unless at least 80 percent of the students who apply within 90 days after graduation are able to qualify on the first attempt for certification as flight navigators.

(h) Statement of graduation. Each student who successfully completes an approved flight navigator course shall be given a statement of graduation.

(i) Inspections. Approved course operations will be inspected by authorized representatives of the Administrator as often as deemed necessary to insure that instruction is maintained at the required standards, but the period between inspections shall not exceed 12 months.

(j) Change of ownership, name, or location—

(1) Change of ownership. Approval of a flight navigator course shall not be continued in effect after the course has changed ownership. The new owner must obtain a new approval by following the procedure prescribed for original approval.

(2) Change in name. An approved course changed in name but not changed in ownership shall remain valid if the change is reported by the approved course operator to the local Flight Standards District Office. A letter of approval under the new name will be issued by the regional office.

(k) Change in location. An approved course shall remain in effect even though the approved course operator changes location if the change is reported without delay by the operator to the local Flight Standards District Office, which will inspect the facilities to be used. If they are found to be adequate, a letter of approval showing the new location will be issued by the regional office.

(l) Cancellation of approval—(1) Failure to meet or maintain any of the requirements set forth in this section for the approval or operation of an approved flight navigator course shall be considered sufficient reason for cancellation of the approval.

(2) If an operator should desire voluntary cancellation of his approved course, he should submit the effective letter of approval and a written request for cancellation to the Administrator through the local Flight Standards District Office.

(m) Renewal. Application for renewal of authority to operate an approved flight navigator course shall expire 24 months after the last day of the month of issuance.

Date. Renewal of approval will depend upon the course operator meeting the current conditions for approval and having a satisfactory record as an operator.


APPENDIX C TO PART 63—FLIGHT ENGINEER TRAINING COURSE REQUIREMENTS

(a) Training course outline—(1) Format. The ground course outline and the flight course outline are independent. Each must be contained in a looseleaf binder to include a table of contents. If an applicant desires approval of both a ground school course and a flight school course, they must be combined in one looseleaf binder that includes a separate table of contents for each course. Separate course outlines are required for each type of airplane.

(2) Ground course outline. (i) It is not mandatory that the subject headings be arranged exactly as listed in this paragraph. Any arrangement of subjects is satisfactory if all the subject material listed here is included and at least the minimum programmed hours are assigned to each subject. Each general subject must be broken down into detail showing the items to be covered.

(ii) If any course operator desires to include additional subjects in the ground course curriculum, such as international law, flight hygiene, or others that are not required, the hours allotted these additional subjects may not be included in the minimum programmed classroom hours.

(iii) The following subjects and classroom hours are the minimum programmed coverage for the initial approval of a ground training course for flight engineers. Subsequent to initial approval of a ground training course an applicant may apply to the Administrator for a reduction in the programmed hours. Approval of a reduction in the approved programmed hours is based on improved training effectiveness due to improvements in methods, training aids, quality of instruction, or any combination thereof.

<table>
<thead>
<tr>
<th>Subject</th>
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</thead>
<tbody>
<tr>
<td>Federal Aviation Regulations</td>
<td>10</td>
</tr>
<tr>
<td>To include the regulations of this chapter that apply to flight engineers</td>
<td>10</td>
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<tr>
<td>Theory of Flight and Aerodynamics</td>
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</tr>
<tr>
<td>Airplane Familiarization</td>
<td>90</td>
</tr>
<tr>
<td>Subject</td>
<td>Classroom hours</td>
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<tr>
<td>---------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>To include as appropriate:</td>
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<tr>
<td>Specifications.</td>
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<tr>
<td>Construction features.</td>
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<tr>
<td>Flight controls.</td>
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<tr>
<td>Hydraulic systems.</td>
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<tr>
<td>Pneumatic systems.</td>
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<tr>
<td>Electrical systems.</td>
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<tr>
<td>Anti-icing and de-icing systems.</td>
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</tr>
<tr>
<td>Pressurization and air-conditioning systems.</td>
<td></td>
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<tr>
<td>Vacuum systems.</td>
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<tr>
<td>Pilot static systems.</td>
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<tr>
<td>Instrument systems.</td>
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<tr>
<td>Fuel and oil systems.</td>
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<tr>
<td>Emergency equipment.</td>
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</tr>
<tr>
<td>Normal Operations (Ground and Flight)</td>
<td>50</td>
</tr>
<tr>
<td>To include as appropriate:</td>
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<tr>
<td>Servicing methods and procedures.</td>
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<tr>
<td>Operation of all the airplane systems.</td>
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<td>Loading and center of gravity computations.</td>
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<tr>
<td>Cruise control (normal, long range, maximum endurance)</td>
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<td>Power and fuel computation.</td>
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<tr>
<td>Meteorology as applicable to engine operation</td>
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<tr>
<td>Emergency Operations</td>
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<tr>
<td>To include as appropriate:</td>
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<tr>
<td>Landing gear, brakes, flaps, speed brakes, and leading edge devices</td>
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<td>Pressurization and air-conditioning.</td>
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<tr>
<td>Portable fire extinguishers.</td>
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<td>Fuselage fire and smoke control.</td>
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<td>Loss of electrical power.</td>
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<td>Engine fire control.</td>
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<td>Engine shut-down and restart.</td>
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<td>Use of oxygen.</td>
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<tr>
<td>Normal duties, procedures and operations</td>
<td>235</td>
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<tr>
<td>To include as appropriate:</td>
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<tr>
<td>Airplane preflight.</td>
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<td>Engine starting, power checks, pretakeoff, postlanding and shut-down procedures.</td>
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<td>Power control.</td>
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<td>Temperature control.</td>
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<td>Engine operation analysis.</td>
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<td>Operation of all systems.</td>
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<td>Fuel management.</td>
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<td>Logbook entries.</td>
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<td>Pressurization and air conditioning.</td>
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<td>Recognition and correction of in-flight malfunctions</td>
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<td>To include:</td>
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<td>Analysis of abnormal engine operation.</td>
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<td>Analysis of abnormal operation of all systems.</td>
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<td>Corrective action.</td>
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<td>Emergency operations in flight</td>
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<td>To include as appropriate:</td>
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<tr>
<td>Engine fire control.</td>
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<tr>
<td>Fuselage fire control.</td>
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<td>Smoke control.</td>
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<td>Loss of power or pressure in each system.</td>
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<td>Engine overspeed.</td>
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<tr>
<td>Fuel dumping.</td>
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<tr>
<td>Landing gear, spoilers, speed brakes, and flap extension and retraction.</td>
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<tr>
<td>Engine shut-down and restart.</td>
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<tr>
<td>Use of oxygen.</td>
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<td>(iv) If the Administrator finds a simulator or flight engineer training device to accurately reproduce the design, function, and control characteristics, as pertaining to the duties and responsibilities of a flight engineer on the type of airplane to be flown, the flight training time may be reduced by a ratio of 1 hour of flight time to 2 hours of airplane simulator time, or 3 hours of flight engineer training device time, as the case may be, subject to the following limitations:</td>
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<tr>
<td>(a) Except as provided in subdivision (b) of this paragraph, the required flight instruction time in an airplane may not be less than 5 hours.</td>
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<td>(b) As to a flight engineer student holding at least a commercial pilot certificate with an instrument rating, airplane simulator or a combination of airplane simulator and flight engineer training device time may be submitted for up to all 10 hours of the required flight instruction time in an airplane. However, not more than 15 hours of flight engineer training device time may be substituted for flight instruction time.</td>
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<tr>
<td>(v) To obtain credit for flight training time, airplane simulator time, or flight engineer training device time, the student must occupy the flight engineer station and operate the controls.</td>
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(b) Classroom equipment. Classroom equipment should consist of systems and procedural training devices, satisfactory to the Administrator, that duplicate the operation of the systems of the airplane in which the student is to receive his flight training.

(c) Contracts or agreements. (1) An approved flight engineer course operator may contract with other persons to obtain suitable airplanes, airplane simulators, or other training devices or equipment.

(2) An operator who is approved to conduct both the flight engineer ground course and the flight engineer flight course may contract with others to conduct one course or the other in its entirety but may not contract with others to conduct both courses for the same airplane type.

(3) An operator who has approval to conduct a flight engineer ground course or flight course for a type of airplane, but not both courses, may not contract with another person to conduct that course in whole or in part.

(4) An operator who contracts with another to conduct a flight engineer course may not authorize or permit the course to be conducted in whole or in part by a third person.

(5) In all cases, the course operator who is approved to operate the course is responsible for the nature and quality of the instruction given.

(6) A copy of each contract authorized under this paragraph must be attached to each of the 3 copies of the course outline submitted for approval.

(d) Instructors. (1) Only certificated flight engineers may give the flight instruction required by this appendix in an airplane, simulator, or flight engineer training device.

(2) There must be a sufficient number of qualified instructors available to prevent an excess ratio of students to instructors.

(e) Revisions. (1) Requests for revisions of the course outlines, facilities or equipment must follow the procedures for original approval of the course. Revisions must be submitted in such form that an entire page or pages of the approved outline can be removed and replaced by the revisions.

(2) The list of instructors may be revised at any time without request for approval, if the requirements of paragraph (d) of this appendix are maintained.

(f) Ground school credits. (1) Credit may be granted a student in the ground school course by the course operator for comparable previous training or experience that the student can show by written evidence; however, the course operator must still meet the quality of instruction as described in paragraph (h) of this appendix.

(2) Before credit for previous training or experience may be given, the student must pass a test given by the course operator on the subject for which the credit is to be given. The course operator shall incorporate results of the test, the basis for credit allowance, and the hours credited as part of the student’s records.

(g) Records and reports. (1) The course operator must maintain, for at least two years after a student graduates, fails, or drops from a course, a record of the student’s training, including a chronological log of the subject course, attendance examinations, and grades.

(2) Except as provided in paragraph (3) of this section, the course operator must submit to the Administrator, not later than January 31 of each year, a report for the previous calendar year’s training, to include:

(i) Name, enrollment and graduation date of each student;

(ii) Ground school hours and grades of each student;

(iii) Flight, airplane simulator, flight engineer training device hours, and grades of each student; and

(iv) Names of students failed or dropped, together with their school grades and reasons for dropping.

(3) Upon request, the Administrator may waive the reporting requirements of paragraph (2) of this section for an approved flight engineer course that is part of an approved training course under subpart N of part 121 of this chapter.

(h) Quality of instruction. (1) Approval of a ground course is discontinued whenever less than 80 percent of the students pass the FAA written test on the first attempt.

(2) Approval of a flight course is discontinued whenever less than 80 percent of the students pass the FAA practical test on the first attempt.

(3) Notwithstanding paragraphs (1) and (2) of this section, approval of a ground or flight course may be continued when the Administrator finds—

(i) That the failure rate was based on less than a representative number of students; or

(ii) That the course operator has taken satisfactory means to improve the effectiveness of the training.

(i) Time limitation. Each student must apply for the written test and the flight test within 90 days after completing the ground school course.

(j) Statement of course completion. (1) The course operator shall give to each student who successfully completes an approved flight engineer ground school training course, and passes the FAA written test, a statement of successful completion of the course that indicates the date of training, the type of airplane on which the ground course training was based, and the number of hours received in the ground school course.

(2) The course operator shall give each student who successfully completes an approved flight engineer flight course, and passed the FAA practical test, a statement of successful completion.
completion of the flight course that indicates the dates of the training, the type of airplane used in the flight course, and the number of hours received in the flight course.

(3) A course operator who is approved to conduct both the ground course and the flight course may include both courses in a single statement of course completion if the provisions of paragraphs (1) and (2) of this section are included.

(4) The requirements of this paragraph do not apply to an air carrier or commercial operator with an approved training course under part 121 of this chapter providing the student receives a flight engineer certificate upon completion of that course.

(k) Inspections. Each course operator shall allow the Administrator at any time or place, to make any inspection necessary to ensure that the quality and effectiveness of the instruction are maintained at the required standards.

(1) Change of ownership, name, or location. (1) Approval of a flight engineer ground course or flight course is conditioned upon the course operator meeting the requirements of this appendix for the approval of a flight engineer ground school course in the same type of airplane for which he has completed an approved flight engineer flight course.

(2) Approval of a flight engineer ground course or flight course does not terminate upon a change in the name of the course that is reported to the Administrator within 30 days. The Administrator issues a new letter of approval, using the new name, upon receipt of notice within that time.

(3) Approval of a flight engineer ground course or flight course does not terminate upon a change in location of the course that is reported to the Administrator within 30 days. The Administrator issues a new letter of approval, showing the new location, upon receipt of notice within that time, if he finds the new facilities to be adequate.

(m) Cancellation of approval. (1) Failure to meet or maintain any of the requirements of this appendix for the approval of a flight engineer ground course or flight course is reason for cancellation of the approval.

(2) If a course operator desires to voluntarily terminate the course, he should notify the Administrator in writing and return the last letter of approval.

(n) Duration. Except for a course operated as part of an approved training course under subpart N of part 121 of this chapter, the approval to operate a flight engineer ground course or flight course terminates 24 months after the last day of the month of issue.

(o) Renewal. (1) Renewal of approval to operate a flight engineer ground course or flight course is conditioned upon the course operator’s meeting the requirements of this appendix.

(2) Application for renewal may be made to the Administrator at any time after 60 days before the termination date.

(p) Course operator approvals. An applicant for approval of a flight engineer ground course, or flight course, or both, must meet all of the requirements of this appendix concerning application, approval, and continuing approval of that course or courses.

(q) Practical test eligibility. An applicant for a flight engineer certificate and class rating under the provisions of §63.37(b)(6) is not eligible to take the practical test unless he has successfully completed an approved flight engineer ground school course in the same type of airplane for which he has completed an approved flight engineer flight course.

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APPENDIX A TO PART 65—AIRCRAFT DISPATCHER COURSES

AUTHORITY: 49 U.S.C. 106(g), 40113, 44701-44703, 44707, 44709-44711, 45102-45103, 45301-45302.

SOURCE: Docket No. 1179, 27 FR 7973, Aug. 10, 1962, unless otherwise noted.

SPECIAL FEDERAL AVIATION REGULATIONS

SFAR No. 58

EDITORIAL NOTE: For the text of SFAR No. 58, see part 121 of this chapter.

SFAR No. 63—RELIEF FOR PARTICIPANTS IN OPERATION DESERT SHIELD/STORM

SECTIONS

1. Applicability.
2. Required documents.
3. Expiration date.

1. Applicability. Contrary provisions of part 65 notwithstanding, under the procedures prescribed herein, Flight Standards District Offices (FSDO) are authorized to accept an expired written test report to show eligibility to take a practical test required under this Part and/or renew an expired inspection authorization to show eligibility for renewal under § 65.93, provided—
   a. The person is a civilian or military person who served in support of Operation Desert Shield/Storm during the time period from August 2, 1990 to December 31, 1992;
   b. The person's airman written test report and/or inspection authorization expired within the time period from 60 days prior to assignment to 60 days after reassignment from support of Operation Desert Shield/Storm; and
   c. The person completes the required practical test within 6 calendar months following the date of reassignment from Operation Desert Shield/Storm or by December 31, 1992, whichever date is sooner.

2. Required documents. The FSDO and applicant shall include one of the following documents with the airman application, and the documents must show the dates of assignment to and reassignment from support of Operation Desert Shield/Storm:
   a. Official government documents showing the person was a civilian on official duty for the United States Government in support of Operation Desert Shield/Storm; and
   b. Military orders showing the person was a member of the uniformed services assigned to duty in support of Operation Desert Shield/Storm during the time period from August 2, 1990 to December 31, 1992.
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(c) Military orders showing the person was an active member of the National Guard or Reserve called to active duty in support of Operation Desert Shield/Storm during the time period from August 2, 1990 to December 31, 1992; or

d. A letter from the unit commander providing inclusive dates during which the person served in support of Operation Desert Shield/Storm during the time period from August 2, 1990 to December 31, 1992.

3. Expiration date. This SFAR expires December 31, 1992, unless sooner superseded or rescinded.

[SFAR 63, 56 FR 27163, June 12, 1991]

Subpart A—General

§ 65.1 Applicability.

This part prescribes the requirements for issuing the following certificates and associated ratings and the general operating rules for the holders of those certificates and ratings:

(a) Air-traffic control-tower operators.
(b) Aircraft dispatchers.
(c) Mechanics.
(d) Repairmen.
(e) Parachute riggers.

§ 65.3 Certification of foreign airmen other than flight crewmembers.

A person who is neither a U.S. citizen nor a resident alien is issued a certificate under subpart D of this part, outside the United States, only when the Administrator finds that the certificate is needed for the operation or continued airworthiness of a U.S.-registered civil aircraft.

[Doc. No. 21956, 50 FR 35693, Aug. 16, 1982]

§ 65.11 Application and issue.

(a) Application for a certificate and appropriate class rating, or for an additional rating, under this part must be made on a form and in a manner prescribed by the Administrator. Each person who is neither a U.S. citizen nor a resident alien and who applies for a written or practical test to be administered outside the United States or for any certificate or rating issued under this part must show evidence that the fee prescribed in appendix A of part 187 of this chapter has been paid.

(b) An applicant who meets the requirements of this part is entitled to an appropriate certificate and rating.

(c) Unless authorized by the Administrator, a person whose air traffic control tower operator, mechanic, or parachute rigger certificate is suspended may not apply for any rating to be added to that certificate during the period of suspension.

(d) Unless the order of revocation provides otherwise—

(1) A person whose air traffic control tower operator, aircraft dispatcher, or parachute rigger certificate is revoked may not apply for the same kind of certificate for 1 year after the date of revocation; and

(2) A person whose mechanic or repairman certificate is revoked may not apply for either of those kinds of certificates for 1 year after the date of revocation.


§ 65.12 Offenses involving alcohol or drugs.

(a) A conviction for the violation of any Federal or state statute relating to the growing, processing, manufacture, sale, disposition, possession, transportation, or importation of narcotic drugs, marihuana, or depressant or stimulant drugs or substances is grounds for—

(1) Denial of an application for any certificate or rating issued under this part for a period of up to 1 year after the date of final conviction; or

(2) Suspension or revocation of any certificate or rating issued under this part.

(b) The commission of an act prohibited by §91.19(a) of this chapter is grounds for—

(1) Denial of an application for a certificate or rating issued under this part for a period of up to 1 year after the date of that act; or

(2) Suspension or revocation of any certificate or rating issued under this part.


§ 65.13 Temporary certificate.

A certificate and ratings effective for a period of not more than 120 days may
§ 65.18 Written tests: Cheating or other unauthorized conduct.

(a) Except as authorized by the Administrator, no person may—

(1) Copy, or intentionally remove, a written test under this part;

(2) Give to another, or receive from another, any part or copy of that test;

(3) Give help on that test to, or receive help on that test from, any person during the period that test is being given;

(4) Take any part of that test in behalf of another person;

(5) Use any material or aid during the period that test is being given; or
§ 65.19 Retesting after failure.

An applicant for a written, oral, or practical test for a certificate and rating, or for an additional rating under this part, may apply for retesting—

(a) After 30 days after the date the applicant failed the test; or

(b) Before the 30 days have expired if the applicant presents a signed statement from an airman holding the certificate and rating sought by the applicant, certifying that the airman has given the applicant additional instruction in each of the subjects failed and that the airman considers the applicant ready for retesting.

[Doc. No. 4086, 30 FR 2196, Feb. 18, 1965]

§ 65.20 Applications, certificates, logbooks, reports, and records: Falsification, reproduction, or alteration.

(a) No person may make or cause to be made—

(1) Any fraudulent or intentionally false statement on any application for a certificate or rating under this part;

(2) Any fraudulent or intentionally false entry in any logbook, record, or report that is required to be kept, made, or used, to show compliance with any requirement for any certificate or rating under this part;

(3) Any reproduction, for fraudulent purpose, of any certificate or rating under this part; or

(4) Any alteration of any certificate or rating under this part.

(b) The commission by any person of an act prohibited under paragraph (a) of this section is a basis for suspending or revoking any airman certificate or rating held by that person.

[Doc. No. 4086, 30 FR 2196, Feb. 18, 1965]

§ 65.21 Change of address.

Within 30 days after any change in his permanent mailing address, the holder of a certificate issued under this part shall notify the Department of Transportation, Federal Aviation Administration, Airman Certification Branch, Post Office Box 25082, Oklahoma City, OK 73125, in writing, of his new address.

[Doc. No. 16383, 43 FR 22640, May 25, 1978]

§ 65.23 Refusal to submit to a drug or alcohol test.

(a) General. This section applies to an employee who performs a function listed in appendix I or appendix J to part 121 of this chapter directly or by contract for a part 121 certificate holder, a part 135 certificate holder, an operator as defined in § 135.1(c) of this chapter, or an air traffic control facility not operated by the FAA or the U.S. military.

(b) Refusal by the holder of a certificate issued under this part to take a drug test required under the provisions of appendix I to part 121 or an alcohol test required under the provisions of appendix J to part 121 is grounds for—

(1) Denial of an application for any certificate or rating issued under this part for a period of up to 1 year after the date of such refusal; and

(2) Suspension or revocation of any certificate or rating issued under this part.

[Amend. 65-37, 59 FR 7389, Feb. 15, 1994]

Subpart B—Air Traffic Control Tower Operators

SOURCE: Docket No. 10193, 35 FR 12326, Aug. 1, 1970, unless otherwise noted.

§ 65.31 Required certificates, and rating or qualification.

No person may act as an air traffic control tower operator at an air traffic control tower in connection with civil aircraft unless he—
§ 65.37 Skill requirements: Operating positions.

No person may act as an air traffic control tower operator at any operating position unless he has passed a practical test on—
(a) Control tower equipment and its use;
(b) Weather reporting procedures and use of reports;
(c) Notices to Airmen, and use of the Airmen’s Information Manual;
(d) Use of operational forms;
(e) Performance of noncontrol operational duties; and
(f) Each of the following procedures that is applicable to that operating position and is required by the person performing the examination:
(1) The airport, including rules, equipment, runways, taxiways, and obstructions.
(2) The terrain features, visual checkpoints, and obstructions within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for the airport.
(3) Traffic patterns and associated procedures for use of preferential runways and noise abatement.
(4) Operational agreements.
(5) The center, alternate airports, and those airways, routes, reporting points, and air navigation aids used for terminal air traffic control.
(6) Search and rescue procedures.
(7) Terminal air traffic control procedures and phraseology.
(8) Holding procedures, prescribed instrument approach, and departure procedures.
(9) Radar alignment and technical operation.
(10) The application of the prescribed radar and nonradar separation standard, as appropriate.
§ 65.39 Practical experience requirements: Facility rating.

Each applicant for a facility rating at any air traffic control tower must have satisfactorily served—

(a) As an air traffic control tower operator at that control tower without a facility rating for at least 6 months; or

(b) As an air traffic control tower operator with a facility rating at a different control tower for at least 6 months before the date he applies for the rating.

However, an applicant who is a member of an Armed Force of the United States meets the requirements of this section if he has satisfactorily served as an air traffic control tower operator for at least 6 months.


§ 65.41 Skill requirements: Facility ratings.

Each applicant for a facility rating at an air traffic control tower must have passed a practical test on each item listed in §65.37 of this part that is applicable to each operating position at the control tower at which the rating is sought.

§ 65.43 Rating privileges and exchange.

(a) The holder of a senior rating on August 31, 1970, may at any time after that date exchange his rating for a facility rating at the same air traffic control tower. However, if he does not do so before August 31, 1971, he may not thereafter exercise the privileges of his senior rating at the control tower concerned until he makes the exchange.

(b) The holder of a junior rating on August 31, 1970, may not control air traffic at any operating position at the control tower concerned, until he has met the applicable requirements of §65.37 of this part. However, before meeting those requirements he may control air traffic under the supervision, where required, of an operator with a senior rating (or facility rating) in accordance with §65.41 of this part in effect before August 31, 1970.


§ 65.45 Performance of duties.

(a) An air traffic control tower operator shall perform his duties in accordance with the limitations on his certificate and the procedures and practices prescribed in air traffic control manuals of the FAA, to provide for the safe, orderly, and expeditious flow of air traffic.

(b) An operator with a facility rating may control traffic at any operating position at the control tower at which he holds a facility rating. However, he may not issue an air traffic clearance for IFR flight without authorization from the appropriate facility exercising IFR control at that location.

(c) An operator who does not hold a facility rating for a particular control tower may act at each operating position for which he has qualified, under the supervision of an operator holding a facility rating for that control tower.


§ 65.46 Use of prohibited drugs.

(a) The following definitions apply for the purposes of this section:

(1) An employee is a person who performs an air traffic control function for an employer. For the purpose of this section, a person who performs such a function pursuant to a contract with an employer is considered to be performing that function for the employer.

(2) An “employer” means an air traffic control facility not operated by the FAA or by or under contract to the U.S. military that employs a person to perform an air traffic control function.

(b) Each employer shall provide each employee performing a function listed in appendix I to part 121 of this chapter and his or her supervisor with the training specified in that appendix. No employer may knowingly use any person to perform, nor may any person perform for an employer, either
directly or by contract, any air traffic control function while that person has a prohibited drug, as defined in appendix I to part 121 of this chapter, in his or her system.

(d) No employer shall knowingly use any person to perform, nor may any person perform for an employer, either directly or by contract, any air traffic control function if the person has a verified positive drug test result on or has refused to submit to a drug test required by appendix I to part 121 of this chapter and the person has not met the requirements of appendix I to part 121 of this chapter for returning to the performance of safety-sensitive duties.

(e) Each employer shall test each of its employees who performs any air traffic control function in accordance with appendix I to part 121 of this chapter. No employer may use any contractor to perform any air traffic control function unless that contractor tests each employee performing such a function for the employer in accordance with that appendix.

§ 65.46a Misuse of alcohol.

(a) This section applies to employees who perform air traffic control duties directly or by contract for an employer that is an air traffic control facility not operated by the FAA or the U.S. military (covered employees).

(b) Alcohol concentration. No covered employee shall report for duty or remain on duty requiring the performance of safety-sensitive functions while having an alcohol concentration of 0.04 or greater. No employer having actual knowledge that an employee has an alcohol concentration of 0.04 or greater shall permit the employee to perform or continue to perform safety-sensitive functions.

(c) On-duty use. No covered employee shall use alcohol while performing safety-sensitive functions. No employer having actual knowledge that a covered employee is using alcohol while performing safety-sensitive functions shall permit the employee to perform or continue to perform safety-sensitive functions.

(d) Pre-duty use. No covered employee shall perform air traffic control duties within 8 hours after using alcohol. No employer having actual knowledge that such an employee has used alcohol within 8 hours shall permit the employee to perform or continue to perform air traffic control duties.

(e) Use following an accident. No covered employee who has actual knowledge of an accident involving an aircraft for which he or she performed a safety-sensitive function at or near the time of the accident shall use alcohol for 8 hours following the accident, unless he or she has been given a post-accident test under appendix J to part 121 of this chapter, or the employer has determined that the employee's performance could not have contributed to the accident.

(f) Refusal to submit to a required alcohol test. No covered employee shall refuse to submit to a post-accident, random, reasonable suspicion, or follow-up alcohol test required under appendix J to part 121 of this chapter. No employer shall permit an employee who refuses to submit to such a test to perform or continue to perform safety-sensitive functions.

[Amdt. 65-37, 59 FR 7389, Feb. 15, 1994]

§ 65.46b Testing for alcohol.

(a) Each air traffic control facility not operated by the FAA or the U.S. military (hereinafter employer) must establish an alcohol misuse prevention program in accordance with the provisions of appendix J to part 121 of this chapter.

(b) No employer shall use any person who meets the definition of covered employee in appendix J to part 121 to perform a safety-sensitive function listed in that appendix unless such person is subject to testing for alcohol misuse in accordance with the provisions of appendix J.

[Amdt. 65-37, 59 FR 7389, Feb. 15, 1994]

§ 65.47 Maximum hours.

Except in an emergency, a certificated air traffic control tower operator must be relieved of all duties for at least 24 consecutive hours at least once during each 7 consecutive days. Such
§ 65.49 General operating rules.

(a) Except for a person employed by the FAA or employed by, or on active duty with, the Department of the Air Force, Army, or Navy, or the Coast Guard, no person may act as an air traffic control tower operator under a certificate issued to him or her under this part unless he or she has in his or her personal possession an appropriate current medical certificate issued under part 67 of this chapter.

(b) Each person holding an air traffic control tower operator certificate shall keep it readily available when performing duties in an air traffic control tower, and shall present that certificate or his medical certificate or both for inspection upon the request of the Administrator or an authorized representative of the National Transportation Safety Board, or of any Federal, State, or local law enforcement officer.

(c) A certificated air traffic control tower operator who does not hold a facility rating for a particular control tower may not act at any operating position at the control tower concerned unless there is maintained at that control tower, readily available to persons named in paragraph (b) of this section, a current record of the operating positions at which he has qualified.

(d) An air traffic control tower operator may not perform duties under his certificate during any period of known physical deficiency that would make him unable to meet the physical requirements for his current medical certificate. However, if the deficiency is temporary, he may perform duties that are not affected by it whenever another certificated and qualified operator is present and on duty.

(e) A certificated air traffic control tower operator may not control air traffic with equipment that the Administrator has found to be inadequate.

(f) The holder of an air traffic control tower operator certificate, or an applicant for one, shall, upon the reasonable request of the Administrator, cooperate fully in any test that is made of him.


§ 65.50 Currency requirements.

The holder of an air traffic control tower operator certificate may not perform any duties under that certificate unless—

(a) He has served for at least three of the preceding 6 months as an air traffic control tower operator at the control tower to which his facility rating applies, or at the operating positions for which he has qualified; or

(b) He has shown that he meets the requirements for his certificate and facility rating at the control tower concerned, or for operating at positions for which he has previously qualified.

Subpart C—Aircraft Dispatchers

§ 65.51 Certificate required.

(a) No person may serve as an aircraft dispatcher (exercising responsibility with the pilot in command in the operational control of a flight) in connection with any civil aircraft in air commerce unless he has in his personal possession a current aircraft dispatcher certificate issued under this subpart.

(b) Each person who holds an aircraft dispatcher certificate shall present it for inspection upon the request of the Administrator or an authorized representative of the National Transportation Safety Board, or of any Federal, State, or local law enforcement officer.


§ 65.53 Eligibility requirements: General.

To be eligible for an aircraft dispatcher certificate, a person must—

(a) Be at least 23 years of age;

(b) Be able to read, speak, and understand the English language, or have an
§ 65.55 Knowledge requirements.
(a) An applicant for an aircraft dispatcher certificate must pass a written test on—
(1) The regulations of this chapter that apply to the duties of an aircraft dispatcher;
(2) The general system of collecting and disseminating weather information;
(3) Interpreting aviation weather reports, including abbreviations and symbols, as prescribed in “National Weather Service Federal Meteorological Handbook No. 1,” as amended;
(4) The fundamentals of meteorology as applied to aircraft operations, particularly as to—
(i) Surface and upper air weather maps and general characteristics of air masses, pressure systems, and frontal systems, including their symbols and nomenclature;
(ii) Cloud forms and their significance; and
(iii) Icing, turbulence, thunderstorms, fog and low ceilings, winds aloft, pressure pattern flying, the influence of terrain on meteorological conditions, and general principles of forecasting and analysis;
(5) Principles of aircraft navigation with particular respect to instrument operation and procedures;
(6) Communications facilities and procedures;
(7) Air navigation facilities and procedures; and
(8) Air traffic control procedures.
(b) A report of the test is sent to the applicant. A passing grade is evidence, for a period of 24 months after the date the test is given, that the applicant has complied with this section.

§ 65.57 Experience requirements.
An applicant for an aircraft dispatcher certificate must present documentary evidence satisfactory to the Administrator that he has the experience prescribed in any one of the following paragraphs:
(a) A total of at least 2 of the 3 years before the date he applies, in scheduled air carrier operations, scheduled military aviation operations, or any other aircraft operations that the Administrator finds provides equivalent experience—
(1) As a pilot member of a flight crew;
(2) As a flight radio operator or ground radio operator;
(3) As a flight navigator;
(4) As a meteorologist;
(5) Performing the duties of an aircraft dispatcher or his assistant; or
(6) Performing other duties that the Administrator finds provide equivalent experience.
(b) A total of at least 2 of the 3 years before the date he applies, as an air route traffic controller or a certificated air-traffic control-tower operator.
(c) A total of at least 1 of the 2 years before the date he applies, as an assistant in dispatching scheduled air carrier aircraft performing the duties of an aircraft dispatcher under the direct supervision of a certificated dispatcher.
(d) Within 90 days before the date he applies, successful completion of a course of instruction approved by the Administrator as adequate for the training of an aircraft dispatcher.
An applicant is entitled to credit any combination of experience in paragraph (a), or paragraphs (a) and (b), of this section, if the aggregate of that experience is at least 2 years.

§ 65.59 Skill requirements.
An applicant for an aircraft dispatcher certificate must pass a practical test—
(a) With respect to any one type of large aircraft used in air carrier operations, on—
(1) Weight and balance limitations;
(2) Performance operating limitations;
(3) Using cruise control charts;
(4) Fuel and oil capacities and rates of consumption; and
(5) Using the operations manual;
(b) On the characteristics of air routes and airports with particular reference to—
§ 65.61 Aircraft dispatcher courses.

An applicant for approval of an aircraft dispatcher course shall submit a letter to the Administrator requesting approval, and shall also submit three copies of the course outline, a description of his equipment and facilities and a list of the instructors and their qualifications. Requirements for the course and the outline are set forth in appendix A to this part.

Subpart D—Mechanics

§ 65.71 Eligibility requirements: General.

(a) To be eligible for a mechanic certificate and associated ratings, a person must—
(1) Be at least 18 years of age;
(2) Be able to read, write, speak, and understand the English language, or in the case of an applicant who does not meet this requirement and who is employed outside of the United States by a U.S. air carrier, have his certificate endorsed “Valid only outside the United States”;
(3) Have passed all of the prescribed tests within a period of 24 months; and
(4) Comply with the sections of this subpart that apply to the rating he seeks.

(b) A certificated mechanic who applies for an additional rating must meet the requirements of §65.77 and, within a period of 24 months, pass the tests prescribed by §§65.75 and 65.79 for the additional rating sought.


§ 65.73 Ratings.

(a) The following ratings are issued under this subpart:
(1) Airframe.
(2) Powerplant.

(b) A mechanic certificate with an aircraft or aircraft engine rating, or both, that was issued before, and was valid on, June 15, 1952, is equal to a mechanic certificate with an airframe or powerplant rating, or both, as the case may be, and may be exchanged for such a corresponding certificate and rating or ratings.

§ 65.75 Knowledge requirements.

(a) Each applicant for a mechanic certificate or rating must, after meeting the applicable experience requirements of §65.77, pass a written test covering the construction and maintenance of aircraft appropriate to the rating he seeks, the regulations in this subpart, and the applicable provisions of parts 43 and 91 of this chapter. The basic principles covering the installation and maintenance of propellers are included in the powerplant test.

(b) The applicant must pass each section of the test before applying for the oral and practical tests prescribed by §65.79. A report of the written test is sent to the applicant.


§ 65.77 Experience requirements.

Each applicant for a mechanic certificate or rating must present either an appropriate graduation certificate or certificate of completion from a certificated certificated cated aviation maintenance technician school or documentary evidence, satisfactory to the Administrator, of—

(a) At least 18 months of practical experience with the procedures, practices, materials, tools, machine tools, and equipment generally used in constructing, maintaining, or altering airframes, or powerplants appropriate to the rating sought; or

(b) At least 30 months of practical experience concurrently performing the
§ 65.87 Powerplant rating; additional privileges.

A certificated mechanic with a powerplant rating may approve and return to service a powerplant or propeller or
any related part or appliance, after he has performed, supervised, or inspected its maintenance or alteration (excluding major repairs and major alterations). In addition, he may perform the 100-hour inspection required by part 91 of this chapter on a powerplant or propeller, or any part thereof, and approve and return it to service.


§ 65.89 Display of certificate.

Each person who holds a mechanic certificate shall keep it within the immediate area where he normally exercises the privileges of the certificate and shall present it for inspection upon the request of the Administrator or an authorized representative of the National Transportation Safety Board, or of any Federal, State, or local law enforcement officer.


§ 65.91 Inspection authorization.

(a) An application for an inspection authorization is made on a form and in a manner prescribed by the Administrator.

(b) An applicant who meets the requirements of this section is entitled to an inspection authorization.

(c) To be eligible for an inspection authorization, an applicant must—

(1) Hold a currently effective mechanic certificate with both an airframe rating and a powerplant rating, each of which is currently effective and has been in effect for a total of at least 3 years;

(2) Have been actively engaged, for at least the 2-year period before the date he applies, in maintaining aircraft certificated and maintained in accordance with this chapter;

(3) Have a fixed base of operations at which he may be located in person or by telephone during a normal working week but it need not be the place where he will exercise his inspection authority;

(4) Have available to him the equipment, facilities, and inspection data necessary to properly inspect airframes, powerplants, propellers, or any related part or appliance; and

(5) Pass a written test on his ability to inspect according to safety standards for returning aircraft to service after major repairs and major alterations and annual and progressive inspections performed under part 43 of this chapter.

An applicant who fails the test prescribed in paragraph (c)(5) of this section may not apply for retesting until at least 90 days after the date he failed the test.


§ 65.92 Inspection authorization: Duration.

(a) Each inspection authorization expires on March 31 of each year. However, the holder may exercise the privileges of that authorization only while he holds a currently effective mechanic certificate with both a currently effective airframe rating and a currently effective powerplant rating.

(b) An inspection authorization ceases to be effective whenever any of the following occurs:

(1) The authorization is surrendered, suspended, or revoked.

(2) The holder no longer has a fixed base of operation.

(3) The holder no longer has the equipment, facilities, and inspection data required by §65.91(c) (3) and (4) for issuance of his authorization.

(c) The holder of an inspection authorization that is suspended or revoked shall, upon the Administrator’s request, return it to the Administrator.

[Doc. No. 12537, 42 FR 46279, Sept. 15, 1977]

§ 65.93 Inspection authorization: Renewal.

(a) To be eligible for renewal of an inspection authorization for a 1-year period an applicant must present evidence annually, during the month of March, at an FAA Flight Standards District Office or an International Field Office that the applicant still meets the requirements of §65.91(c) (1) through (4) and must show that, during the current period that the applicant
Federal Aviation Administration, DOT

§ 65.101 Eligibility requirements: General.

(a) To be eligible for a repairman certificate a person must—

(1) Be at least 18 years of age;

(2) Be specially qualified to perform maintenance on aircraft or components thereof, appropriate to the job for which he is employed;

(3) Be employed for a specific job requiring those special qualifications by a certificated repair station, or by a certificated commercial operator or certificated air carrier, that is required by its operating certificate or approved operations specifications to provide a continuous airworthiness maintenance program according to its maintenance manuals;

(4) Be recommended for certification by his employer, to the satisfaction of the Administrator, as able to satisfactorily maintain aircraft or components, appropriate to the job for which he is employed;

(5) Have either—

(i) At least 18 months of practical experience in the procedures, practices, inspection methods, materials, tools, machine tools, and equipment generally used in the maintenance duties of the specific job for which the person is to be employed and certificated; or

(ii) Completed formal training that is acceptable to the Administrator and is

§ 65.95 Inspection authorization: Privileges and limitations.

(a) The holder of an inspection authorization may—

(1) Inspect and approve for return to service any aircraft or related part or appliance (except any aircraft maintained in accordance with a continuous airworthiness program under part 121 or 127 of this chapter) after a major repair or major alteration to it in accordance with part 43 [New] of this chapter, if the work was done in accordance with technical data approved by the Administrator; and

(2) Perform an annual, or perform or supervise a progressive inspection according to §§ 43.13 and 43.15 of this chapter.

(b) When he exercises the privileges of an inspection authorization the holder shall keep it available for inspection by the aircraft owner, the mechanic submitting the aircraft, repair, or alteration for approval (if any), and shall present it upon the request of the Administrator or an authorized representative of the National Transportation Safety Board, or of any Federal, State, or local law enforcement officer.

(c) If the holder of an inspection authorization changes his fixed base of operation, he may not exercise the privileges of the authorization until he has notified the FAA Flight Standards District Office or International Field Office for the area in which the new base is located, in writing, of the change.


Subpart E—Repairmen

§ 65.101 Eligibility requirements: General.

(a) To be eligible for a repairman certificate a person must—

(1) Be at least 18 years of age;

(2) Be specially qualified to perform maintenance on aircraft or components thereof, appropriate to the job for which he is employed;

(3) Be employed for a specific job requiring those special qualifications by a certificated repair station, or by a certificated commercial operator or certificated air carrier, that is required by its operating certificate or approved operations specifications to provide a continuous airworthiness maintenance program according to its maintenance manuals;

(4) Be recommended for certification by his employer, to the satisfaction of the Administrator, as able to satisfactorily maintain aircraft or components, appropriate to the job for which he is employed;

(5) Have either—

(i) At least 18 months of practical experience in the procedures, practices, inspection methods, materials, tools, machine tools, and equipment generally used in the maintenance duties of the specific job for which the person is to be employed and certificated; or

(ii) Completed formal training that is acceptable to the Administrator and is
§ 65.103 Repairman certificate: Privileges and limitations.

(a) A certificated repairman may perform or supervise the maintenance, preventive maintenance, or alteration of aircraft or aircraft components appropriate to the job for which the repairman was employed and certificated, but only in connection with duties for the certificate holder by whom the repairman was employed and recommended.

(b) A certificated repairman may not perform or supervise duties under the repairman certificate unless the repairman understands the current instructions of the certificate holder by whom the repairman is employed and the manufacturer’s instructions for continued airworthiness relating to the specific operations concerned.

§ 65.104 Repairman certificate—experimental aircraft builder—Eligibility, privileges and limitations.

(a) To be eligible for a repairman certificate (experimental aircraft builder), an individual must—

(1) Be at least 18 years of age;

(2) Be the primary builder of the aircraft to which the privileges of the certificate are applicable;

(3) Show to the satisfaction of the Administrator that the individual has the requisite skill to determine whether the aircraft is in a condition for safe operations; and

(4) Be a citizen of the United States or an individual citizen of a foreign country who has lawfully been admitted for permanent residence in the United States.

(b) The holder of a repairman certificate (experimental aircraft builder) may perform condition inspections on the aircraft constructed by the holder in accordance with the operating limitations of that aircraft.

(c) Section 65.103 does not apply to the holder of a repairman certificate (experimental aircraft builder) while performing under that certificate.

§ 65.105 Display of certificate.

Each person who holds a repairman certificate shall keep it within the immediate area where he normally exercises the privileges of the certificate and shall present it for inspection upon the request of the Administrator or an authorized representative of the National Transportation Safety Board, or of any Federal, State, or local law enforcement officer.

Subpart F—Parachute Riggers

§ 65.111 Certificate required.

(a) No person may pack, maintain, or alter any personnel-carrying parachute intended for emergency use in connection with civil aircraft of the United States (including the auxiliary parachute of a dual parachute pack to be used for intentional jumping) unless he holds an appropriate current certificate and type rating issued under this subpart and complies with §§ 65.127 through 65.133.

(b) No person may pack, maintain, or alter any main parachute of a dual parachute pack to be used for intentional jumping in connection with civil aircraft of the United States unless he has an appropriate current certificate issued under this subpart. However, a person who does not hold such a certificate may pack the main parachute of a
dual parachute pack that is to be used by him for intentional jumping.

(c) Each person who holds a parachute rigger certificate shall present it for inspection upon the request of the Administrator or an authorized representative of the National Transportation Safety Board, or of any Federal, State, or local law enforcement officer.

(d) The following parachute rigger certificates are issued under this part:

1. Senior parachute rigger.
2. Master parachute rigger.

(e) Sections 65.127 through 65.133 do not apply to parachutes packed, maintained, or altered for the use of the armed forces.

§ 65.113 Eligibility requirements: General.

(a) To be eligible for a parachute rigger certificate, a person must—

1. Be at least 18 years of age;
2. Be able to read, write, speak, and understand the English language, or, in the case of a citizen of Puerto Rico, or a person who is employed outside of the United States by a U.S. air carrier, and who does not meet this requirement, be issued a certificate that is valid only in Puerto Rico or while he is employed outside of the United States by that air carrier, as the case may be; and
3. Comply with the sections of this subpart that apply to the certificate and type rating he seeks.

(b) Except for a master parachute rigger certificate, a parachute rigger certificate that was issued before, and was valid on, October 31, 1962, is equal to a senior parachute rigger certificate, and may be exchanged for such a corresponding certificate.

§ 65.115 Senior parachute rigger certificate: Experience, knowledge, and skill requirements.

Except as provided in §65.117, an applicant for a senior parachute rigger certificate must—

(a) Present evidence satisfactory to the Administrator that he has had at least 3 years of experience as a parachute rigger and has satisfactorily packed at least 100 parachutes of each of two types in common use, in accordance with the manufacturer’s instructions and under the supervision of a certificated parachute rigger holding a rating for that type or a person holding an appropriate military rating;

(b) Pass a written test, with respect to parachutes in common use, on—

1. Their construction, packing, and maintenance;
2. The manufacturer’s instructions;
3. The regulations of this subpart; and
(c) Pass an oral and practical test showing his ability to pack and maintain at least one type of parachute in common use, appropriate to the type rating he seeks.

§ 65.117 Military riggers or former military riggers: Special certification rule.

In place of the procedure in §65.115, an applicant for a senior parachute rigger certificate is entitled to it if he passes a written test on the regulations of this subpart and presents satisfactory documentary evidence that he—

(a) Is a member or civilian employee of an Armed Force of the United States, is a civilian employee of a regular armed force of a foreign country, or has, within the 12 months before he applies, been honorably discharged or released from any status covered by this paragraph;

(b) Is serving, or has served within the 12 months before he applies, as a parachute rigger for such an Armed Force; and

(c) Has the experience required by §65.115(a).

§ 65.119 Master parachute rigger certificate: Experience, knowledge, and skill requirements.

An applicant for a master parachute rigger certificate must meet the following requirements:

(a) Present evidence satisfactory to the Administrator that he has had at least 3 years of experience as a parachute rigger and has satisfactorily packed at least 100 parachutes of each of two types in common use, in accordance with the manufacturer’s instructions—

1. While a certificated and appropriately rated senior parachute rigger; or
§ 65.121  Type ratings.

(a) The following type ratings are issued under this subpart:

(1) Seat.
(2) Back.
(3) Chest.
(4) Lap.

(b) The holder of a senior parachute rigger certificate who qualifies for a master parachute rigger certificate is entitled to have placed on his master parachute rigger certificate the ratings that were on his senior parachute rigger certificate.

§ 65.123 Additional type ratings: Requirements.

A certificated parachute rigger who applies for an additional type rating must—

(a) Present evidence satisfactory to the Administrator that he has packed at least 20 parachutes of the type for which he seeks a rating, in accordance with the manufacturer's instructions and under the supervision of a certificated parachute rigger holding a rating for that type or a person holding an appropriate military rating; and

(b) Pass a practical test, to the satisfaction of the Administrator, showing his ability to pack and maintain the type of parachute for which he seeks a rating.


§ 65.125 Certificates: Privileges.

(a) A certificated senior parachute rigger may—

(1) Pack or maintain (except for major repair) any type of parachute for which he is rated; and

(2) Supervise other persons in packing any type of parachute for which he is rated.

(b) A certificated master parachute rigger may—

(1) Pack, maintain, or alter any type of parachute for which he is rated; and

(2) Supervise other persons in packing, maintaining, or altering any type of parachute for which he is rated.

(c) A certificated parachute rigger need not comply with §§ 65.127 through 65.133 (relating to facilities, equipment, performance standards, records, recent experience, and seal) in packing, maintaining, or altering (if authorized) the main parachute of a dual parachute pack to be used for intentional jumping.


§ 65.127 Facilities and equipment.

No certificated parachute rigger may exercise the privileges of his certificate unless he has at least the following facilities and equipment available to him:

(a) A smooth top table at least three feet wide by 40 feet long.

(b) Suitable housing that is adequately heated, lighted, and ventilated for drying and airing parachutes.

(c) Enough packing tools and other equipment to pack and maintain the types of parachutes that he services.

(d) Adequate housing facilities to perform his duties and to protect his tools and equipment.

§ 65.129 Performance standards.

No certificated parachute rigger may—
(a) Pack, maintain, or alter any parachute unless he is rated for that type;
(b) Pack a parachute that is not safe for emergency use;
(c) Pack a parachute that has not been thoroughly dried and aired;
(d) Alter a parachute in a manner that is not specifically authorized by the Administrator or the manufacturer;
(e) Pack, maintain, or alter a parachute in any manner that deviates from procedures approved by the Administrator or the manufacturer of the parachute; or
(f) Exercise the privileges of his certificate and type rating unless he understands the current manufacturer's instructions for the operation involved and has—
(1) Performed duties under his certificate for at least 90 days within the preceding 12 months; or
(2) Shown the Administrator that he is able to perform those duties.

§ 65.131 Records.

(a) Each certificated parachute rigger shall keep a record of the packing, maintenance, and alteration of parachutes performed or supervised by him. He shall keep in that record, with respect to each parachute worked on, a statement of—
(1) Its type and make;
(2) Its serial number;
(3) The name and address of its owner;
(4) The kind and extent of the work performed;
(5) The date when and place where the work was performed; and
(6) The results of any drop tests made with it.
(b) Each person who makes a record under paragraph (a) of this section shall keep it for at least 2 years after the date it is made.

(c) Each certificated parachute rigger who packs a parachute shall write, on the parachute packing record attached to the parachute, the date and place of the packing and a notation of any defects he finds on inspection. He shall sign that record with his name and the number of his certificate.

§ 65.133 Seal.

Each certificated parachute rigger must have a seal with an identifying mark prescribed by the Administrator, and a seal press. After packing a parachute he shall seal the pack with his seal in accordance with the manufacturer's recommendation for that type of parachute.

Appendix A to Part 65—Aircraft Dispatcher Courses

(a) Training course outline. It is not mandatory that the training course outline have the subject headings arranged exactly as listed in the following example. Any arrangement of headings and subheadings will be satisfactory provided all the subjects listed in this section are included. Each general subject of the outline shall be broken down, in detail, showing the items to be covered. Additional subjects, especially those which are not closely associated with the training of aircraft dispatchers, may be listed so long as the hourly requirements devoted to the subjects are not included as a part of the basic minimum hours.

(b) Format of the training outline and course requirements. The course outline submitted for approval must be in looseleaf form, must include a table of contents and minimum coverage of the course material, and must include the following:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Classroom hours</th>
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<tbody>
<tr>
<td>Federal Aviation Regulations</td>
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<tr>
<td>Subpart C of part 65 of this chapter.</td>
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<tr>
<td>Part 29, 91, 103, and 121 of this chapter.</td>
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<tr>
<td>Part 430 of the Regulations of the National Transportation Safety Board, “Rules Pertaining to Aircraft Accidents, Incidents, Overdue Aircraft, and Safety Investigation”, on sale at the Government Printing Office</td>
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<tr>
<td>Meteorology</td>
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Subject | Classroom hours
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Basic properties of the atmosphere: Composition, Density, Measurement, General circulation, Solar heating. | 0
Clouds: Formation, Condensation, Precipitation, Use of cloud knowledge in forecasting. Stability and instability. | 0
Air mass analysis: Classification, Flying conditions to be encountered, Use of air mass knowledge in forecasting. | 0
Analysis of fronts: Structure and characteristics, Cloud sequences in fronts, Establishing position of front by cloud types, Fronts in North America and seasonal variations, Flying weather in fronts, Cyclones and anticyclones. | 0
Fog: Types, Cause and formation. | 0
Ice: Type, Cause and formation. | 0
Thunderstorms, hurricanes, tornadoes: Causes, Methods of forecasting, Structure and complexity of internal winds, Hail, its cause and formation. | 0
Turbulence: Determining the smooth level of flights, Cause. | 0
Interpreting weather data: Weather sequences and symbols, Weather map symbols, Drawing a weather map, Reading a weather map, Upper-level charts, Adiabatic charts, Winds-aloft charts. Instruments used to gather and record the weather. | 0
Weather forecasting: Extrapolation, Movement of fronts and air masses, Isobars. Barometric tendency, Application of weather knowledge: Planning a flight. | 0
Navigation | 30

Subject | Classroom hours
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Aircraft | 15
Radio-telephone rules and regulations, FCC rules and regulations. Company communications: Air to ground radio communications and procedures, Point to point communications and procedures. Equipment air to ground and point to point. FAA communications: Air to ground radio communications and procedures, Point to point communications and procedures, Equipment air to ground and point to point. Simulated instrument flight | 10

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ever, the ratio of students per instructor needs and facilities of the applicant. How-
study shall be determined according to the tors available for conducting the course of
of aircraft dispatching.
student the theoretical and practical aspects aids of a quantity which will provide for each
wall maps, charts, blackboards, and visual
ment flight, navigation, and meteorology,
vices for the teaching of simulated instru-
heated, lighted, and ventilated.
students scheduled for attendance at any one
to accommodate the largest number of stu-
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<td>Support traffic control procedures and equip-</td>
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<td>Practical Dispatching</td>
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<td>Safety.</td>
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<td>Economic advantage.</td>
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<td>Crew.</td>
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<td>The alternate plan.</td>
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<td>(2) In-flight:</td>
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</tr>
<tr>
<td>Position report.</td>
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<tr>
<td>Altimeter settings.</td>
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<tr>
<td>Weather reports.</td>
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<tr>
<td>Changes in forecast.</td>
<td></td>
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<tr>
<td>Changing instrument altitude.</td>
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<tr>
<td>Changing from VFR to IFR.</td>
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<tr>
<td>Additional clearances.</td>
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<tr>
<td>Emergency procedures.</td>
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<tr>
<td>(3) Post-flight:</td>
<td></td>
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<tr>
<td>Arrival report.</td>
<td></td>
</tr>
<tr>
<td>Differences between the forecasted and actual weather encountered for subsequent flights.</td>
<td></td>
</tr>
</tbody>
</table>

(c) Facilities, equipment, and material. An applicant for authority to operate an ap-
proved aircraft dispatcher course of study must have the following facilities, equip-
ment, and materials:

(1) Facilities. Suitable classrooms, adequate to accommodate the largest number of stu-
dents scheduled for attendance at any one time. Such classrooms shall be properly heated, lighted, and ventilated.

(2) Equipment and materials. Suitable de-

vices for the teaching of simulated instru-
ment flight, navigation, and meteorology,
acceptable textbooks, operations manuals, wall maps, charts, blackboards, and visual
aids of a quantity which will provide for each student the theoretical and practical aspects of aircraft dispatching.

(d) Instructors. (1) The number of instruc-
tors available for conducting the course of study shall be determined according to the needs and facilities of the applicant. How-
ever, the ratio of students per instructor
may not exceed 25 students for one instruc-
tor.

(2) At least one instructor who possesses a currently effective aircraft dispatcher cer-
tificate must be available for coordination of the training course instruction.

(e) Revision of training course. Requests for revision of course outlines, facilities, and equipment shall be accomplished in the same manner established for securing approval of the original course of study. Revisions must be submitted in such form that an entire page or pages of the approved outline can be removed and replaced by the revision.

The list of instructors may be revised at any time without request for approval, pro-
vided the minimum requirements are main-
tained and the local inspector is notified.

(f) Credit for previous experience or training. A course operator may evaluate an entrant’s previous experience or training and where the training or experience is provable and comparable to portions of the approved course curriculum, may, as each individual case warrants, allow credit for such, com-
mensurate with accepted training practices. Where credit is allowed, the basis for allow-
ance and the total hours credited must be in-
corporated as a part of the student’s records, provided for in paragraph (g) of this Appen-
dix.

(g) Student records and reports. Approval of a course may not be continued in effect un-
less the course operator keeps an accurate record of each student, including a chrono-
logical log of all instructions, subjects cov-
ered, and course examinations and grades, and unless he prepares and transmits to the FAA not later than January 31 of each year, a report containing the following information:

(1) The names of all students graduated, together with school grades for aircraft dis-
patcher courses.

(2) The names of all students failed or dropped, together with school grades and reasons for dropping.

(h) Quality of instruction. Approval of a course may not be continued in effect unless at least 80 percent of the students who apply within 90 days after graduation are able to qualify on the first attempt for certification as aircraft dispatchers.

(i) Statement of graduation. Each student who successfully completes the approved air-
craft dispatcher course shall be given a statement of graduation.

(j) Change of ownership, name, or location—
(1) Change of ownership. Approval of an air-
craft dispatcher course may not be continued in effect after the course has changed owner-
ship. The new owner must obtain a new ap-
proval by following the procedures pre-
scribed for original approval.

(2) Change in name. An approved course changed in name but not changed in owner-
ship remains valid if the change is reported

by the approved course operator to the local inspector who will issue a letter of approval under the new name.

(3) Change in location. An approved course remains in effect even though the approved course operator changes location if the change is reported without delay by the operator to the local inspector who will inspect the facilities to be used in the new location and, if they are found to be adequate, issue a letter of approval showing the new location.

(k) Cancellation of approval. (1) Failure to meet or maintain any of the standards set forth herein for the approval or operation of an approved aircraft dispatcher course is considered to be a sufficient reason for discontinuing approval of the course.

(2) If an operator desires voluntary cancellation of his approved course, he shall send a letter requesting cancellation to the Administrator of the Federal Aviation Administration through the local inspector.

(1) Duration. The authority to operate an approved aircraft dispatcher course of study expires 24 months after the last day of the month of issuance.

(m) Renewal. Application for renewal of an approved aircraft dispatcher course shall be made by letter addressed to the Administrator of the Federal Aviation Administration through the local inspector.


**PART 67—MEDICAL STANDARDS AND CERTIFICATION**

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67.7 Access to the National Driver Register.

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Authority: 49 U.S.C. 106(g), 40113, 44701-44703, 44707, 44709-44711, 45102-45103, 45301-45303.

Source: Docket No. 27940, 61 FR 11256, Mar. 19, 1996, unless otherwise noted.

**Subpart A—General**

§ 67.1 Applicability.

This part prescribes the medical standards and certification procedures for issuing medical certificates for airmen and for remaining eligible for a medical certificate.

§ 67.3 Issue.

Except as provided in §67.5, a person who meets the medical standards prescribed in this part, based on medical examination and evaluation of the person's history and condition, is entitled to an appropriate medical certificate.
§ 67.7 Access to the National Driver Register.

At the time of application for a certificate issued under this part, each person who applies for a medical certificate shall execute an express consent form authorizing the Administrator to request the chief driver licensing official of any state designated by the Administrator to transmit information contained in the National Driver Register about the person to the Administrator. The Administrator shall make information received from the National Driver Register, if any, available on request to the person for review and written comment.

Subpart B—First-Class Airman Medical Certificate

§ 67.101 Eligibility.

To be eligible for a first-class airman medical certificate, and to remain eligible for a first-class airman medical certificate, a person must meet the requirements of this subpart.

§ 67.103 Eye.

Eye standards for a first-class airman medical certificate are:

(a) Distant visual acuity of 20/20 or better in each eye separately, with or without corrective lenses. If corrective lenses (spectacles or contact lenses) are necessary for 20/20 vision, the person may be eligible only on the condition that corrective lenses are worn while exercising the privileges of an airman certificate.

(b) Near vision of 20/40 or better, Snellen equivalent, at 16 inches in each eye separately, with or without corrective lenses. If age 50 or older, near vision of 20/40 or better, Snellen equivalent, at both 16 inches and 32 inches in each eye separately, with or without corrective lenses.

(c) Ability to perceive those colors necessary for the safe performance of airman duties.

(d) Normal fields of vision.

(e) No acute or chronic pathological condition of either eye or adnexa that interferes with the proper function of an eye, that may reasonably be expected to progress to that degree, or that may reasonably be expected to be aggravated by flying.

(f) Bifoveal fixation and vergence-phoria relationship sufficient to prevent a break in fusion under conditions that may reasonably be expected to occur in performing airman duties. Tests for the factors named in this paragraph are not required except for persons found to have more than 1 prism diopter of hyperphoria, 6 prism dipters of esophoria, or 6 prism dipters of exophoria. If any of these values are exceeded, the Federal Air Surgeon may require the person to be examined by a qualified eye specialist to determine if there is bifoveal fixation and an adequate vergence-phoria relationship. However, if otherwise eligible, the person is issued a medical certificate pending the results of the examination.

§ 67.105 Ear, nose, throat, and equilibrium.

Ear, nose, throat, and equilibrium standards for a first-class airman medical certificate are:

(a) The person shall demonstrate acceptable hearing by at least one of the following tests:

   (1) Demonstrate an ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 6 feet from the examiner, with the back turned to the examiner.

   (2) Demonstrate an acceptable understanding of speech as determined by audiometric speech discrimination testing to a score of at least 70 percent obtained in one ear or in a sound field environment.

   (3) Provide acceptable results of pure tone audiometric testing of unaided hearing acuity according to the following table of worst acceptable thresholds, using the calibration standards of the American National Standards Institute, 1969 (11 West 42d Street, New York, NY 10036):

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>3000 Hz</th>
</tr>
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<tbody>
<tr>
<td>Better ear (Db)</td>
<td></td>
<td>35</td>
<td>30</td>
<td>30</td>
</tr>
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<td>Poorer ear (Db)</td>
<td></td>
<td>35</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

   (b) No disease or condition of the middle or internal ear, nose, oral cavity, pharynx, or larynx that—
§ 67.107 Mental.

Mental standards for a first-class airman medical certificate are:

1. No established medical history or clinical diagnosis of any of the following:
   (1) A personality disorder that is severe enough to have repeatedly manifested itself by overt acts.
   (2) A psychosis. As used in this section, “psychosis” refers to a mental disorder in which:
      (i) The individual has manifested delusions, hallucinations, grossly bizarre or disorganized behavior, or other commonly accepted symptoms of this condition; or
      (ii) The individual may reasonably be expected to manifest delusions, hallucinations, grossly bizarre or disorganized behavior, or other commonly accepted symptoms of this condition.
   (3) A bipolar disorder.
   (4) Substance dependence, except where there is established clinical evidence, satisfactory to the Federal Air Surgeon, of recovery, including sustained total abstinence from the substance(s) for not less than the preceding 2 years. As used in this section—
      (i) “Substance” includes: Alcohol; other sedatives and hypnotics; anxiolytics; opioids; central nervous system stimulants such as cocaine, amphetamines, and similarly acting sympathomimetics; hallucinogens; phencyclidine or similarly acting arylcyclohexylamines; cannabis; inhalants; and other psychoactive drugs and chemicals; and
      (ii) “Substance dependence” means a condition in which a person is dependent on a substance, other than tobacco or ordinary xanthine-containing (e.g., caffeine) beverages, as evidenced by—
         (A) Increased tolerance;
         (B) Manifestation of withdrawal symptoms;
         (C) Impaired control of use; or
         (D) Continued use despite damage to physical health or impairment of social, personal, or occupational functioning.

2. No substance abuse within the preceding 2 years defined as:
   (1) Use of a substance in a situation in which that use was physically hazardous, if there has been at any other time an instance of the use of a substance also in a situation in which that use was physically hazardous;
   (2) A verified positive drug test result acquired under an anti-drug program or internal program of the U.S. Department of Transportation or any other Administration within the U.S. Department of Transportation; or
   (3) Misuse of a substance that the Federal Air Surgeon, based on case history and appropriate, qualified medical judgment relating to the substance involved, finds—
      (i) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
      (ii) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

3. No other personality disorder, neurosis, or other mental condition that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds—
   (1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
   (2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

§ 67.109 Neurologic.

Neurologic standards for a first-class airman medical certificate are:

1. No established medical history or clinical diagnosis of any of the following:
§ 67.201 Eligibility.

(1) Epilepsy;
(2) A disturbance of consciousness without satisfactory medical explanation of the cause; or
(3) A transient loss of control of nervous system function(s) without satisfactory medical explanation of the cause.

(b) No other seizure disorder, disturbance of consciousness, or neurologic condition that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds—

(1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
(2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

§ 67.111 Cardiovascular.

Cardiovascular standards for a first-class airman medical certificate are:

(a) No established medical history or clinical diagnosis of any of the following:

(1) Myocardial infarction;
(2) Angina pectoris;
(3) Coronary heart disease that has required treatment or, if untreated, that has been symptomatic or clinically significant;
(4) Cardiac valve replacement;
(5) Permanent cardiac pacemaker implantation; or
(6) Heart replacement;

(b) A person applying for first-class medical certification must demonstrate an absence of myocardial infarction and other clinically significant abnormality on electrocardiographic examination:

(1) At the first application after reaching the 35th birthday; and
(2) On an annual basis after reaching the 40th birthday.

(c) An electrocardiogram will satisfy a requirement of paragraph (b) of this section if it is dated no earlier than 60 days before the date of the application it is to accompany and was performed and transmitted according to acceptable standards and techniques.

§ 67.113 General medical condition.

The general medical standards for a first-class airman medical certificate are:

(a) No established medical history or clinical diagnosis of diabetes mellitus that requires insulin or any other hypoglycemic drug for control.

(b) No other organic, functional, or structural disease, defect, or limitation that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds—

(1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
(2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

(c) No medication or other treatment that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the medication or other treatment involved, finds—

(1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
(2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

§ 67.115 Discretionary issuance.

A person who does not meet the provisions of §§ 67.103 through 67.113 may apply for the discretionary issuance of a certificate under §§ 67.401.

Subpart C—Second-Class Airman Medical Certificate

§ 67.201 Eligibility.

To be eligible for a second-class airman medical certificate, and to remain eligible for a second-class airman medical certificate, a person must meet the requirements of this subpart.
§ 67.203 Eye.

Eye standards for a second-class airman medical certificate are:

(a) Distant visual acuity of 20/20 or better in each eye separately, with or without corrective lenses. If corrective lenses (spectacles or contact lenses) are necessary for 20/20 vision, the person may be eligible only on the condition that corrective lenses are worn while exercising the privileges of an airman certificate.

(b) Near vision of 20/40 or better, Snellen equivalent, at 16 inches in each eye separately, with or without corrective lenses. If age 50 or older, near vision of 20/40 or better, Snellen equivalent, at both 16 inches and 32 inches in each eye separately, with or without corrective lenses.

(c) Ability to perceive those colors necessary for the safe performance of airman duties.

(d) Normal fields of vision.

(e) No acute or chronic pathological condition of either eye or adnexa that interferes with the proper function of an eye, that may reasonably be expected to progress to that degree, or that may reasonably be expected to be aggravated by flying.

(f) Bifoveal fixation and vergence-phoria relationship sufficient to prevent a break in fusion under conditions that may reasonably be expected to occur in performing airman duties. Tests for the factors named in this paragraph are not required except for persons found to have more than 1 prism diopter of hyperphoria, 6 prism diopters of esophoria, or 6 prism diopters of exophoria. If any of these values are exceeded, the Federal Air Surgeon may require the person to be examined by a qualified eye specialist to determine if there is bifoveal fixation and an adequate vergence-phoria relationship. However, if otherwise eligible, the person is issued a medical certificate pending the results of the examination.

§ 67.205 Ear, nose, throat, and equilibrium.

Ear, nose, throat, and equilibrium standards for a second-class airman medical certificate are:

(a) The person shall demonstrate acceptable hearing by at least one of the following tests:

(1) Demonstrate an ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 6 feet from the examiner, with the back turned to the examiner.

(2) Demonstrate an acceptable understanding of speech as determined by audiometric speech discrimination testing to a score of at least 70 percent obtained in one ear or in a sound field environment.

(3) Provide acceptable results of pure tone audiometric testing of unaided hearing acuity according to the following table of worst acceptable thresholds, using the calibration standards of the American National Standards Institute, 1969:

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
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<td>Better ear (Db)</td>
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<td>30</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Poorer ear (Db)</td>
<td>35</td>
<td>50</td>
<td>50</td>
<td>60</td>
</tr>
</tbody>
</table>

(b) No disease or condition of the middle or internal ear, nose, oral cavity, pharynx, or larynx that—

(1) Interferes with, or is aggravated by, flying or may reasonably be expected to do so; or

(2) Interferes with, or may reasonably be expected to interfere with, clear and effective speech communication.

(c) No disease or condition manifested by, or that may reasonably be expected to be manifested by, vertigo or a disturbance of equilibrium.

§ 67.207 Mental.

Mental standards for a second-class airman medical certificate are:

(a) No established medical history or clinical diagnosis of any of the following:

(1) A personality disorder that is severe enough to have repeatedly manifested itself by overt acts.

(2) A psychosis. As used in this section, "psychosis" refers to a mental disorder in which:

(i) The individual has manifested delusions, hallucinations, grossly bizarre or disorganized behavior, or other commonly accepted symptoms of this condition; or
(ii) The individual may reasonably be expected to manifest delusions, hallucinations, grossly bizarre or disorganized behavior, or other commonly accepted symptoms of this condition.

(3) A bipolar disorder.

(4) Substance dependence, except where there is established clinical evidence, satisfactory to the Federal Air Surgeon, of recovery, including sustained total abstinence from the substance(s) for not less than the preceding 2 years. As used in this section—

(i) “Substance” includes: Alcohol; other sedatives and hypnotics; anxiolytics; opioids; central nervous system stimulants such as cocaine, amphetamines, and similarly acting sympathomimetics; hallucinogens; phencyclidine or similarly acting arylcyclohexylamines; cannabis; inhalants; and other psychoactive drugs and chemicals; and

(ii) “Substance dependence” means a condition in which a person is dependent on a substance, other than tobacco or ordinary xanthine-containing (e.g., caffeine) beverages, as evidenced by—

(A) Increased tolerance;
(B) Manifestation of withdrawal symptoms;
(C) Impaired control of use; or
(D) Continued use despite damage to physical health or impairment of social, personal, or occupational functioning.

(b) No substance abuse within the preceding 2 years defined as:

(1) Use of a substance in a situation in which that use was physically hazardous, if there has been at any other time an instance of the use of a substance also in a situation in which that use was physically hazardous;

(2) A verified positive drug test result acquired under an anti-drug program or internal program of the U.S. Department of Transportation or any other Administration within the U.S. Department of Transportation; or

(i) “Substance” includes: Alcohol; other sedatives and hypnotics; anxiolytics; opioids; central nervous system stimulants such as cocaine, amphetamines, and similarly acting sympathomimetics; hallucinogens; phencyclidine or similarly acting arylcyclohexylamines; cannabis; inhalants; and other psychoactive drugs and chemicals; and

(ii) “Substance dependence” means a condition in which a person is dependent on a substance, other than tobacco or ordinary xanthine-containing (e.g., caffeine) beverages, as evidenced by—

(A) Increased tolerance;
(B) Manifestation of withdrawal symptoms;
(C) Impaired control of use; or
(D) Continued use despite damage to physical health or impairment of social, personal, or occupational functioning.

(c) No other personality disorder, neurosis, or other mental condition that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds—

(1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or

(2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

§ 67.209 Neurologic.

Neurologic standards for a second-class airman medical certificate are:

(a) No established medical history or clinical diagnosis of any of the following:

(1) Epilepsy;
(2) A disturbance of consciousness without satisfactory medical explanation of the cause; or
(3) A transient loss of control of nervous system function(s) without satisfactory medical explanation of the cause;

(b) No other seizure disorder, disturbance of consciousness, or neurologic condition that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds—

(1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or

(2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.
§ 67.211 Cardiovascular.

Cardiovascular standards for a second-class medical certificate are no established medical history or clinical diagnosis of any of the following:
(a) Myocardial infarction;
(b) Angina pectoris;
(c) Coronary heart disease that has required treatment or, if untreated, that has been symptomatic or clinically significant;
(d) Cardiac valve replacement;
(e) Permanent cardiac pacemaker implantation; or
(f) Heart replacement.

§ 67.213 General medical condition.

The general medical standards for a second-class airman medical certificate are:
(a) No established medical history or clinical diagnosis of diabetes mellitus that requires insulin or any other hypoglycemic drug for control.
(b) No other organic, functional, or structural disease, defect, or limitation that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds—
   (1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
   (2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.
(c) No medication or other treatment that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the medication or other treatment involved, finds—
   (1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
   (2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

§ 67.215 Discretionary issuance.

A person who does not meet the provisions of §§ 67.203 through 67.213 may apply for the discretionary issuance of a certificate under § 67.401.

Subpart D—Third-Class Airman Medical Certificate

§ 67.301 Eligibility.

To be eligible for a third-class airman medical certificate, or to remain eligible for a third-class airman medical certificate, a person must meet the requirements of this subpart.

§ 67.303 Eye.

Eye standards for a third-class airman medical certificate are:
(a) Distant visual acuity of 20/40 or better in each eye separately, with or without corrective lenses. If corrective lenses (spectacles or contact lenses) are necessary for 20/40 vision, the person may be eligible only on the condition that corrective lenses are worn while exercising the privileges of an airman certificate.
(b) Near vision of 20/40 or better, Snellen equivalent, at 16 inches in each eye separately, with or without corrective lenses.
(c) Ability to perceive those colors necessary for the safe performance of airman duties.
(d) No acute or chronic pathological condition of either eye or adnexa that interferes with the proper function of an eye, that may reasonably be expected to progress to that degree, or that may reasonably be expected to be aggravated by flying.

§ 67.305 Ear, nose, throat, and equilibrium.

Ear, nose, throat, and equilibrium standards for a third-class airman medical certificate are:
(a) The person shall demonstrate acceptable hearing by at least one of the following tests:
   (1) Demonstrate an ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 6 feet from the examiner, with the back turned to the examiner.
   (2) Demonstrate an acceptable understanding of speech as determined by
audiometric speech discrimination testing to a score of at least 70 percent obtained in one ear or in a sound field environment.

(3) Provide acceptable results of pure tone audiometric testing of unaided hearing acuity according to the following table of worst acceptable thresholds, using the calibration standards of the American National Standards Institute, 1969:

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<td>Poorer ear (Db)</td>
<td>35</td>
<td>50</td>
<td>50</td>
<td>60</td>
</tr>
</tbody>
</table>

(b) No disease or condition of the middle or internal ear, nose, oral cavity, pharynx, or larynx that—

(1) Interferes with, or is aggravated by, flying or may reasonably be expected to do so; or

(2) Interferes with clear and effective speech communication.

(c) No disease or condition manifested by, or that may reasonably be expected to be manifested by, vertigo or a disturbance of equilibrium.

§ 67.307 Mental.

Mental standards for a third-class airman medical certificate are:

(a) No established medical history or clinical diagnosis of any of the following:

(1) A personality disorder that is severe enough to have repeatedly manifested itself by overt acts.

(2) A psychosis. As used in this section, “psychosis” refers to a mental disorder in which—

(i) The individual has manifested delusions, hallucinations, grossly bizarre or disorganized behavior, or other commonly accepted symptoms of this condition; or

(ii) The individual may reasonably be expected to manifest delusions, hallucinations, grossly bizarre or disorganized behavior, or other commonly accepted symptoms of this condition.

(3) A bipolar disorder.

(4) Substance dependence, except where there is established clinical evidence, satisfactory to the Federal Air Surgeon, of recovery, including sustained total abstinence from the substance for not less than the preceding 2 years. As used in this section—

(i) “Substance” includes: alcohol; other sedatives and hypnotics; anxiolytics; opioids; central nervous system stimulants such as cocaine, amphetamines, and similarly acting sympathomimetics; hallucinogens; phencyclidine or similarly acting arylcyclohexylamines; cannabis; inhalants; and other psychoactive drugs and chemicals; and

(ii) “Substance dependence” means a condition in which a person is dependent on a substance, other than tobacco or ordinary xanthine-containing (e.g., caffeine) beverages, as evidenced by—

(A) Increased tolerance;

(B) Manifestation of withdrawal symptoms;

(C) Impaired control of use; or

(D) Continued use despite damage to physical health or impairment of social, personal, or occupational functioning.

(b) No substance abuse within the preceding 2 years defined as:

(1) Use of a substance in a situation in which that use was physically hazardous, if there has been at any other time an instance of the use of a substance also in a situation in which that use was physically hazardous;

(2) A verified positive drug test result conducted under an anti-drug rule or internal program of the U.S. Department of Transportation or any other Administration within the U.S. Department of Transportation; or

(3) Misuse of a substance that the Federal Air Surgeon, based on case history and appropriate, qualified medical judgment relating to the substance involved, finds—

(i) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or

(ii) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

(c) No other personality disorder, neurosis, or other mental condition that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds—
§ 67.309 Neurologic.

Neurologic standards for a third-class airman medical certificate are:
(a) No established medical history or clinical diagnosis of any of the following:
(1) Epilepsy;
(2) A disturbance of consciousness without satisfactory medical explanation of the cause; or
(3) A transient loss of control of nervous system function(s) without satisfactory medical explanation of the cause.
(b) No other seizure disorder, disturbance of consciousness, or neurologic condition that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds—
(1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
(2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

§ 67.311 Cardiovascular.

Cardiovascular standards for a third-class airman medical certificate are no established medical history or clinical diagnosis of any of the following:
(a) Myocardial infarction;
(b) Angina pectoris;
(c) Coronary heart disease that has required treatment or, if untreated, that has been symptomatic or clinically significant;
(d) Cardiac valve replacement;
(e) Permanent cardiac pacemaker implantation; or
(f) Heart replacement.

§ 67.313 General medical condition.

The general medical standards for a third-class airman medical certificate are:
(a) No established medical history or clinical diagnosis of diabetes mellitus that requires insulin or any other hypoglycemic drug for control.
(b) No other organic, functional, or structural disease, defect, or limitation that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the condition involved, finds—
(1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
(2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.
(c) No medication or other treatment that the Federal Air Surgeon, based on the case history and appropriate, qualified medical judgment relating to the medication or other treatment involved, finds—
(1) Makes the person unable to safely perform the duties or exercise the privileges of the airman certificate applied for or held; or
(2) May reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the person unable to perform those duties or exercise those privileges.

§ 67.315 Discretionary issuance.

A person who does not meet the provisions of §§ 67.303 through 67.313 may apply for the discretionary issuance of a certificate under § 67.401.

Subpart E—Certification Procedures

§ 67.401 Special issuance of medical certificates.

(a) At the discretion of the Federal Air Surgeon, an Authorization for Special Issuance of a Medical Certificate (Authorization), valid for a specified period, may be granted to a person who
does not meet the provisions of subparts B, C, or D of this part if the person shows to the satisfaction of the Federal Air Surgeon that the duties authorized by the class of medical certificate applied for can be performed without endangering public safety during the period in which the Authorization would be in force. The Federal Air Surgeon may authorize a special medical flight test, practical test, or medical evaluation for this purpose. A medical certificate of the appropriate class may be issued to a person who does not meet the provisions of subparts B, C, or D of this part if that person possesses a valid Authorization and is otherwise eligible. An airman medical certificate issued in accordance with this section shall expire no later than the end of the validity period or upon the withdrawal of the Authorization upon which it is based. At the end of its specified validity period, for grant of a new Authorization, the person must again show to the satisfaction of the Federal Air Surgeon that the duties authorized by the class of medical certificate applied for can be performed without endangering public safety during the period in which the Authorization would be in force.

(b) At the discretion of the Federal Air Surgeon, a Statement of Demonstrated Ability (SODA) may be granted, instead of an Authorization, to a person whose disqualifying condition is static or nonprogressive and who has been found capable of performing airman duties without endangering public safety. A SODA does not expire and authorizes a designated aviation medical examiner to issue a medical certificate of a specified class if the examiner finds that the condition described on its face has not adversely changed.

(c) In granting an Authorization or SODA, the Federal Air Surgeon may consider the person’s operational experience and any medical facts that may affect the ability of the person to perform airman duties including—

1. The combined effect on the person of failure to meet more than one requirement of this part; and
2. The prognosis derived from professional consideration of all available information regarding the person.

(d) In granting an Authorization or SODA under this section, the Federal Air Surgeon specifies the class of medical certificate authorized to be issued and may do any or all of the following:

1. Limit the duration of an Authorization;
2. Condition the granting of a new Authorization on the results of subsequent medical tests, examinations, or evaluations;
3. State on the Authorization or SODA, and any medical certificate based upon it, any operational limitation needed for safety; or
4. Condition the continued effect of an Authorization or SODA, and any second- or third-class medical certificate based upon it, on compliance with a statement of functional limitations issued to the person in coordination with the Director of Flight Standards or the Director’s designee.

(e) In determining whether an Authorization or SODA should be granted to an applicant for a third-class medical certificate, the Federal Air Surgeon considers the freedom of an airman, exercising the privileges of a private pilot certificate, to accept reasonable risks to his or her person and property that are not acceptable in the exercise of commercial or airline transport pilot privileges, and, at the same time, considers the need to protect the safety of persons and property in other aircraft and on the ground.

(f) An Authorization or SODA granted under the provisions of this section to a person who does not meet the applicable provisions of subparts B, C, or D of this part may be withdrawn, at the discretion of the Federal Air Surgeon, at any time if—

1. There is adverse change in the holder’s medical condition;
2. The holder fails to comply with a statement of functional limitations or operational limitations issued as a condition of certification under this section;
3. Public safety would be endangered by the holder’s exercise of airman privileges;
4. The holder fails to provide medical information reasonably needed by the Federal Air Surgeon for certification under this section; or
§ 67.403 Applications, certificates, logbooks, reports, and records: Falsification, reproduction, or alteration; incorrect statements.

(a) No person may make or cause to be made—

(1) A fraudulent or intentionally false statement on any application for a medical certificate or on a request for any Authorization for Special Issuance of a Medical Certificate (Authorization) or Statement of Demonstrated Ability (SODA) under this part;

(2) A fraudulent or intentionally false entry in any logbook, record, or report that is kept, made, or used, to show compliance with any requirement for any medical certificate or for any Authorization or SODA under this part;

(3) A reproduction, for fraudulent purposes, of any medical certificate under this part; or

(4) An alteration of any medical certificate under this part.

(b) The commission by any person of an act prohibited under paragraph (a) of this section is a basis for—

(1) Suspending or revoking all airman, ground instructor, and medical certificates and ratings held by that person;

(2) Withdrawing all Authorizations or SODA’s held by that person; and

(3) Denying all applications for medical certification and requests for Authorizations or SODA’s.

(c) The following may serve as a basis for suspending or revoking a medical certificate; withdrawing an Authorization or SODA; or denying an application for a medical certificate or request for an authorization or SODA:

(1) An incorrect statement, upon which the FAA relied, made in support of an application for a medical certificate or request for an Authorization or SODA.

(2) An incorrect entry, upon which the FAA relied, made in any logbook, record, or report that is kept, made, or used to show compliance with any requirement for a medical certificate or an Authorization or SODA.

§ 67.405 Medical examinations: Who may give.

(a) First-class. Any aviation medical examiner who is specifically designated...
for the purpose may give the examination for the first-class medical certificate. Any interested person may obtain a list of these aviation medical examiners, in any area, from the FAA Regional Flight Surgeon of the region in which the area is located.

(b) Second- and third-class. Any aviation medical examiner may give the examination for the second- or third-class medical certificate. Any interested person may obtain a list of aviation medical examiners, in any area, from the FAA Regional Flight Surgeon of the region in which the area is located.

§ 67.407 Delegation of authority.

(a) The authority of the Administrator under 49 U.S.C. 44703 to issue or deny medical certificates is delegated to the Federal Air Surgeon to the extent necessary to—

(1) Examine applicants for and holders of medical certificates to determine whether they meet applicable medical standards; and

(2) Issue, renew, and deny medical certificates, and issue, renew, deny, and withdraw Authorizations for Special Issuance of a Medical Certificate and Statements of Demonstrated Ability to a person based upon meeting or failing to meet applicable medical standards.

(b) Subject to limitations in this chapter, the delegated functions of the Federal Air Surgeon to examine applicants for and holders of medical certificates for compliance with applicable medical standards and to issue, renew, and deny medical certificates are also delegated to aviation medical examiners and to authorized representatives of the Federal Air Surgeon within the FAA.

(c) The authority of the Administrator under 49 U.S.C. 44702, to reconsider the action of an aviation medical examiner is delegated to the Federal Air Surgeon; the Manager, Aeromedical Certification Division; and each Regional Flight Surgeon. Where the person does not meet the standards of §§ 67.107(b)(3) and (c), 67.109(b), 67.113(b) and (c), 67.207(b)(3) and (c), 67.209(b), 67.213(b) and (c), 67.201(b) and (c), 67.301(b), or 67.313(b) and (c), any action taken under this paragraph other than by the Federal Air Surgeon is subject to reconsideration by the Federal Air Surgeon. A certificate issued by an aviation medical examiner is considered to be affirmed as issued unless an FAA official named in this paragraph (authorized official) reverses that issuance within 60 days after the date of issuance. However, if within 60 days after the date of issuance an authorized official requests the certificate holder to submit additional medical information, an authorized official may reverse the issuance within 60 days after receipt of the requested information.

(d) The authority of the Administrator under 49 U.S.C. 44709 to re-examine any civil airman to the extent necessary to determine an airman’s qualification to continue to hold an airman medical certificate, is delegated to the Federal Air Surgeon and his or her authorized representatives within the FAA.

§ 67.409 Denial of medical certificate.

(a) Any person who is denied a medical certificate by an aviation medical examiner may, within 30 days after the date of the denial, apply in writing and in duplicate to the Federal Air Surgeon, Attention: Manager, Aeromedical Certification Division, AAM-300, Federal Aviation Administration, P.O. Box 26080, Oklahoma City, Oklahoma 73126, for reconsideration of that denial. If the person does not ask for reconsideration during the 30-day period after the date of the denial, he or she is considered to have withdrawn the application for a medical certificate.

(b) The denial of a medical certificate—

(1) By an aviation medical examiner is not a denial by the Administrator under 49 U.S.C. 44703.

(2) By the Federal Air Surgeon is considered to be a denial by the Administrator under 49 U.S.C. 44703.

(3) By the Manager, Aeromedical Certification Division, or a Regional Flight Surgeon is considered to be a denial by the Administrator under 49 U.S.C. 44703 except where the person does not meet the standards of §§ 67.107(b)(3) and (c), 67.109(b), or 67.113(b) and (c); 67.207(b)(3) and (c), 67.209(b), or 67.213(b) and (c); or
§ 67.411 Medical certificates by flight surgeons of Armed Forces.

(a) The FAA has designated flight surgeons of the Armed Forces on specified military posts, stations, and facilities, as aviation medical examiners.

(b) An aviation medical examiner described in paragraph (a) of this section may give physical examinations for the FAA medical certificates to persons who are on active duty or who are, under Department of Defense medical programs, eligible for FAA medical certification as civil airmen. In addition, such an examiner may issue or deny an appropriate FAA medical certificate in accordance with the regulations of this chapter and the policies of the FAA.

(c) Any interested person may obtain a list of the military posts, stations, and facilities at which a flight surgeon has been designated as an aviation medical examiner from the Surgeon General of the Armed Force concerned or from the Manager, Aeromedical Education Division, AAM-400, Federal Aviation Administration, P.O. Box 26082, Oklahoma City, Oklahoma 73125.

§ 67.413 Medical records.

(a) Whenever the Administrator finds that additional medical information or history is necessary to determine whether an applicant for or the holder of a medical certificate meets the medical standards for it, the Administrator requests that person to furnish that information or to authorize any clinic, hospital, physician, or other person to release to the Administrator all available information or records concerning that history. If the applicant or holder fails to provide the requested medical information or history or to authorize the release so requested, the Administrator may suspend, modify, or revoke all medical certificates the airman holds or may, in the case of an applicant, deny the application for an airman medical certificate.

(b) If an airman medical certificate is suspended or modified under paragraph (a) of this section, that suspension or modification remains in effect until the requested information, history, or authorization is provided to the FAA and until the Federal Air Surgeon determines whether the person meets the medical standards under this part.

§ 67.415 Return of medical certificate after suspension or revocation.

The holder of any medical certificate issued under this part that is suspended or revoked shall, upon the Administrator's request, return it to the Administrator.
PART 71—DESIGNATION OF CLASS A, CLASS B, CLASS C, CLASS D, AND CLASS E AIRSPACE AREAS; AIRWAYS; ROUTES; AND REPORTING POINTS

Subpart A—General; Class A Airspace

§ 71.1 Applicability.

The complete listing for all Class A, Class B, Class C, Class D, and Class E airspace areas and for all reporting points can be found in FAA Order 7400.9F, Airspace Designations and Reporting Points, dated September 10, 1998. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The approval to incorporate by reference FAA Order 7400.9F is effective September 16, 1998, through September 15, 1999. During the incorporation by reference period, proposed changes to the listings of Class A, Class B, Class C, Class D, and Class E airspace areas and to reporting points will be published in full text as proposed rule documents in the Federal Register. Amendments to the listings of Class A, Class B, Class C, Class D, and Class E airspace areas and to reporting points will be published in full text as final rules in the Federal Register. Periodically, the final rule amendments will be integrated into a revised edition of the Order and submitted to the Director of the Federal Register for approval for incorporation by reference in this section. Copies of FAA Order 7400.9F may be obtained from the Airspace and Rules Division, ATA–400, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591, (202) 267–8783. Copies of FAA Order 7400.9F may be inspected in Docket No. 29334 at the Federal Aviation Administration, Office of the Chief Counsel, AGC–200, Room 915G, 800 Independence Avenue, SW., Washington, D.C., weekdays between 8:30 a.m. and 5:00 p.m., or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC. This section is effective September 16, 1998, through September 15, 1999.

[Doc. No. 29334, 63 FR 50140, Sept. 21, 1998]


§ 71.3 [Reserved]

Subpart B—Class B Airspace

§ 71.41 Class B airspace.

Subpart C—Class C Airspace

§ 71.51 Class C airspace.

Subpart D—Class D Airspace

§ 71.61 Class D airspace.

Subpart E—Class E Airspace

§ 71.71 Class E airspace.

§ 71.73 Classification of Federal airways.

§ 71.75 Extent of Federal airways.

§ 71.77 [Reserved]

§ 71.79 Designation of VOR Federal airways.

Subparts F–G [Reserved]

Subpart H—Reporting Points

§ 71.901 Applicability.


Source: Amdt. 71–14, 56 FR 65654, Dec. 17, 1991, unless otherwise noted.

Subpart A—General; Class A Airspace

§ 71.11 Applicability.

The complete listing for all Class A, Class B, Class C, Class D, and Class E airspace areas and for all reporting points can be found in FAA Order 7400.9F, Airspace Designations and Reporting Points, dated September 10, 1998. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The approval to incorporate by reference FAA Order 7400.9F is effective September 16, 1998, through September 15, 1999. During the incorporation by reference period, proposed changes to the listings of Class A, Class B, Class C, Class D, and Class E airspace areas and to reporting points will be published in full text as proposed rule documents in the Federal Register. Amendments to the listings of Class A, Class B, Class C, Class D, and Class E airspace areas and to reporting points will be published in full text as final rules in the Federal Register. Periodically, the final rule amendments will be integrated into a revised edition of the Order and submitted to the Director of the Federal Register for approval for incorporation by reference in this section. Copies of FAA Order 7400.9F may be obtained from the Airspace and Rules Division, ATA–400, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591, (202) 267–8783.

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[Doc. No. 29334, 63 FR 50140, Sept. 21, 1998]


§ 71.3 [Reserved]

§ 71.5 Reporting points.

The reporting points listed in subpart H of FAA Order 7400.9F (incorporated by reference, see § 71.1) consist of geographic locations at which the position
§ 71.7  
of an aircraft must be reported in accordance with part 91 of this chapter.  


§ 71.9 Overlapping airspace designations.  

(a) When overlapping airspace designations apply to the same airspace, the operating rules associated with the more restrictive airspace designation apply.  

(b) For the purpose of this section—  

(1) Class A airspace is more restrictive than Class B, Class C, Class D, Class E, or Class G airspace;  

(2) Class B airspace is more restrictive than Class C, Class D, Class E, or Class G airspace;  

(3) Class C airspace is more restrictive than Class D, Class E, or Class G airspace;  

(4) Class D airspace is more restrictive than Class E or Class G airspace; and  

(5) Class E is more restrictive than Class G airspace.  

§ 71.31 Class A airspace.  

The airspace descriptions contained in § 71.33 and the routes contained in subpart A of FAA Order 7400.9F (incorporated by reference, see § 71.1) are designated as Class A airspace within which all pilots and aircraft are subject to the rating requirements, operating rules, and equipment requirements of part 91 of this chapter.  


Federal Aviation Administration, DOT

Subpart B—Class B Airspace

§ 71.41 Class B airspace.

The Class B airspace areas listed in subpart B of FAA Order 7400.9F (incorporated by reference, see § 71.1) consist of specified airspace within which all aircraft operators are subject to the minimum pilot qualification requirements, operating rules, and aircraft equipment requirements of part 91 of this chapter. Each Class B airspace area designated for an airport in subpart B of FAA Order 7400.9F (incorporated by reference, see § 71.1) contains at least one primary airport around which the airspace is designated.


Subpart C—Class C Airspace

§ 71.51 Class C airspace.

The Class C airspace areas listed in subpart C of FAA Order 7400.9F (incorporated by reference, see § 71.1) consist of specified airspace within which all aircraft operators are subject to operating rules and equipment requirements of part 91 of this chapter. Each Class C airspace area designated for an airport in subpart C of FAA Order 7400.9F (incorporated by reference, see § 71.1) contains at least one primary airport around which the airspace is designated.


Subpart D—Class D Airspace

§ 71.61 Class D airspace.

The Class D airspace areas listed in subpart D of FAA Order 7400.9F (incorporated by reference, see § 71.1) consist of specified airspace within which all aircraft operators are subject to operating rules and equipment requirements of part 91 of this chapter. Each Class D airspace area designated for an airport in subpart D of FAA Order 7400.9F (incorporated by reference, see § 71.1) contains at least one primary airport around which the airspace is designated.


Subpart E—Class E Airspace

§ 71.71 Class E airspace.

Class E airspace consists of:

(a) The airspace of the United States, including that airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous states and Alaska, extending upward from 14,500 feet MSL up to, but not including 18,000 feet MSL, and the airspace above FL 600, excluding—

1. The Alaska peninsula west of longitude 160°00′00″ W.; and

2. The airspace below 1,500 feet above the surface of the earth.

(b) The airspace areas designated for an airport in subpart E of FAA Order 7400.9F (incorporated by reference, see § 71.1) within which all aircraft operators are subject to the operating rules specified in part 91 of this chapter.

(c) The airspace areas listed as domestic airspace areas in subpart E of FAA Order 7400.9F (incorporated by reference, see § 71.1) which extend upward from 700 feet or more above the surface of the earth when designated in conjunction with an airport for which an
§ 71.73 Classification of Federal airways.

Federal airways are classified as follows:
(a) Colored Federal airways:
   (1) Green Federal airways.
   (2) Amber Federal airways.
   (3) Red Federal airways.
   (4) Blue Federal airways.
(b) VOR Federal airways.

§ 71.75 Extent of Federal airways.

(a) Each Federal airway is based on a center line that extends from one navigational aid or intersection to another navigational aid (or through several navigational aids or intersections) specified for that airway.
(b) Unless otherwise specified:
   (1) Each Federal airway includes the airspace within parallel boundary lines 4 miles each side of the center line. Where an airway changes direction, it includes that airspace enclosed by extending the boundary lines of the airway segments until they meet.
   (2) Where the changeover point for an airway segment is more than 51 miles from either of the navigational aids defining that segment, and—
      (i) The changeover point is midway between the navigational aids, the airway includes the airspace between lines diverging at angles of 4.5° from the center line at each navigational aid and extending until they intersect opposite the changeover point; or
      (ii) The changeover point is not midway between the navigational aids, the airway includes the airspace between lines diverging at angles of 4.5° from the center line at the navigational aid more distant from the changeover point, and between lines connecting these points of intersection and the navigational aid nearer to the changeover point.
   (3) Where an airway terminates at a point or intersection more than 51 miles from the closest associated navigational aid, it includes the additional airspace within lines diverging at angles of 4.5° from the center line extending from the associated navigational aid to a line perpendicular to the center line at the termination point.

Effective Date Note: By Amdt. 71-16, 58 FR 50140, Sept. 21, 1998, in §71.71, paragraphs (b) through (f) were amended by revising “FAA Order 7400.9E” to read “FAA Order 7400.9F”; effective Sept. 16, 1998 through Sept. 15, 1999.
(4) Where an airway terminates, it includes the airspace within a circle centered at the specified navigational aid or intersection having a diameter equal to the airway width at that point. However, an airway does not extend into an oceanic control area.

(c) Unless otherwise specified—

(1) Each Federal airway includes that airspace extending upward from 1,200 feet above the surface of the earth, but not including, 18,000 feet MSL, except that Federal airways for Hawaii have no upper limits. Variations of the lower limits of an airway are expressed in digits representing hundreds of feet above the surface or MSL and, unless otherwise specified, apply to the segment of an airway between adjoining navigational aids or intersections; and

(2) The airspace of a Federal airway, within the lateral limits of a Class E airspace area with a lower floor, has a floor coincident with the floor of that area.

(d) A Federal airway does not include the airspace of a prohibited area.

§ 71.77 [Reserved]

§ 71.79 Designation of VOR Federal airways.

Unless otherwise specified the place names appearing in the descriptions of airspace areas in subpart E of FAA Order 7400.9E (incorporated by reference, see § 71.1) designated as VOR Federal airways indicate VOR or VORTAC navigational facilities identified by those names.


Effective Date Note: By Amdt. 71-30, 63 FR 50140, Sept. 21, 1998, in § 71.79, paragraph (a) was amended by revising “FAA Order 7400.9E” to read “FAA Order 7400.9F”, effective Sept. 16, 1998 through Sept. 15, 1999.

Part 73—Special Use Airspace

Special Federal Aviation Regulation (SFAR) No. 53

Subpart A—General

Sec. 73.1 Applicability.
73.3 Special use airspace.
73.5 Bearings; radials; miles.

Subpart B—Restricted Areas

73.11 Applicability.
73.13 Restrictions.
73.15 Using agency.
73.17 Controlling agency.
73.19 Reports by using agency.

Subpart C—Prohibited Areas

73.81 Applicability.
73.83 Restrictions.
73.85 Using agency.


Source: 46 FR 779, Jan. 2, 1991, unless otherwise noted.
15 CFR Ch. 1 (1-1-99 Edition)

§ 73.1 Special Federal Aviation Regulation (SFAR) No. 53—Establishment of Warning Areas in the Airspace Overlying the Waters Between 3 and 12 Nautical Miles from the United States Coast

1. Applicability. This rule establishes warning areas in the same location as nonregulatory warning areas previously designated over international waters. This special regulation does not affect the validity of any nonregulatory warning area which is designated over international waters beyond 12 nautical miles from the coast of the United States. This special regulation expires on January 15, 1996.

2. Definition—Warning area. A warning area established under this special rule is airspace of defined dimensions, extending from 3 to 12 nautical miles from the coast of the United States, that contains activity which may be hazardous to nonparticipating aircraft. The purpose of such warning areas is to warn nonparticipating pilots of the potential danger. Part 91 is applicable within the airspace designated under this special rule.

Non-regulatory warning area. A non-regulatory warning area is airspace of defined dimensions designated over international waters that contains activity which may be hazardous to nonparticipating aircraft. The purpose of such warning areas is to warn nonparticipating pilots of the potential danger.

3. Participating aircraft. Each person conducting an aircraft operation within a warning area designated under this special rule is airspace of defined dimensions, extending from 3 to 12 nautical miles from the coast of the United States, that contains activity which may be hazardous to nonparticipating aircraft. The purpose of such warning areas is to warn nonparticipating pilots of the potential danger.

4. Nonparticipating aircraft. Nonparticipating pilots, while not excluded from the warning areas established by this SFAR, are on notice that military activity, which may be hazardous to nonparticipating aircraft, is conducted in these areas.


Subpart A—General

§ 73.3 Special use airspace.

(a) Special use airspace consists of airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature, or where in limitations are imposed upon aircraft operations that are not a part of those activities, or both.

(b) The vertical limits of special use airspace are measured by designated altitude floors and ceilings expressed as flight levels or as feet above mean sea level. Unless otherwise specified, the word “to” (an altitude or flight level) means “to and including” (that altitude or flight level).

(c) The horizontal limits of special use airspace are measured by boundaries described by geographic coordinates or other appropriate references that clearly define their perimeter.

(d) The period of time during which a designation of special use airspace is in effect is stated in the designation.

§ 73.5 Bearings; radials; miles.

(a) All bearings and radials in this part are true from point of origin.

(b) Unless otherwise specified, all mileages in this part are stated as statute miles.

Subpart B—Restricted Areas

§ 73.11 Applicability.

This subpart designates restricted areas and prescribes limitations on the operation of aircraft within them.

§ 73.13 Restrictions.

No person may operate an aircraft within a restricted area between the designated altitudes and during the time of designation, unless he has the advance permission of

(a) The using agency described in § 73.15; or

(b) The controlling agency described in § 73.17.

§ 73.15 Using agency.

(a) For the purposes of this subpart, the following are using agencies:

(1) The agency, organization, or military command whose activity within a restricted area necessitated the area being so designated.
§ 73.19 Reports by using agency.

(a) Each using agency shall prepare a report on the use of each restricted area as published in this part of the preceding 12-month period ended September 30, and transmit it by the following January 31 of each year to the Manager, Air Traffic Division in the regional office of the Federal Aviation Administration having jurisdiction over the area in which the restricted area is located, with a copy to the Program Director for Air Traffic Airspace Management, Federal Aviation Administration, Washington, DC 20591.

(b) In the report under this section the using agency shall:

(1) State the name and number of the restricted area as published in this part, and the period covered by the report.

(2) State the activities (including average daily number of operations if appropriate) conducted in the area, and any other pertinent information concerning current and future electronic monitoring devices.

(3) State the number of hours daily, the days of the week, and the number of weeks during the year that the area was used.

(4) For restricted areas having a joint-use designation, also state the number of hours daily, the days of the week, and the number of weeks during the year that the restricted area was released to the controlling agency for public use.

(5) State the mean sea level altitudes or flight levels (whichever is appropriate) used in aircraft operations and the maximum and average ordinate of surface firing (expressed in feet, mean sea level altitude) used on a daily, weekly, and yearly basis.

(6) Include a chart of the area (of optional scale and design) depicting, if used, aircraft operating areas, flight patterns, ordnance delivery areas, surface firing points, and target, fan, and impact areas. After once submitting an appropriate chart, subsequent annual charts are not required unless there is a change in the area, activity or altitude (or flight levels) used, which might alter the depiction of the activities originally reported. If no change is to be submitted, a statement indicating “no change” shall be included in the report.

(7) Include any other information not otherwise required under this part which is considered pertinent to activities carried on in the restricted area.

(c) If it is determined that the information submitted under paragraph (b) of this section is not sufficient to evaluate the nature and extent of the use of a restricted area, the FAA may request the using agency to submit supplementary reports. Within 60 days after receiving a request for additional information, the using agency shall submit such information as the Program Director for Air Traffic Airspace Management considers appropriate. Supplementary reports must be sent to the FAA officials designated in paragraph (a) of this section.

(Secs. 307 and 313(a), Federal Aviation Act of 1958 (49 U.S.C. 1348 and 1354(a)))

[Doc. No. 15379, 42 FR 54798, Oct. 11, 1977, as amended by Amdt. 73-5, 54 FR 39292, Sept. 25, 1989; Amdt. 73-6, 58 FR 42001, Aug. 6, 1993; Amdt. 73-8, 61 FR 26435, May 28, 1996; Amdt. 73-8, 63 FR 16890, Apr. 7, 1998]
§ 73.81

EDITORIAL NOTE: The restricted areas formerly carried as §§ 608.21 to 608.72 of this title were transferred to part 73 as §§ 73.21 to 73.72 under subpart B but are not carried in the Code of Federal Regulations. For Federal Register citations affecting these restricted areas, see the List of CFR Sections Affected in the Finding Aids section of this volume.

Subpart C—Prohibited Areas

§ 73.81 Applicability.
This subpart designates prohibited areas and prescribes limitations on the operation of aircraft therein.

§ 73.83 Restrictions.
No person may operate an aircraft within a prohibited area unless authorization has been granted by the using agency.

§ 73.85 Using agency.
For the purpose of this subpart, the using agency is the agency, organization or military command that established the requirements for the prohibited area.

EDITORIAL NOTE: Sections 73.87 through 73.99 are reserved for descriptions of designated prohibited areas. For Federal Register citations affecting these prohibited areas, see the List of CFR Sections Affected in the Finding Aids section of this volume.

PART 75 [RESERVED]

PART 77—OBJECTS AFFECTING NAVIGABLE AIRSPACE

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AUTHORITY: 49 U.S.C. 106(g), 40103, 40113-40114, 44502, 44701, 44718, 46101±46102, 46104.
SOURCE: Docket No. 1882, 30 FR 1839, Feb. 10, 1965, unless otherwise noted.

Subpart A—General
§ 77.1 Scope.
This part:
(a) Establishes standards for determining obstructions in navigable airspace;
(b) Sets forth the requirements for notice to the Administrator of certain proposed construction or alteration;
Federal Aviation Administration, DOT

§ 77.11

(c) Provides for aeronautical studies of obstructions to air navigation, to determine their effect on the safe and efficient use of airspace;
(d) Provides for public hearings on the hazardous effect of proposed construction or alteration on air navigation; and
(e) Provides for establishing antenna farm areas.

§ 77.2 Definition of terms.

For the purpose of this part:
Airport available for public use means an airport that is open to the general public with or without a prior request to use the airport.
A seaplane base is considered to be an airport only if its sea lanes are outlined by visual markers.
Nonprecision instrument runway means a runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in nonprecision instrument approach procedure has been approved, or planned, and for which no precision approach facilities are planned, or indicated on an FAA planning document or military service military airport planning document.
Precision instrument runway means a runway having an existing instrument approach procedure utilizing an Instrument Landing System (ILS), or a Precision Approach Radar (PAR). It also means a runway for which a precision approach system is planned and is so indicated by an FAA approved airport layout plan; a military service approved military airport layout plan; any other FAA planning document, or military service military airport planning document.
Utility runway means a runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less.
Visual runway means a runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA approved airport layout plan, a military service approved military airport lay-
§ 77.13 Construction or alteration requiring notice.

It specifies the locations and dimensions of the construction or alteration for which notice is required and prescribes the form and manner of the notice. It also requires supplemental notices 48 hours before the start and upon the completion of certain construction or alteration that was the subject of a notice under §77.13(a).

(b) Notices received under this subpart provide a basis for:
(1) Evaluating the effect of the construction or alteration on operational procedures and proposed operational procedures;
(2) Determinations of the possible hazardous effect of the proposed construction or alteration on air navigation;
(3) Recommendations for identifying the construction or alteration in accordance with the current Federal Aviation Administration Advisory Circular AC 70/7460-1 entitled “Obstruction Marking and Lighting,” which is available without charge from the Department of Transportation, Distribution Unit, TAD 484.3, Washington, DC 20590.
(4) Determining other appropriate measures to be applied for continued safety of air navigation; and
(5) Charting and other notification to airmen of the construction or alteration.

(Sec. 6, 80 Stat. 937, 49 U.S.C. 1655)

§ 77.13 Construction or alteration requiring notice.

(a) Except as provided in §77.15, each sponsor who proposes any of the following construction or alteration shall notify the Administrator in the form and manner prescribed in §77.17:
(1) Any construction or alteration of more than 200 feet in height above the ground level at its site.
(2) Any construction or alteration of greater height than an imaginary surface extending outward and upward at one of the following slopes:
   (i) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport specified in paragraph (a)(5) of this section with at least one runway more than 3,200 feet in actual length, excluding heliports.
   (ii) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport specified in paragraph (a)(5) of this section with its longest runway no more than 3,200 feet in actual length, excluding heliports.
   (iii) 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport specified in paragraph (a)(5) of this section.
(3) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) (1) or (2) of this section.
(4) When requested by the FAA, any construction or alteration that would be in an instrument approach area (defined in the FAA standards governing instrument approach procedures) and available information indicates it might exceed a standard of subpart C of this part.
(5) Any construction or alteration on any of the following airports (including heliports):
   (i) An airport that is available for public use and is listed in the Airport Directory of the current Airmen’s Information Manual or in either the Alaska or Pacific Airmen’s Guide and Chart Supplement.
   (ii) An airport under construction, that is the subject of a notice or proposal on file with the Federal Aviation Administration, and, except for military airports, it is clearly indicated that that airport will be available for public use.
   (iii) An airport that is operated by an armed force of the United States.
(b) Each sponsor who proposes construction or alteration that is the subject of a notice under paragraph (a) of this section and is advised by an FAA regional office that a supplemental notice is required shall submit that notice on a prescribed form to be received by the FAA regional office at least 48 hours before the start of the construction or alteration.

(c) Each sponsor who undertakes construction or alteration that is the subject of a notice under paragraph (a) of this section shall, within 5 days after that construction or alteration reaches its greatest height, submit a supplemental notice on a prescribed form to the FAA regional office having jurisdiction over the region involved, if—

(1) The construction or alteration is more than 200 feet above the surface level of its site; or

(2) An FAA regional office advises him that submission of the form is required.


§ 77.17 Form and time of notice.

(a) Each person who is required to notify the Administrator under §77.13(a) shall send one executed form set (four copies) of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area within which the construction or alteration will be located. Copies of FAA Form 7460-1 may be obtained from the headquarters of the Federal Aviation Administration and the regional offices.

(b) The notice required under §77.13(a) (1) through (4) must be submitted at least 30 days before the earlier of the following dates:

(1) The date the proposed construction or alteration is to begin.

(2) The date an application for a construction permit is to be filed.

However, a notice relating to proposed construction or alteration that is subject to the licensing requirements of the Federal Communications Act may be sent to FAA at the same time the application for construction is filed with the Federal Communications Commission, or at any time before that filing.

(c) A proposed structure or an alteration to an existing structure that exceeds 2,000 feet in height except one that would increase the height of another antenna structure.

(b) Any antenna structure of 20 feet or less in height except one that would increase the height of another antenna structure.

(c) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device, of a type approved by the Administrator, or an appropriate military service on military airports, the location and height of which is fixed by its functional purpose.
to air navigation, will a determination of no hazard be issued.

(d) In the case of an emergency involving essential public services, public health, or public safety that requires immediate construction or alteration, the 30-day requirement in paragraph (b) of this section does not apply and the notice may be sent by telephone, telegraph, or other expeditious means, with an executed FAA Form 7460-1 submitted within 5 days thereafter. Outside normal business hours, emergency notices by telephone or telegraph may be submitted to the nearest FAA Flight Service Station.

(e) Each person who is required to notify the Administrator by paragraph (b) or (c) of §77.13, or both, shall send an executed copy of FAA Form 117-1, Notice of Progress of Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area involved.

§ 77.19 Acknowledgment of notice.

(a) The FAA acknowledges in writing the receipt of each notice submitted under §77.13(a).

(b) If the construction or alteration proposed in a notice is one for which lighting or marking standards are prescribed in the FAA Advisory Circular AC 70/7460-1, entitled “Obstruction Marking and Lighting,” the acknowledgment contains a statement to that effect and information on how the structure should be marked and lighted in accordance with the manual.

(c) The acknowledgment states that an aeronautical study of the proposed construction or alteration has resulted in a determination that the construction or alteration:

(1) Would not exceed any standard of subpart C and would not be a hazard to air navigation;

(2) Would exceed a standard of subpart C but would not be a hazard to air navigation; or

(3) Would exceed a standard of subpart C and further aeronautical study is necessary to determine whether it would be a hazard to air navigation, that the sponsor may request within 30 days that further study, and that, pending completion of any further study, it is presumed the construction or alteration would be a hazard to air navigation.


Subpart C—Obstruction Standards

§ 77.21 Scope.

(a) This subpart establishes standards for determining obstructions to air navigation. It applies to existing and proposed manmade objects, objects of natural growth, and terrain. The standards apply to the use of navigable airspace by aircraft and to existing air navigation facilities, such as an air navigation aid, airport, Federal airway, instrument approach or departure procedure, or approved off-airway route. Additionally, they apply to a planned facility or use, or a change in an existing facility or use, if a proposal therefor is on file with the Federal Aviation Administration or an appropriate military service on the date the notice required by §77.13(a) is filed.

(b) At those airports having defined runways with specially prepared hard surfaces, the primary surface for each such runway extends 200 feet beyond each end of the runway. At those airports having defined strips or pathways that are used regularly for the taking off and landing of aircraft and have been designated by appropriate authority as runways, but do not have specially prepared hard surfaces, each end of the primary surface for each such runway shall coincide with the corresponding end of the runway. At those airports, excluding seaplane bases, having a defined landing and takeoff area with no defined pathways for the landing and taking off of aircraft, a determination shall be made as to which portions of the landing and takeoff area are regularly used as landing and takeoff pathways. Those pathways so determined shall be considered runways and an appropriate primary surface as defined in §77.25(c) will be considered as being longitudinally centered on each runway so determined.
§ 77.25 Civil airport imaginary surfaces.

The following civil airport imaginary surfaces are established with relation to the airport and each runway. The size of each such imaginary surface is based on the category of each runway according to the type of approach available or planned for that runway. The slope and dimensions of the approach surface applied to each end of a runway are determined by the most precise approach existing or planned for that runway end.

§ 77.23 Standards for determining obstructions.

(a) An existing object, including a mobile object, is, and a future object would be, an obstruction to air navigation if it is of greater height than any of the following heights or surfaces:

(1) A height of 500 feet above ground level at the site of the object.

(2) A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

(3) A height within a terminal obstacle clearance area, including turn and termination areas, of an airport, or any imaginary surface established under § 77.25, that would increase the minimum obstacle clearance altitude.

(b) Except for traverse ways on or near an airport with an operative ground traffic control service, furnished by an air traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:

(1) Seventeen feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance.

(2) Fifteen feet for any other public roadway.

(3) Ten feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.

(4) Twenty-three feet for a railroad, and,

(5) For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it.

[Doc. No. 10383, 36 FR 5970, Apr. 1, 1971]
(a) Horizontal surface. A horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The radius of each arc is:

1. 5,000 feet for all runways designated as utility or visual;
2. 10,000 feet for all other runways.

The radius of the arc specified for each end of a runway will have the same arithmetical value. That value will be the highest determined for either end of the runway. When a 5,000-foot arc is encompassed by tangents connecting two adjacent 10,000-foot arcs, the 5,000-foot arc shall be disregarded on the construction of the perimeter of the horizontal surface.

(b) Conical surface. A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

(c) Primary surface. A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway; but when the runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of a primary surface is:

1. 250 feet for utility runways having only visual approaches.
2. 500 feet for utility runways having nonprecision instrument approaches.
3. For other than utility runways the width is:
   1. 500 feet for visual runways having only visual approaches.
   2. 500 feet for nonprecision instrument runways having visibility minimums greater than three-fourths of a statute mile.
   3. 1,000 feet for a nonprecision instrument runway having a nonprecision instrument approach with visibility minimums as low as three-fourths of a statute mile, and for precision instrument runways.

The width of the primary surface of a runway will be that width prescribed in this section for the most precise approach existing or planned for either end of that runway.

(d) Approach surface. A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

1. The inner edge of the approach surface is the same width as the primary surface and it expands uniformly to a width of:
   1. 1,250 feet for that end of a utility runway with only visual approaches;
   2. 1,500 feet for that end of a runway other than a utility runway with only visual approaches;
   3. 2,000 feet for that end of a utility runway with a nonprecision instrument approach;
   4. 3,500 feet for that end of a nonprecision instrument runway other than utility, having visibility minimums greater than three-fourths of a statute mile;
   5. 4,000 feet for that end of a nonprecision instrument runway, other than utility, having a nonprecision instrument approach with visibility minimums as low as three-fourths statute mile; and
   6. 16,000 feet for precision instrument runways.

2. The approach surface extends for a horizontal distance of:
   1. 5,000 feet at a slope of 20 to 1 for all utility and visual runways;
   2. 10,000 feet at a slope of 34 to 1 for all nonprecision instrument runways other than utility; and
   3. 10,000 feet at a slope of 50 to 1 with an additional 40,000 feet at a slope of 40 to 1 for all precision instrument runways.

3. The outer width of an approach surface to an end of a runway will be that width prescribed in this subsection for the most precise approach existing or planned for that runway end.

(e) Transitional surface. These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at
§ 77.29 Airport imaginary surfaces for heliports.

(a) Heliport primary surface. The area of the primary surface coincides in size and shape with the designated take-off and landing area of a heliport. This surface is a horizontal plane at the elevation of the established heliport elevation.

(b) Heliport approach surface. The approach surface begins at each end of the heliport primary surface with the same width as the primary surface, and extends outward and upward for a horizontal distance of 4,000 feet where its width is 500 feet. The slope of the approach surface is 8 to 1 for civil heliports and 10 to 1 for military heliports.

(c) Heliport transitional surfaces. These surfaces extend outward and upward from the lateral boundaries of the heliport primary surface and from the approach surfaces at a slope of 2 to 1 for
§ 77.31 Scope.
(a) This subpart applies to the conduct of aeronautical studies of the effect of proposed construction or alteration on the use of air navigation facilities or navigable airspace by aircraft. In the aeronautical studies, present and future IFR and VFR aeronautical operations and procedures are reviewed and any possible changes in those operations and procedures and in the construction proposal that would eliminate or alleviate the conflicting demands are ascertained.

(b) The conclusion of a study made under this subpart is normally a determination as to whether the specific proposal studied would be a hazard to air navigation.

§ 77.33 Initiation of studies.
(a) An aeronautical study is conducted by the FAA:
(1) Upon the request of the sponsor or any construction or alteration for which a notice is submitted under subpart B of this part, unless that construction or alteration would be located within an antenna farm area established under subpart F of this part; or
(2) Whenever the FAA determines it appropriate.

§ 77.35 Aeronautical studies.
(a) The Regional Manager, Air Traffic Division of the region in which the proposed construction or alteration would be located, or his designee, conducts the aeronautical study of the effect of the proposal upon the operation of air navigation facilities and the safe and efficient utilization of the navigable airspace. This study may include the physical and electromagnetic radiation effect the proposal may have on the operation of an air navigation facility.

(b) To the extent considered necessary, the Regional Manager, Air Traffic Division or his designee:
(1) Solicits comments from all interested persons;
(2) Explores objections to the proposal and attempts to develop recommendations for adjustment of aviation requirements that would accommodate the proposed construction or alteration;
(3) Examines possible revisions of the proposal that would eliminate the exceeding of the standards in subpart C of this part; and
(4) Convenes a meeting with all interested persons for the purpose of gathering all facts relevant to the effect of the proposed construction or alteration on the safe and efficient utilization of the navigable airspace.

(c) The Regional Manager, Air Traffic Division or his designee issues a determination as to whether the proposed construction or alteration would be a hazard to air navigation and sends copies to all known interested persons. This determination is final unless a petition for review is granted under § 77.37.

(d) If the sponsor revises his proposal to eliminate exceeding of the standards of subpart C of this part, or withdraws it, the Regional Manager, Air Traffic Division, or his designee, terminates the study and notifies all known interested persons.

§ 77.37 Discretionary review.
(a) The sponsor of any proposed construction or alteration or any person who stated a substantial aeronautical objection to it in an aeronautical study, or any person who has a substantial aeronautical objection to it but was not given an opportunity to state it, may petition the Administrator, within 30 days after issuance of
§ 77.43 Nature of hearing.

Sections 4, 5, 7, and 8 of the Administrative Procedure Act (5 U.S.C. 1003, 1004, 1006, and 1007) do not apply to hearings held on proposed construction or alteration to determine its effect on the safety of aircraft and the efficient use of navigable airspace because those
§ 77.45 **Presiding officer.**

(a) If, under §79.37, the Administrator grants a public hearing on any proposed construction or alteration covered by this part, the Director, Air Traffic Operations Service designates an FAA employee to be the presiding officer at the hearing.

(b) The presiding officer may:

1. Give notice of the date and location of the hearing and any prehearing conference that may be held;
2. Administer oaths and affirmations;
3. Examine witnesses;
4. Issue subpoenas and take depositions or have them taken;
5. Obtain, in the form of a public record, all pertinent and relevant facts relating to the subject matter of the hearing;
6. Rule, with the assistance of the legal officer, upon the admissibility of evidence;
7. Regulate the course and conduct of the hearing; and
8. Designate parties to the hearing and revoke those designations.


§ 77.47 **Legal officer.**

The Chief Counsel designates a member of his staff to serve as legal officer at each hearing under this subpart. The legal officer may examine witnesses and assist and advise the presiding officer on questions of evidence or other legal questions arising during the hearing.


§ 77.49 **Notice of hearing.**

In designating a time and place for a hearing under this subpart the presiding officer considers the needs of the FAA and the convenience of the parties and witnesses. The time and place of each hearing is published in the “Notices” section of the FEDERAL REGISTER before the date of the hearing, unless the notice is impractical or unnecessary.

§ 77.51 **Parties to the hearing.**

The presiding officer designates the following as parties to the hearing—

(a) The proponents of the proposed construction or alteration.

(b) Those persons whose activities would be substantially affected by the proposed construction or alteration.

§ 77.53 **Prehearing conference.**

(a) The presiding officer may, in his discretion, hold a prehearing conference with the parties to the hearing and the legal officer before the hearing.

(b) At the direction of the presiding officer, each party to a prehearing conference shall submit a brief written statement of the evidence he intends to provide through his witnesses and by questioning other witnesses at the hearing, and shall provide enough copies of the statement so that the presiding officer may keep three for the FAA and give one to each other party.

(c) At the prehearing conference, the presiding officer reduces and simplifies the subject matter of the hearing so far as possible and advises the parties of the probable order of presenting the evidence.

§ 77.55 **Examination of witnesses.**

(a) Each witness at a hearing under this subpart shall, after being sworn by the presiding officer, give his testimony under oath.

(b) The party for whom a witness, other than an employee of the FAA, is testifying shall examine that witness. After that examination, other parties to the hearing may examine the witness, in the order fixed by the presiding officer. The presiding officer and the legal officer may then examine the witness. The presiding officer may grant any party an additional opportunity to examine any witness, if that party adequately justifies the additional examination.

(c) The legal officer examines each FAA employee who is a witness, before the other parties examine him. After that examination, the order prescribed in paragraph (b) of this section applies. An FAA employee may testify only as to facts within his personal knowledge.
and the application of FAA regulations, standards, and policies.

§ 77.57 Evidence.
(a) The presiding officer receives all testimony and exhibits that are relevant to the issues of the hearing. So far as possible, each party shall submit enough copies of his exhibits that the presiding officer may keep three copies for the FAA and give one to each other party.
(b) The presiding officer excludes any testimony that is irrelevant, unduly repetitious, or consists of statements made during an aeronautical study in an effort to reconcile or compromise aviation or construction or alteration requirements. A party to the hearing may object to the admission of evidence only on the ground that it is irrelevant.

§ 77.59 Subpoenas of witnesses and exhibits.
(a) The presiding officer of a hearing may issue subpoenas for any witness or exhibit that he determines may be material and relevant to the issues of the hearing. So far as possible, each party to the hearing shall provide the witnesses and exhibits that he intends to present at the hearing.
(b) If any party to the hearing is unable to provide his necessary witnesses and exhibits, he shall advise the presiding officer far enough in advance that the presiding officer can determine whether he should issue subpoenas for the desired witnesses or exhibits.

§ 77.61 Revision of construction or alteration proposal.
(a) The sponsor of any proposed construction or alteration covered by this part may revise his proposal at any time before or during the hearing. If he revises it, the presiding officer decides whether the revision affects the proposal to the extent that he should send it to the Administrator for a redetermination of the need for a hearing.
(b) If the presiding officer decides that it does not need to be resubmitted to the Administrator, he advises the parties of the revised proposal and takes the action necessary to allow all parties to effectively participate in the hearing on the revised proposal. Without limiting his discretion, the presiding officer may recess and reconvene the hearing, or hold another prehearing conference.

§ 77.63 Record of hearing.
(a) Each hearing is recorded verbatim by an official reporter under an FAA contract. The transcript, and all exhibits, become a part of the record of the hearing.
(b) Any person may buy a copy of the transcript of the hearing from the reporter at the price fixed for it.
(c) The presiding officer may allow any party to withdraw an original document if he submits authenticated copies of it.
(d) Any person may buy, from the FAA, photostatic copies of any exhibit by paying the copying costs.
(e) A change in the official transcript of a hearing may be made only if it involves an error of substance. Any recommendation to correct the transcript must be filed with the presiding officer within 5 days after the hearing closes. The presiding officer reviews each request for a correction to the extent he considers appropriate and shall make any revisions that he finds appropriate as a result of that review.

§ 77.65 Recommendations by parties.
Within 20 days after the mailing of the record of hearing by the official reporter, or as otherwise directed by the presiding officer, each party may submit to the presiding officer five copies of his recommendations for a final decision to be made by the Administrator.

§ 77.67 Final decision of the Administrator.
After reviewing the evidence relevant to the questions of fact in a hearing, including the official transcript and the exhibits, the Administrator resolves all these questions, based on the weight of evidence, and makes his determination, stating the basis and reasons for it. He then issues an appropriate order to be served on each of the parties.
§ 77.69 Limitations on appearance and representation.

(a) A former officer or employee of the FAA may not appear on behalf of, or represent, any party before the FAA in connection with any matter to which this part applies, if he considered or passed on that matter while he was an officer or employee of the FAA.

(b) A person appearing before the FAA on any matter to which this part applies may not, in connection with that appearance, knowingly accept assistance from, or share fees with, any person who is prohibited by paragraph (a) of this section, from appearing himself on that matter.

(c) A former official or employee of the FAA may not, within 6 months after he ceases to be such an officer or employee, appear before the FAA on behalf of, or represent, any party in connection with any proceeding that was pending under this part while he was an officer or employee of the FAA, unless he obtains written consent from an appropriate officer of the FAA, based on a verified showing that he did not personally consider the matter concerned or gain particular knowledge of it while he was an officer or employee of the FAA.

Subpart F—Establishment of Antenna Farm Areas

§ 77.71 Scope.

(a) This subpart establishes antenna farm areas in which antenna structures may be grouped to localize their effect on the use of navigable airspace.

(b) It is the policy of the FAA to encourage the use of antenna farms and the single structure-multiple antenna concept for radio and television towers whenever possible. In considering proposals for establishing antenna farm areas, it considers as far as possible the revision of aeronautical procedures and operations to accommodate antenna structures that will fulfill broadcasting requirements.

§ 77.73 General provisions.

(a) An antenna farm area consists of a specified geographical location with established dimensions of area and height, where antenna towers with a common impact on aviation may be grouped. Each such area is established by appropriate rule making action.

(b) Each proposal for an antenna farm area is evaluated on the basis of its effect on the use of navigable airspace. The views of the Federal Communications Commission are requested on the effect that each establishment of an antenna farm area would have on its statutory responsibilities. Any views submitted by it are fully considered before the antenna farm concerned is established. If the Commission advises that the establishment of any proposed antenna farm area would interfere with its statutory responsibility, the proposed area is not established.

(c) The establishment of an antenna farm area is considered whenever it is proposed by:

(1) The FAA;
(2) The Federal Communications Commission;
(3) The sponsor of a proposed antenna tower; or
(4) Any other person having a substantial interest in a proposed antenna tower.


§ 77.75 Establishment of antenna farm areas.

The airspace areas described in the following sections of this subpart are established as antenna farm areas.

Note: Sections 77.77 through 77.1100 reserved for descriptions of antenna farm areas.
SUBCHAPTER F—AIR TRAFFIC AND GENERAL OPERATING RULES

PART 91—GENERAL OPERATING AND FLIGHT RULES

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SFAR No. 50-2
SFAR No. 51-1
SFAR No. 60
SFAR No. 62-2
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the operating limitations section of the Rotorcraft Flight Manual.

3. An approval issued under paragraph 2 of this Special Federal Aviation Regulation and the change to the Rotorcraft Flight Manual specified in paragraph 2(c) of this Special Federal Aviation Regulation constitute a supplemental type certificate for each rotorcraft approved under paragraph 2 of this SFAR. The supplemental type certificate will remain in effect until the approval is surrendered, revoked, or otherwise terminated.

4. Notwithstanding §91.179(a)(3) of the Federal Aviation Regulations, a person may operate a rotorcraft in a limited IFR operation approved under paragraph 2(a) of the Special Federal Aviation Regulation with enough fuel to fly, after reaching the alternate airport, for not less than 30 minutes, when that period of time has been approved.

5. Expiration.

(a) New applications for limited IFR rotorcraft operations under SFAR No. 29 may be submitted for approval until, but not including, the effective date of Amendment No. 1 of the Rotorcraft Regulatory Review Program. On and after the effective date of Amendment No. 1 of the Rotorcraft Regulatory Review Program, all applicants for certification of IFR rotorcraft operations must comply with the applicable provisions of the Federal Aviation Regulations.

(b) This Special Federal Aviation Regulation will terminate when all approvals issued under Special Federal Aviation Regulation No. 29 are surrendered, revoked, or otherwise terminated.

(Secs. 333(a), 601(a), and 603, Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421(a), and 1423) and section 6(c), Department of Transportation Act (49 U.S.C. 1655(c))

[Doc. No. 14237, 48 FR 632, Jan. 6, 1983, as amended by Amdt. 91-211, 54 FR 34531, Aug. 18, 1989]

SFAR No. 50-2—Special Flight Rules in the Vicinity of the Grand Canyon National Park, AZ

Section 1. Applicability. This rule prescribes special operating rules for all persons operating aircraft in the following airspace, designated as the Grand Canyon National Park Special Flight Rules Area:

That airspace extending upward from the surface up to but not including 14,500 feet MSL within an area bounded by a line beginning at lat. 36°09′30″ N., long. 112°03′00″ W.; to lat. 36°14′00″ N., long. 112°09′30″ W.; thence northeast along the boundary of the Grand Canyon National Park to lat. 36°24′47″ N., long. 112°52′00″ W.; to lat. 36°30′30″ N., long. 112°36′15″ W.; to lat. 36°35′30″ N., long. 111°53′10″ W.; to lat. 36°53′00″ N., long. 111°36′45″ W.; to lat. 36°53′00″ N., long. 111°33′00″ W.; to lat. 36°19′00″ N., long. 111°50′50″ W.; to lat. 36°17′00″ N., long. 111°42′00″ W.; to lat. 35°59′30″ N., long. 111°42′00″ W.; to lat. 35°57′30″ N., long. 112°03′55″ W.; thence counterclockwise via the 5-statute mile radius of the Grand Canyon Airport reference point (lat. 35°57′09″ N., long. 112°08′47″ W.) to lat. 35°57′30″ N., long. 112°14′00″ W.; to lat. 35°57′30″ N., long. 113°11′00″ W.; to lat. 35°42′30″ N., long. 113°11′00″ W.; to lat. 35°38′30″ N., long. 113°27′30″ W.; thence counterclockwise via the 5-statute mile radius of the Peach Springs VORTAC to lat. 35°41′20″ N., long. 113°36′00″ W.; to lat. 35°55′25″ N., long. 113°49′10″ W.; to lat. 35°57′45″ N., long. 113°45′20″ W.; thence northwest along the park boundary to lat. 36°02′20″ N., long. 113°50′15″ W.; to lat. 36°00′10″ N., long. 113°53′45″ W.; thence to the point of beginning.

Section 2. Aircraft operations: general.

Except in an emergency, no person may operate an aircraft in the Special Flight Rules Area under VFR on or after September 22, 1988, or under IFR on or after April 6, 1989, unless the operation—

(a) Is conducted in accordance with the following procedures:

NOTE: THE FOLLOWING PROCEDURES DO NOT RELIEVE THE PILOT FROM SEE-AND-AVOID RESPONSIBILITY OR COMPLIANCE WITH FAR 91.119.

1. Unless necessary to maintain a safe distance from other aircraft or terrain—

(i) Remain clear of the areas described in Section 4, and

(ii) Remain at or above the following altitudes in each sector of the canyon:

a. Eastern section from Lees Ferry to North Canyon and North Canyon to Boundary Ridge: as prescribed in Section 5.

b. Boundary Ridge to Supai Point (Yumtesha Point): 10,000 feet MSL.

c. Western section from Diamond Creek to the Grant Wash Cliffs: 8,000 feet MSL.

(2) Proceed through the four flight corridors described in Section 4 at the following altitudes unless otherwise
authorized in writing by the Flight Standards District Office:

Northbound

11,500 or 13,500 feet MSL

Southbound

10,500 or 12,500 feet MSL

(a) Is authorized in writing by the Flight Standards District Office and is conducted in compliance with the conditions contained in that authorization. Normally authorization will be granted for operation in the areas described in Section 4 or below the altitudes listed in Section 5 only for operations of aircraft necessary for law enforcement, firefighting, emergency medical treatment/evacuation of persons in the vicinity of the Park; for support of Park maintenance or activities; or for aerial access to and maintenance of other property located within the Special Flight Rules Area. Authorization may be issued on a continuing basis.

(c)(1) Prior to November 1, 1988, is conducted in accordance with a specific authorization to operate in that airspace incorporated in the operator’s part 135 operations specifications in accordance with the provisions of SFAR 50-1, notwithstanding the provisions of Sections 4 and 5; and

(2) On or after November 1, 1988, is conducted in accordance with a specific authorization to operate in that airspace incorporated in the operator’s operations specifications and approved by the Flight Standards District Office in accordance with the provisions of SFAR 50-2.

(d) Is a search and rescue mission directed by the U.S. Air Force Rescue Coordination Center.

(e) Is conducted within 3 nautical miles of Whitmore Airstrip, Pearce Ferry Airstrip, North Rim Airstrip, Cliff Dwellers Airstrip, or Marble Canyon Airstrip at an altitudes less than 3,000 feet above airport elevation, for the purpose of landing at or taking off from that facility. Or

(f) Is conducted under an IFR clearance and the pilot is acting in accordance with ATC instructions. An IFR flight plan may not be filed on a route or at an altitude that would require operation in an area described in Section 4.

Sec. 4. Flight-free zones. Except in an emergency or if otherwise necessary for safety of flight, or unless otherwise authorized by the Flight Standards District Office for a purpose listed in Section 3(b), no person may operate an aircraft in the Special Flight Rules Area within the following areas:

(a) Desert View Flight-Free Zone. Within an area bounded by a line beginning at Lat. 35°59′30″ N., Long. 111°46′20″ W. to 35°59′30″ N., Long. 111°52′45″ W.; to Lat. 36°04′50″ N., Long. 111°52′00″ W.; to Lat. 36°06′00″ N., Long. 111°46′20″ W.; to the point of origin; but not including the airspace at and above 10,500 feet MSL within 1 mile of the western boundary of the zone. The area between the Desert View and Bright Angel Flight-Free Zones is designated the “Zuni Point Corridor.”

(b) Bright Angel Flight-Free Zone. Within an area bounded by a line beginning at Lat. 35°59′30″ N., Long. 111°55′30″ W.; to Lat. 35°59′30″ N., Long. 112°04′00″ W.; thence counterclockwise via the 5-statute-mile radius of the Grand Canyon Airport point (Lat. 35°57′09″ N., Long. 112°08′47″ W.) to Lat. 36°01′30″ N., Long. 112°11′00″ W.; to Lat. 36°06′15″ N., Long. 112°12′50″ W.; to Lat. 36°14′40″ N., Long. 112°08′50″ W.; to Lat. 36°14′40″ N., Long. 111°57′30″ W.; to Lat. 36°12′30″ N., Long. 111°53′50″ W.; to the point of origin; but not including the airspace at and above 10,500 feet MSL within 1 mile of the eastern boundary between the southern boundary and Lat. 36°04′50″ N. or the airspace at and above 10,500 feet MSL within 2 miles of the northwest boundary. The area bounded by the Bright Angel and Shinumo Flight-Free Zones is designated the “Dragon Corridor.”

(c) Shinumo Flight-Free Zone. Within an area bounded by a line beginning at lat. 36°04′00″ N., long. 112°16′40″ W.; northwest along the park boundary to a point at lat. 36°12′47″ N., long. 112°30′53″ W.; to lat. 36°21′15″ N., long. 112°20′20″ W.; east along the park boundary to lat. 36°21′15″ N., long. 112°13′55″ W.; to lat. 36°14′40″ N., long. 112°11′25″ W.; to the point of origin. The area between the Thunder River/ Toroweap and Shinumo Flight-Free
Zones is designated the “Fossil Canyon Corridor.”

(d) Toroweap/Thunder River Flight-Free Zone. Within an area bounded by a line beginning at lat. 36°22′45″ N., long. 112°20′35″ W.; thence northwest along the boundary of the Grand Canyon National Park to lat. 36°17′48″ N., long. 113°03′15″ W.; to lat. 36°15′00″ N., long. 113°07′10″ W.; to lat. 36°10′30″ N., long. 113°07′10″ W.; thence east along the Colorado River to the confluence of Havasu Canyon (lat. 36°18′40″ N., long. 112°45′45″ W.;) including that area within a 1.5-nautical-mile radius of Toroweap Overlook (lat. 36°12′45″ N., long. 113°03′30″ W.) to the point of origin; but not including the following airspace designated as the “Tuckup Corridor”: at or above 10,500 feet MSL within 2 nautical miles either side of a line extending between lat. 36°24′47″ N., long. 112°48′50″ W.; and lat. 36°17′10″ N., long. 112°48′50″ W.; to the point of origin.

Sec. 5. Minimum flight altitudes. Except in an emergency or if otherwise necessary for safety of flight, or unless otherwise authorized by the Flight Standards District Office for a purpose listed in Section 3(b), no person may operate an aircraft in the Special Flight Rules Area at an altitude lower than the following:

(a) Eastern section from Lee’s Ferry to North Canyon: 5,000 feet MSL.
(b) Eastern section from North Canyon to Boundary Ridge: 6,000 feet MSL.
(c) Boundary Ridge to Supai (Yumtheska) Point: 7,500 feet MSL.
(d) Supai Point to Diamond Creek: 6,500 feet MSL.
(e) Western section from Diamond Creek to the Grand Wash Cliffs: 5,000 feet MSL.

Federal Aviation Administration, DOT

SFAR No. 50-2

SPECIAL FEDERAL AVIATION REGULATION NO. 51-1

SPECIAL FLIGHT RULES IN THE VICINITY OF LOS ANGELES INTERNATIONAL AIRPORT

Section 1. Applicability: This rule establishes a special operating area for persons operating aircraft under visual flight rules (VFR) in the following airspace of the Los Angeles Class B airspace area designated as the Los Angeles Special Flight Rules Area:

That part of Area A of the Los Angeles TCA between 3,500 feet above mean sea level (MSL) and 4,500 feet MSL, inclusive, bounded on the north by Ballona Creek, on the east by the San Diego Freeway, on the south by Imperial Highway, and on the west by the Pacific Ocean shoreline.

Section 2. Aircraft operations, general. Unless otherwise authorized by the Administrator, no person may operate an aircraft in the airspace described in Section 1 unless the operation is conducted under the following rules:

a. The flight must be conducted under VFR and only when operation may be conducted in compliance with §91.155(a).
b. The aircraft must be equipped as specified in FAR 91.215(b) replying on Code 1201 prior to entering and while operating in this area.
c. The pilot shall have a current Los Angeles Terminal Area Chart in the aircraft.
d. The pilot shall operate on the Santa Monica very high frequency omni-directional radio range (VOR) 132° radial.
e. Operations in a southeasterly direction shall be in level flight at 3,500 feet MSL.
f. Operations in a northwesterly direction shall be in level flight at 4,500 feet MSL.
g. Indicated airspeed shall not exceed 140 knots.
h. Anticollision lights and aircraft position/navigation lights shall be on. Use of landing lights is recommended.
i. Turbojet aircraft are prohibited from VFR operations in this area.

Section 3. Notwithstanding the provisions of §91.131(a), an air traffic control authorization is not required in the Los Angeles Special Flight Rules Area for operations in compliance with section 2 of this SFAR. All other provisions of §91.131 apply to operate in the Special Flight Rules Area.


[Sec. 91.215(b) as amended by Amdt. 91-227, 56 FR 56652, Dec. 17, 1991]

SPECIAL FEDERAL AVIATION REGULATION NO. 60—AIR TRAFFIC CONTROL SYSTEM EMERGENCY OPERATION

1. Each person shall, before conducting any operation under the Federal Aviation Regulations (14 CFR chapter I), be familiar with all available information concerning that operation, including Notices to Airmen issued under §91.139 and, when activated, the provisions of the National Air Traffic Reduced Complement Operations Plan available for inspection at operating air traffic facilities and Regional air traffic division offices, and the General Aviation Reservation Program. No operator may change the designated airport of intended operation for any flight contained in the October 1, 1990, OAG.

2. Notwithstanding any provision of the Federal Aviation Regulations to the contrary, no person may operate an aircraft in the Air Traffic Control System:

a. Contrary to any restriction, prohibition, procedure or other action taken by the Director of the Office of Air Traffic Systems Management (Director) pursuant to paragraph 3 of this regulation and announced in a Notice to Airmen pursuant to §91.139 of the Federal Aviation Regulations.
b. When the National Air Traffic Reduced Complement Operations Plan is activated pursuant to paragraph 4 of this regulation, except in accordance with the pertinent provisions of the National Air Traffic Reduced Complement Operations Plan.

3. Prior to or in connection with the implementation of the RCOP, and as conditions warrant, the Director is authorized to:

a. Restrict, prohibit, or permit VFR and/or IFR operations at any airport, Class B airspace area, Class C airspace area, or other class of controlled airspace.
b. Give priority at any airport to flights that are of military necessity, or are medical emergency flights, Presidential flights, and flights transporting critical Government employees.
c. Implement, at any airport, traffic management procedures, that may include reduction of flight operations. Reduction of flight operations will be accomplished, to the extent practical, on a pro rata basis among and between air carrier, commercial operator, and general aviation operations. Flights cancelled under this SFAR at a high density traffic airport will be considered to have been operated for purposes of part 93 of the Federal Aviation Regulations.

4. The Director may activate the National Air Traffic Reduced Complement Operations Plan at any time he finds that it is necessary for the safety and efficiency of the National Airspace System. Upon activation of the RCOP and notwithstanding any provision of the FAR to the contrary, the Director is authorized to suspend or modify any airspace designation.

5. Notice of restrictions, prohibitions, procedures and other actions taken by the Director under this regulation with respect to the operation of the Air Traffic Control system will be announced in Notices to Airmen...
Special Federal Aviation Regulation
No. 61-2—Prohibition Against Certain Flights Between the United States and Iraq

1. Applicability. This Special Federal Aviation Regulation (SFAR) No. 61-2 applies to all aircraft operations originating from, landing in, or overflying the territory of the United States.

2. Special flight restrictions. Except as provided in paragraphs 3 and 4 of this SFAR No. 61-2—
   (a) No person shall operate an aircraft on a flight to any point in Iraq, or to any intermediate point on a flight where the ultimate destination is any point in Iraq or that includes a landing at any point in Iraq in its intended itinerary, from any point in the United States;
   (b) No person shall operate an aircraft on a flight to any point in the United States from any point in Iraq, or from any intermediate point on a flight where the origin is in Iraq, or from any point on a flight which includes a departure from any point in Iraq in its intended itinerary; or
   (c) No person shall operate an aircraft over the territory of the United States if that aircraft’s flight itinerary includes any landing at or departure from any point in Iraq.

3. Permitted operations. This SFAR shall not prohibit the flight operations between the United States and Iraq described in section 2 of this SFAR by an aircraft authorized to conduct such operations by the United States Government in consultation with the committee established by UN Security Council Resolution 661 (1990), and in accordance with UN Security Council Resolution 666 (1990).

4. Emergency situations. In an emergency that requires immediate decision and action for the safety of the flight, the pilot in command of an aircraft may deviate from this SFAR to the extent required by that emergency. Except for U.S. air carriers and commercial operators that are subject to the requirements of 14 CFR 121.557, 121.559, or 135.19, each person who deviates from this rule shall, within ten (10) days of the deviation, excluding Saturdays, Sundays, and Federal holidays, submit to the nearest FAA Flight Standards District Office a complete report of the operations or the aircraft involved in the deviation, including a description of the deviation and the reasons therefore.

5. Duration. This SFAR No. 61-2 shall remain in effect until further notice.

[Doc. No. 26880, 60 FR 40139, Sept. 21, 1995]
### SFAR No. 62

14 CFR Ch. I (1-1-99 Edition)

#### (2) Airports within a 30-nautical-mile radius of the General Edward Lawrence Logan International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagles Landing Airport, Williamson, GA.</td>
<td>GA3A</td>
<td>1.500</td>
</tr>
<tr>
<td>Fagundes Field Airport, Haraldon, GA.</td>
<td>GA1</td>
<td>1.500</td>
</tr>
<tr>
<td>Gable Branch Airport, Haraldon, GA.</td>
<td>GA0A</td>
<td>1.500</td>
</tr>
<tr>
<td>Georgia Lite Flite Ultralight Airport, Acorw, GA.</td>
<td>GA0</td>
<td>1.500</td>
</tr>
<tr>
<td>Griffin-Spalding County Airport, Griffin, GA.</td>
<td>GA2</td>
<td>1.500</td>
</tr>
<tr>
<td>Howard Private Airport, Jackson, GA.</td>
<td>GA2A</td>
<td>1.500</td>
</tr>
<tr>
<td>Newman Coveta County Airport, Newman, GA.</td>
<td>CCO</td>
<td>1.500</td>
</tr>
<tr>
<td>Peach State Airport, Williamson, GA.</td>
<td>GA7</td>
<td>1.500</td>
</tr>
<tr>
<td>Postl Farm Airport, Oxford, GA.</td>
<td>GA1</td>
<td>1.500</td>
</tr>
<tr>
<td>Powers Airport, Hollonville, GA.</td>
<td>GA3A</td>
<td>1.500</td>
</tr>
<tr>
<td>S &amp; S Landing Strip Airport, Griffin, GA.</td>
<td>GA6A</td>
<td>1.500</td>
</tr>
<tr>
<td>Shade Tree Airport, Hollonville, GA.</td>
<td>GA73</td>
<td>1.500</td>
</tr>
<tr>
<td>Unknown Field Airport, Southborough, MA.</td>
<td>MA5A</td>
<td>2.500</td>
</tr>
</tbody>
</table>

#### (3) Airports within a 30-nautical-mile radius of the Charlotte/Douglas International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arant Airport, Wingate, NC</td>
<td>NC6</td>
<td>2.500</td>
</tr>
<tr>
<td>Bradley Outernational Airport, China Grove, NC.</td>
<td>NC29</td>
<td>2.500</td>
</tr>
<tr>
<td>Chester Municipal Airport, Chester, SC.</td>
<td>8A6</td>
<td>2.500</td>
</tr>
<tr>
<td>China Grove Airport, China Grove, NC.</td>
<td>7A6</td>
<td>2.500</td>
</tr>
<tr>
<td>Goodnight's Airport, Kannapolis, NC.</td>
<td>NC8</td>
<td>2.500</td>
</tr>
<tr>
<td>Knapp Airport, Marshville, NC.</td>
<td>NC4</td>
<td>2.500</td>
</tr>
<tr>
<td>Lake Norman Airport, Mooresville, NC.</td>
<td>CA4</td>
<td>2.500</td>
</tr>
<tr>
<td>Lancaster County Airport, Lancaster, SC.</td>
<td>LKR</td>
<td>2.500</td>
</tr>
<tr>
<td>Little Mountain Airport, Denver, NC.</td>
<td>LKR</td>
<td>2.500</td>
</tr>
<tr>
<td>Long Island Airport, Long Island, NC.</td>
<td>NG26</td>
<td>2.500</td>
</tr>
<tr>
<td>Miller Airport, Mooresville, NC.</td>
<td>8A2</td>
<td>2.500</td>
</tr>
<tr>
<td>U S Helipot, Wingate, NC.</td>
<td>NC6</td>
<td>2.500</td>
</tr>
<tr>
<td>Unity Aerodrome Airport, Lancaster, SC.</td>
<td>SC76</td>
<td>2.500</td>
</tr>
<tr>
<td>Wilhelm Airport, Kannapolis, NC.</td>
<td>NC6C</td>
<td>2.500</td>
</tr>
</tbody>
</table>

#### (4) Airports within a 30-nautical-mile radius of the Chicago-O'Hara International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aurora Municipal Airport, Chicago/ Aurora, IL.</td>
<td>ARR</td>
<td>1.200</td>
</tr>
<tr>
<td>Donald Alfred Gade Airport, Antioch, IL.</td>
<td>IL11</td>
<td>1.200</td>
</tr>
<tr>
<td>Dr. Joseph W. Esser Airport, Hamp shire, IL.</td>
<td>7L6</td>
<td>1.200</td>
</tr>
<tr>
<td>Flying M. Farm Airport, Aurora, IL.</td>
<td>IL20</td>
<td>1.200</td>
</tr>
<tr>
<td>Fox Lake SPB, Fox Lake, IL.</td>
<td>IS03</td>
<td>1.200</td>
</tr>
<tr>
<td>Graham SPB, Crystal Lake, IL.</td>
<td>IS79</td>
<td>1.200</td>
</tr>
<tr>
<td>Herbert C. Mass Airport, Zion, IL.</td>
<td>IL02</td>
<td>1.200</td>
</tr>
<tr>
<td>Landings Condominium Airport, Romeoville, IL.</td>
<td>C49</td>
<td>1.200</td>
</tr>
<tr>
<td>Lewis University Airport, Romeoveille, IL.</td>
<td>TOT</td>
<td>1.200</td>
</tr>
<tr>
<td>McHenry Farms Airport, McHenry, IL.</td>
<td>44L</td>
<td>1.200</td>
</tr>
<tr>
<td>Olson Airport, Plato Center, IL.</td>
<td>LL53</td>
<td>1.200</td>
</tr>
<tr>
<td>Redeker Airport, Milford, IL.</td>
<td>IL85</td>
<td>1.200</td>
</tr>
<tr>
<td>Reid RLA Airport, Gilberts, IL.</td>
<td>6IL6</td>
<td>1.200</td>
</tr>
<tr>
<td>Shamrock Beef Cattle Farm Airport, McHenry, IL.</td>
<td>49L</td>
<td>1.200</td>
</tr>
<tr>
<td>Sky Soaring Airport, Union, IL.</td>
<td>55L</td>
<td>1.200</td>
</tr>
<tr>
<td>Waukegan Regional Airport, Waukegan, IL.</td>
<td>UGN</td>
<td>1.200</td>
</tr>
<tr>
<td>Wormley Airport, Oswego, IL.</td>
<td>85L</td>
<td>1.200</td>
</tr>
</tbody>
</table>

#### (5) Airports within a 30-nautical-mile radius of the Cleveland-Hopkins International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akron Fulton, International Airport, Akron, OH.</td>
<td>AKR</td>
<td>1.300</td>
</tr>
<tr>
<td>Buds Airport, Newbury, OH.</td>
<td>40OH</td>
<td>1.300</td>
</tr>
<tr>
<td>Derecky Airport, Auburn Center, OH.</td>
<td>6OL0</td>
<td>1.300</td>
</tr>
<tr>
<td>Hennan Airport, Streetsboro, OH.</td>
<td>69OH</td>
<td>1.300</td>
</tr>
<tr>
<td>Kent State University Airport, Kent, OH.</td>
<td>1G3</td>
<td>1.300</td>
</tr>
<tr>
<td>Lost Nation Airport, Willoughby, OH.</td>
<td>LNN</td>
<td>1.300</td>
</tr>
<tr>
<td>Mills Airport, Mantua, OH.</td>
<td>OH06</td>
<td>1.300</td>
</tr>
<tr>
<td>Portage County Airport, Ravenna, OH.</td>
<td>29G</td>
<td>1.300</td>
</tr>
<tr>
<td>Stoney's Airport, Ravenna, OH.</td>
<td>O02</td>
<td>1.300</td>
</tr>
<tr>
<td>Wadsworth Municipal Airport, Wadsworth, OH.</td>
<td>3G</td>
<td>1.300</td>
</tr>
</tbody>
</table>

#### (6) Airports within a 30-nautical-mile radius of the Dallas/Fort Worth International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beggs Ranch/Aledo Airport, Aledo, TX.</td>
<td>TX15</td>
<td>1.800</td>
</tr>
<tr>
<td>Belcher Airport, Sanger, TX.</td>
<td>TA25</td>
<td>1.800</td>
</tr>
<tr>
<td>Bird Dog Field Airport, Krum, TX.</td>
<td>TA48</td>
<td>1.800</td>
</tr>
<tr>
<td>Bee-Winkle Airport, Azle, TX.</td>
<td>28TS</td>
<td>1.800</td>
</tr>
<tr>
<td>Flying V Airport, Sanger, TX.</td>
<td>71XS</td>
<td>1.800</td>
</tr>
<tr>
<td>Graham Ranch Airport, Calina, TX.</td>
<td>TX44</td>
<td>1.800</td>
</tr>
<tr>
<td>Haire Airport, Bolivar, TX.</td>
<td>TX33</td>
<td>1.800</td>
</tr>
<tr>
<td>Hartly Field Airport, Denton, TX.</td>
<td>1F3</td>
<td>1.800</td>
</tr>
<tr>
<td>Hawkins' Ranch Strip Airport, Romne, TX.</td>
<td>TA02</td>
<td>1.800</td>
</tr>
<tr>
<td>Horsethief Lake Airport, Sanger, TX.</td>
<td>TE24</td>
<td>1.800</td>
</tr>
<tr>
<td>Ironhead Airport, Sanger, TX.</td>
<td>T58</td>
<td>1.800</td>
</tr>
<tr>
<td>Kezer Air Ranch Airport, Springtown, TX.</td>
<td>61F</td>
<td>1.800</td>
</tr>
<tr>
<td>Lane Field Airport, Sanger, TX.</td>
<td>58F</td>
<td>1.800</td>
</tr>
<tr>
<td>Log Cabin Airport, Aledo, TX.</td>
<td>TX16</td>
<td>1.800</td>
</tr>
<tr>
<td>Lone Star Airport, Denton, TX.</td>
<td>T32</td>
<td>1.800</td>
</tr>
</tbody>
</table>
### Federal Aviation Administration, DOT

#### SFAR No. 62

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhine Meadows Airport, Rhine, TX</td>
<td>TS72</td>
<td>1,800</td>
</tr>
<tr>
<td>Richards Airport, Krum, TX</td>
<td>TA47</td>
<td>1,800</td>
</tr>
<tr>
<td>Tallows Field Airport, Celina, TX</td>
<td>79TS</td>
<td>1,800</td>
</tr>
<tr>
<td>Triple S Airport, Aledo, TX</td>
<td>42XS</td>
<td>1,800</td>
</tr>
<tr>
<td>Warshum Ranch Airport, Denton, TX</td>
<td>4TA1</td>
<td>1,800</td>
</tr>
<tr>
<td>Windy Hill Airport, Denton, TX</td>
<td>46XX</td>
<td>1,800</td>
</tr>
<tr>
<td>Aero Country Airport, McKinney, TX</td>
<td>TX5S</td>
<td>1,400</td>
</tr>
<tr>
<td>Bailey Airport, Midlothian, CO</td>
<td>TX3X</td>
<td>1,400</td>
</tr>
<tr>
<td>Bransom Farm Airport, Burleson, TX</td>
<td>TX42</td>
<td>1,400</td>
</tr>
<tr>
<td>Carroll Air Park Airport, De Soto, TX</td>
<td>F66</td>
<td>1,400</td>
</tr>
<tr>
<td>Carroll Lake View Airport, Venus, TX</td>
<td>70TS</td>
<td>1,400</td>
</tr>
<tr>
<td>Eagle’s Nest Estates Airport, Ovilla, TX</td>
<td>2T36</td>
<td>1,400</td>
</tr>
<tr>
<td>Flying B Ranch Airport, Ovilla, TX</td>
<td>TS71</td>
<td>1,400</td>
</tr>
<tr>
<td>Lancaster Airport, Lancaster, TX</td>
<td>LNC</td>
<td>1,400</td>
</tr>
<tr>
<td>Lewis Farm Airport, Lucas, TX</td>
<td>9TXX</td>
<td>1,400</td>
</tr>
<tr>
<td>Markum Ranch Airport, Fort Worth, TX</td>
<td>TX79</td>
<td>1,400</td>
</tr>
<tr>
<td>McKinney Municipal Airport, McKinney, TX</td>
<td>TXI</td>
<td>1,400</td>
</tr>
<tr>
<td>O’Brien Airport Park, Waxahachie, TX</td>
<td>F25</td>
<td>1,400</td>
</tr>
<tr>
<td>Phil L. Hudson Municipal Airport, Mesquite, TX</td>
<td>HQZ</td>
<td>1,400</td>
</tr>
<tr>
<td>Plover Heliport, Crowley, TX</td>
<td>82Q</td>
<td>1,400</td>
</tr>
<tr>
<td>Venus Airport, Venus, TX</td>
<td>75TS</td>
<td>1,400</td>
</tr>
</tbody>
</table>

#### (7) Airports within a 30-nautical-mile radius of the Denver International Airport.

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Dusters Inc., Airport, Roggen, CO</td>
<td>49CO</td>
<td>1,200</td>
</tr>
<tr>
<td>Bijou Basin Airport, Byers, CO</td>
<td>CD17</td>
<td>1,200</td>
</tr>
<tr>
<td>Boulder Municipal Airport, Boulder, CO</td>
<td>1V5</td>
<td>1,200</td>
</tr>
<tr>
<td>Bowen Farms No. 1 Airport, Littleton, CO</td>
<td>CO98</td>
<td>1,200</td>
</tr>
<tr>
<td>Bowen Farms No. 2 Airport, Strasburg, CO</td>
<td>3CO5</td>
<td>1,200</td>
</tr>
<tr>
<td>Carriage Park Airport, Mead, CO</td>
<td>93CO</td>
<td>1,200</td>
</tr>
<tr>
<td>Cartwheel Airport, Mead, CO</td>
<td>0CO8</td>
<td>1,200</td>
</tr>
<tr>
<td>Chaparral Airport, Byers, CO</td>
<td>CO18</td>
<td>1,200</td>
</tr>
<tr>
<td>Colorado Antique Field Airport, Nwed, CO</td>
<td>8CO7</td>
<td>1,200</td>
</tr>
<tr>
<td>Comanche Livestock Airport, Strasburg, CO</td>
<td>59CO</td>
<td>1,200</td>
</tr>
<tr>
<td>Dead Stick Ranch Airport, Kiowa, CO</td>
<td>18CO</td>
<td>1,200</td>
</tr>
<tr>
<td>Frederick-Firestone Air Strip Airport, Frederic, CO</td>
<td>CO58</td>
<td>1,200</td>
</tr>
<tr>
<td>Frontier Airstrip Airport, Mead, CO</td>
<td>84CO</td>
<td>1,200</td>
</tr>
<tr>
<td>Horsehoe Landings Airport, Keenesburg, CO</td>
<td>CO60</td>
<td>1,200</td>
</tr>
<tr>
<td>Hoy Airstrip Airport, Bennett, CO</td>
<td>76CO</td>
<td>1,200</td>
</tr>
<tr>
<td>J &amp; S Airport, Conover, CO</td>
<td>CD14</td>
<td>1,200</td>
</tr>
<tr>
<td>Kastroski Airport, Franktown, CO</td>
<td>43CO</td>
<td>1,200</td>
</tr>
<tr>
<td>Kugel-Strong Airport, Plattenville, CO</td>
<td>27V</td>
<td>1,200</td>
</tr>
<tr>
<td>Land Airport, Keenesburg, CO</td>
<td>CO82</td>
<td>1,200</td>
</tr>
<tr>
<td>Lemons Private Strip Airport, Boulder, CO</td>
<td>CO10</td>
<td>1,200</td>
</tr>
<tr>
<td>Lindys Airport Park, Hudson, CO</td>
<td>7CO3</td>
<td>1,200</td>
</tr>
<tr>
<td>Parkland Airport, Erie, CO</td>
<td>7CO0</td>
<td>1,200</td>
</tr>
<tr>
<td>Pine View Airport, Elizabeth, CO</td>
<td>82V</td>
<td>1,200</td>
</tr>
<tr>
<td>Plate Valley Airport, Hudson, CO</td>
<td>18V</td>
<td>1,200</td>
</tr>
<tr>
<td>Rancho De Aereo Airport, Mead, CO</td>
<td>05CO</td>
<td>1,200</td>
</tr>
<tr>
<td>Reid Ranches Airport, Roggen, CO</td>
<td>7CO6</td>
<td>1,200</td>
</tr>
<tr>
<td>Singleton Ranch Airport, Byers, CO</td>
<td>68CO</td>
<td>1,200</td>
</tr>
<tr>
<td>Sky Haven Airport, Byers, CO</td>
<td>CO17</td>
<td>1,200</td>
</tr>
<tr>
<td>Spickhard Farm Airport, Byers, CO</td>
<td>5C04</td>
<td>1,200</td>
</tr>
<tr>
<td>Tri-County Airport, Erie, CO</td>
<td>48V</td>
<td>1,200</td>
</tr>
<tr>
<td>Westberry-Rosing Farms Airport, Roggen, CO</td>
<td>74CO</td>
<td>1,200</td>
</tr>
</tbody>
</table>

#### (8) Airports within a 30-nautical-mile radius of the Detroit Metropolitan Wayne County Airport.

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al Meyers Airport, Tecumseh, MI</td>
<td>3TE</td>
<td>1,400</td>
</tr>
<tr>
<td>Brighton Airport, Brighton, MI</td>
<td>45G</td>
<td>1,400</td>
</tr>
<tr>
<td>Cackleberry Airport, Dexter, MI</td>
<td>2M69</td>
<td>1,400</td>
</tr>
<tr>
<td>ERE Aerodrome Airport, Erie, MI</td>
<td>05MI</td>
<td>1,400</td>
</tr>
<tr>
<td>Ham-A-Lot Field Airport, Petersburg, MI</td>
<td>M648</td>
<td>1,400</td>
</tr>
<tr>
<td>Merilll Airport, Tecumseh, MI</td>
<td>34G</td>
<td>1,400</td>
</tr>
<tr>
<td>Rossette Airport, Manchester, MI</td>
<td>75G</td>
<td>1,400</td>
</tr>
<tr>
<td>Tecumseh Products Airport, Tecumseh, MI</td>
<td>05G2</td>
<td>1,400</td>
</tr>
</tbody>
</table>

#### (9) Airports within a 30-nautical-mile radius of the Honolulu International Airport.

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dillingham Airfield Airport, Molokulea, HI.</td>
<td>DHO</td>
<td>2,500</td>
</tr>
</tbody>
</table>

#### (10) Airports within a 30-nautical-mile radius of the Houston Intercontinental Airport and the William P. Hobby Airport.

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ainsworth Airport, Cleveland, TX</td>
<td>OT6</td>
<td>1,200</td>
</tr>
<tr>
<td>Ausinna Ranch Airport, Texas City, TX</td>
<td>TS50</td>
<td>1,200</td>
</tr>
<tr>
<td>Bailes Airport, Angleton, TX</td>
<td>7R9</td>
<td>1,200</td>
</tr>
<tr>
<td>Biggin Hill Airport, Hockley, TX</td>
<td>TX49</td>
<td>1,200</td>
</tr>
<tr>
<td>Cleveland Municipal Airport, Cleveland, CO</td>
<td>6F3</td>
<td>1,200</td>
</tr>
<tr>
<td>Covey Trails Airport, Fulshear, TX</td>
<td>80XS</td>
<td>1,200</td>
</tr>
<tr>
<td>Creassy Airport, Santa Fe, TX</td>
<td>5TAS</td>
<td>1,200</td>
</tr>
<tr>
<td>Custom Air Service Airport, Angleton, TX</td>
<td>81D</td>
<td>1,200</td>
</tr>
<tr>
<td>Fay Ranch Airport, Cedar Lake, TX</td>
<td>OT2</td>
<td>1,200</td>
</tr>
<tr>
<td>Flying C Ranch Airport, Needville, TX</td>
<td>XS25</td>
<td>1,200</td>
</tr>
<tr>
<td>Freeman Property Airport, Katy, TX</td>
<td>61T</td>
<td>1,200</td>
</tr>
<tr>
<td>Garrett Ranch Airport, Danbury, TX</td>
<td>77XS</td>
<td>1,200</td>
</tr>
<tr>
<td>Gum Island Airport, Dayton, TX</td>
<td>3T6</td>
<td>1,200</td>
</tr>
<tr>
<td>H &amp; S Airfield Airport, Damon, TX</td>
<td>XS21</td>
<td>1,200</td>
</tr>
<tr>
<td>Harbican Airport, Katy, TX</td>
<td>9XS9</td>
<td>1,200</td>
</tr>
<tr>
<td>Harold Freeman Farm Airport, Katy, TX</td>
<td>8XS1</td>
<td>1,200</td>
</tr>
<tr>
<td>HHI Hitchcock Heliport, Hitchcock, TX</td>
<td>6TAS</td>
<td>1,200</td>
</tr>
<tr>
<td>Hoffpaur Airport, Katy, TX</td>
<td>59T</td>
<td>1,200</td>
</tr>
<tr>
<td>Horn-Katy Hawk International Airport, Katy, TX</td>
<td>5T7</td>
<td>1,200</td>
</tr>
<tr>
<td>Johnnie Volk Field Airport, Hitchcock, TX</td>
<td>37R</td>
<td>1,200</td>
</tr>
<tr>
<td>King Air Airport, Katy, TX</td>
<td>55T</td>
<td>1,200</td>
</tr>
<tr>
<td>Lake Bay Gail Airport, Cleveland, TX</td>
<td>OT5</td>
<td>1,200</td>
</tr>
<tr>
<td>Lake Bonanza Airport, Montgomery, TX</td>
<td>3TA</td>
<td>1,200</td>
</tr>
<tr>
<td>Lane Airpark Airport, Rosenberg, TX</td>
<td>T54</td>
<td>1,200</td>
</tr>
<tr>
<td>Meyer Field Airport, Rosharon, TX</td>
<td>TA33</td>
<td>1,200</td>
</tr>
<tr>
<td>Prairie Airfield Airport, Damon, TX</td>
<td>4TA0</td>
<td>1,200</td>
</tr>
<tr>
<td>R W J Airpark Airport, Baytown, TX</td>
<td>54TX</td>
<td>1,200</td>
</tr>
<tr>
<td>Weshtemer Air Park Airport, Houston, TX</td>
<td>5TA4</td>
<td>1,200</td>
</tr>
</tbody>
</table>

#### (11) Airports within a 30-nautical-mile radius of the Kansas City International Airport.

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoder Airstrip Airport, Bennett, CO</td>
<td>CD09</td>
<td>1,200</td>
</tr>
</tbody>
</table>

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177
<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amelia Earhart Airport, Atchison, KS</td>
<td>K59</td>
<td>1,000</td>
</tr>
<tr>
<td>Bozeman Island Airport, St. Joseph, MO</td>
<td>64MO</td>
<td>1,000</td>
</tr>
<tr>
<td>Cedar Air Park Airport, Olathe, KS</td>
<td>51K</td>
<td>1,000</td>
</tr>
<tr>
<td>D·Field Airport, McLouth, KS</td>
<td>K390</td>
<td>1,000</td>
</tr>
<tr>
<td>Dorel Airport, McLouth, KS</td>
<td>K69</td>
<td>1,000</td>
</tr>
<tr>
<td>East Kansas City Airport, Grain Valley, MO</td>
<td>GAV</td>
<td>1,000</td>
</tr>
<tr>
<td>Excelsior Springs Memorial Airport, Excelsior Springs, MO</td>
<td>JEX</td>
<td>1,000</td>
</tr>
<tr>
<td>Flying T Airport Oskaloosa, KS</td>
<td>JKS0</td>
<td>1,000</td>
</tr>
<tr>
<td>Hermon Farm Airport, Gardner, KS</td>
<td>K559</td>
<td>1,000</td>
</tr>
<tr>
<td>Hillside Airport, Silvis, KS</td>
<td>E3K</td>
<td>1,000</td>
</tr>
<tr>
<td>Independence Memorial Airport, Independence, MO</td>
<td>JIP</td>
<td>1,000</td>
</tr>
<tr>
<td>Johnson County Executive Airport, Olathe, KS</td>
<td>JOC</td>
<td>1,000</td>
</tr>
<tr>
<td>Johnson County Industrial Airport, Olathe, KS</td>
<td>JXD</td>
<td>1,000</td>
</tr>
<tr>
<td>Kimray Airport, Plattsburg, MO</td>
<td>JMO7</td>
<td>1,000</td>
</tr>
<tr>
<td>Lawrence Municipal Airport, Lawrence, KS</td>
<td>LWG</td>
<td>1,000</td>
</tr>
<tr>
<td>Martins Airport, Lawson, MO</td>
<td>JMO1</td>
<td>1,000</td>
</tr>
<tr>
<td>Mayes Homestead Airport, Polo, MO</td>
<td>JMO4</td>
<td>1,000</td>
</tr>
<tr>
<td>McComas-Lee’s Summit Municipal Airport, Lee's Summit, MO</td>
<td>K84</td>
<td>1,000</td>
</tr>
<tr>
<td>Mission Road Airport, Silvis, KS</td>
<td>J6K</td>
<td>1,000</td>
</tr>
<tr>
<td>Northwood Airport, Holt, MO</td>
<td>JMO2</td>
<td>1,000</td>
</tr>
<tr>
<td>Plattsburg Airpark, Airport, Plattsburg, MO</td>
<td>JMO28</td>
<td>1,000</td>
</tr>
<tr>
<td>Richards-Gebaur Airport, Kansas City, MO</td>
<td>GVV</td>
<td>1,000</td>
</tr>
<tr>
<td>Rosecrans Memorial Airport, St. Joseph, MO</td>
<td>JST</td>
<td>1,000</td>
</tr>
<tr>
<td>Runway Ranch Airport, Kansas City, MO</td>
<td>JMO9</td>
<td>1,000</td>
</tr>
<tr>
<td>Sheller’s Airport, Toms River, NJ</td>
<td>NJ60</td>
<td>2,000</td>
</tr>
<tr>
<td>Shommon Airport, Oskaloosa, KS</td>
<td>JKS1</td>
<td>1,000</td>
</tr>
<tr>
<td>Stonehenge Airport, Williams-town, KS</td>
<td>JKS1</td>
<td>1,000</td>
</tr>
<tr>
<td>Thrashing Bee Airport, McLouth, KS</td>
<td>JIK</td>
<td>1,000</td>
</tr>
</tbody>
</table>

(12) Airport within a 30-nautical-mile radius of the McCarran International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sky Ranch Estates Airport, Sandy Valley, NV</td>
<td>JL2</td>
<td>2,500</td>
</tr>
</tbody>
</table>

(13) Airports within a 30-nautical-mile radius of the Memphis International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bernard Manor Airport, Earle, AR</td>
<td>M65</td>
<td>2,500</td>
</tr>
<tr>
<td>Holly Springs-Marshall County Airport, Holly Springs, MS</td>
<td>M41</td>
<td>2,500</td>
</tr>
<tr>
<td>McNeely Airport, Earle, AR</td>
<td>M63</td>
<td>2,500</td>
</tr>
<tr>
<td>Price Field Airport, Joiner, AR</td>
<td>80M</td>
<td>2,500</td>
</tr>
<tr>
<td>Tucker Field Airport, Hughes, AR</td>
<td>78M</td>
<td>2,500</td>
</tr>
<tr>
<td>Tunica Airport, Tunica, MS</td>
<td>M95</td>
<td>2,500</td>
</tr>
<tr>
<td>Tunica Municipal Airport, Tunica, MS</td>
<td>M97</td>
<td>2,500</td>
</tr>
</tbody>
</table>

(14) Airports within a 30-nautical-mile radius of the Minneapolis-St. Paul International Wold-Chamberlain Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
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</thead>
<tbody>
<tr>
<td>Belle Plaine Airport, Belle Plaine, MN</td>
<td>7Y7</td>
<td>1,200</td>
</tr>
</tbody>
</table>

(15) Airports within a 30-nautical-mile radius of the New Orleans International/Moison Field Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bollinger SPB, Larose, LA</td>
<td>L38</td>
<td>1,500</td>
</tr>
<tr>
<td>Clovey Airport, Cut Off, LA</td>
<td>L29</td>
<td>1,500</td>
</tr>
</tbody>
</table>

(16) Airports within a 30-nautical-mile radius of the John F. Kennedy International Airport, the La Guardia Airport, and the Newark International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allaire Airport, Belmar/Farmingdale, NJ</td>
<td>BLN</td>
<td>2,000</td>
</tr>
<tr>
<td>Cuddihy Landing Strip Airport, Freehold, NJ</td>
<td>N60</td>
<td>2,000</td>
</tr>
<tr>
<td>Elkaid Airport, Freehold, NJ</td>
<td>NJ59</td>
<td>2,000</td>
</tr>
<tr>
<td>Flx-Net Airport, Netcong, NJ</td>
<td>ONJ5</td>
<td>2,000</td>
</tr>
<tr>
<td>Forrestal Airport, Princeton, NJ</td>
<td>N21</td>
<td>2,000</td>
</tr>
<tr>
<td>Greenwood Lake Airport, West Milford, NJ</td>
<td>4N1</td>
<td>2,000</td>
</tr>
<tr>
<td>Greenwood Lake SPB, West Milford, NJ</td>
<td>6N7</td>
<td>2,000</td>
</tr>
<tr>
<td>Lance Airport, Whitehouse Station, NJ</td>
<td>6N38</td>
<td>2,000</td>
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<tr>
<td>Mar Bar L Farms, Englishtown, NJ</td>
<td>NJ46</td>
<td>2,000</td>
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<tr>
<td>Peakeskill SPB, Peeksill, NY</td>
<td>7N2</td>
<td>2,000</td>
</tr>
<tr>
<td>Peters Airport, Somerville, NJ</td>
<td>4N8J</td>
<td>2,000</td>
</tr>
<tr>
<td>Princeton Airport, Princeton/Rocky Hill, NJ</td>
<td>39N</td>
<td>2,000</td>
</tr>
<tr>
<td>Solberg-Hunterdon Airport, Readington, NJ</td>
<td>N51</td>
<td>2,000</td>
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</table>

(17) Airports within a 30-nautical-mile radius of the Orlando International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthur Dunn Air Park Airport, Titusville, FL</td>
<td>X21</td>
<td>1,400</td>
</tr>
<tr>
<td>Space Center Executive Airport, Titusville, FL</td>
<td>TXK</td>
<td>1,400</td>
</tr>
</tbody>
</table>

(18) Airports within a 30-nautical-mile radius of the Philadelphia International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ginnings Airport, West Grove, PA</td>
<td>78N</td>
<td>1,000</td>
</tr>
<tr>
<td>Hammonton Municipal Airport, Hammonton, NJ</td>
<td>N81</td>
<td>1,000</td>
</tr>
<tr>
<td>Li Calzi Airport, Bridgeton, NJ</td>
<td>N50</td>
<td>1,000</td>
</tr>
</tbody>
</table>
Federal Aviation Administration, DOT

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New London Airport, New London, PA</td>
<td>N01</td>
<td>1,000</td>
</tr>
<tr>
<td>Wide Sky Airpark Airport, Bridgeton, NJ</td>
<td>N39</td>
<td>1,000</td>
</tr>
</tbody>
</table>

(19) Airports within a 30-nautical-mile radius of the Phoenix Sky Harbor International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ak Chin Community Airfield Airport, Maricopa, AZ</td>
<td>E31</td>
<td>2,500</td>
</tr>
<tr>
<td>Boulais Ranch Airport, Maricopa, AZ</td>
<td>9E7</td>
<td>2,500</td>
</tr>
<tr>
<td>Estrella Field Airport, Maricopa, AZ</td>
<td>E68</td>
<td>2,500</td>
</tr>
<tr>
<td>Hidden Valley Ranch Airport, Maricopa, AZ</td>
<td>AZ17</td>
<td>2,500</td>
</tr>
<tr>
<td>Millar Airport, Maricopa, AZ</td>
<td>2A24</td>
<td>2,500</td>
</tr>
<tr>
<td>Pleasant Valley Airport, New River, AZ</td>
<td>AZ05</td>
<td>2,500</td>
</tr>
<tr>
<td>Serene Field Airport, Maricopa, AZ</td>
<td>AZ31</td>
<td>2,500b</td>
</tr>
<tr>
<td>Sky Ranch Carefree Airport, Carefree, AZ</td>
<td>E18</td>
<td>2,500</td>
</tr>
<tr>
<td>Sycamore Creek Airport, Fountain Hills, AZ</td>
<td>OAS0</td>
<td>2,500</td>
</tr>
<tr>
<td>University of Arizona, Maricopa Agricultural Center Airport, Maricopa, AZ</td>
<td>AZ22</td>
<td>2,500</td>
</tr>
</tbody>
</table>

(20) Airports within a 30-nautical-mile radius of the Lambert/St. Louis International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackhawk Airport, Old Monroe, MO</td>
<td>6MO0</td>
<td>1,000</td>
</tr>
<tr>
<td>Lebert Flying L Airport, Lebanon, MO</td>
<td>3HS</td>
<td>1,000</td>
</tr>
<tr>
<td>Shafer Metro East Airport, St. Jacob, IL</td>
<td>3K6</td>
<td>1,000</td>
</tr>
<tr>
<td>Sloan’s Airport, Eldersby, MO</td>
<td>0M08</td>
<td>1,000</td>
</tr>
<tr>
<td>Wentzville Airport, Wentzville, MO</td>
<td>M50</td>
<td>1,000</td>
</tr>
<tr>
<td>Woodliff Airport Park, Forsistol, MO</td>
<td>98MO</td>
<td>1,000</td>
</tr>
</tbody>
</table>

(21) Airports within a 30-nautical-mile radius of the Salt Lake City International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolinder Field-Tooele Valley Airport, Tooele, UT</td>
<td>TVY</td>
<td>2,500</td>
</tr>
<tr>
<td>Cedar Valley Airport, Cedar Fort, UT</td>
<td>UT10</td>
<td>2,500</td>
</tr>
<tr>
<td>Morgan County Airport, Morgan, UT</td>
<td>42U</td>
<td>2,500</td>
</tr>
<tr>
<td>Tooele Municipal Airport, Tooele, UT</td>
<td>U26</td>
<td>2,500</td>
</tr>
</tbody>
</table>

(22) Airports within a 30-nautical-mile radius of the Seattle-Tacoma International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firstar Field Airport, Monroe, WA</td>
<td>WA38</td>
<td>1,500</td>
</tr>
<tr>
<td>Gower Field Airport, Olympia, WA</td>
<td>6WAZ</td>
<td>1,500</td>
</tr>
<tr>
<td>Harvey Field Airport, Snohomish, WA</td>
<td>543</td>
<td>1,500</td>
</tr>
</tbody>
</table>

(23) Airports within a 30-nautical-mile radius of the Tampa International Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hernando County Airport, Brooksville, FL</td>
<td>BKV</td>
<td>1,500</td>
</tr>
<tr>
<td>Lakeland Municipal Airport, Lakeeland, FL</td>
<td>LAL</td>
<td>1,500</td>
</tr>
<tr>
<td>Zephyrhills Municipal Airport, Zephyrhills, FL</td>
<td>ZPH</td>
<td>1,500</td>
</tr>
</tbody>
</table>

(24) Effective until the establishment of the Washington Tri-Area Class B airspace area or December 30, 1993, whichever occurs first: Airports within a 30-nautical-mile radius of the Washington National Airport and Andrews Air Force Base Airport.

<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnes Airport, Lisbon, MD</td>
<td>MD47</td>
<td>2,000</td>
</tr>
<tr>
<td>Bay Bridge Airport, Stevensville, MD</td>
<td>W29</td>
<td>2,000</td>
</tr>
<tr>
<td>Castle Marina Airport, Chester, MD</td>
<td>W06</td>
<td>2,000</td>
</tr>
<tr>
<td>Davis Airport, Laytonsville, MD</td>
<td>W50</td>
<td>2,000</td>
</tr>
<tr>
<td>Fremont Airport, Kemptown, MD</td>
<td>MD41</td>
<td>2,000</td>
</tr>
<tr>
<td>Kenton Airport, Stevensville, MD</td>
<td>W3W</td>
<td>2,000</td>
</tr>
<tr>
<td>Montgomery County Airport, Gaithersburg, MD</td>
<td>GAI</td>
<td>2,000</td>
</tr>
<tr>
<td>Waredaca Farm Airport, Brookeville, MD</td>
<td>MD16</td>
<td>2,000</td>
</tr>
<tr>
<td>Aqua-Land/Clifton Skypark Airport, Newburg, MD</td>
<td>2W8</td>
<td>1,000</td>
</tr>
<tr>
<td>Buds Ferry Airport, Indian Head, MD</td>
<td>MD39</td>
<td>1,000</td>
</tr>
<tr>
<td>Burgess Field Airport, Riverside, MD</td>
<td>3W1</td>
<td>1,000</td>
</tr>
<tr>
<td>Chimney View Airport, Fredericksburg, VA</td>
<td>5VA5</td>
<td>1,000</td>
</tr>
<tr>
<td>Holly Springs Farm Airport, Nanjemoy, MD</td>
<td>MD55</td>
<td>1,000</td>
</tr>
<tr>
<td>Lanseair Farms Airport, La Plata, MD</td>
<td>MD97</td>
<td>1,000</td>
</tr>
<tr>
<td>Nyce Airport, Mount Victoria, MD</td>
<td>MD84</td>
<td>1,000</td>
</tr>
<tr>
<td>Parks Airport, Nanjemoy, MD</td>
<td>MD54</td>
<td>1,000</td>
</tr>
<tr>
<td>Pilots Cove Airport, Tompkinsville, MD</td>
<td>MD06</td>
<td>1,000</td>
</tr>
<tr>
<td>Quantico MCAS, Quantico, VA</td>
<td>NYG</td>
<td>1,000</td>
</tr>
<tr>
<td>Stewart Airport, St. Michaels, MD</td>
<td>MD64</td>
<td>1,000</td>
</tr>
<tr>
<td>U.S. Naval Weapons Center, Dahlgren Lab Airport, Dahlgren, VA</td>
<td>NDY</td>
<td>1,000</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albrecht Airstrip Airport, Long Green, MD</td>
<td>MD48</td>
<td>2,000</td>
</tr>
<tr>
<td>Armacost Farms Airport, Hampstead, MD</td>
<td>MD38</td>
<td>2,000</td>
</tr>
<tr>
<td>Barnes Airport, Lisbon, MD</td>
<td>MD47</td>
<td>2,000</td>
</tr>
<tr>
<td>Bay Bridge Airport, Stevensville, MD</td>
<td>W29</td>
<td>2,000</td>
</tr>
<tr>
<td>Carroll County Airport, Westminster, MD</td>
<td>W54</td>
<td>2,000</td>
</tr>
<tr>
<td>Castle Marina Airport, Chester, MD</td>
<td>OW6</td>
<td>2,000</td>
</tr>
<tr>
<td>Cleanview Airpark Airport, Westminster, MD</td>
<td>2W2</td>
<td>2,000</td>
</tr>
<tr>
<td>Davis Airport, Laytonsville, MD</td>
<td>W50</td>
<td>2,000</td>
</tr>
<tr>
<td>Fallston Airport, Fallston, MD</td>
<td>W42</td>
<td>2,000</td>
</tr>
<tr>
<td>Faux Furhans Airport, Frederick, MD</td>
<td>3MD0</td>
<td>2,000</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Airport name</th>
<th>Arpt ID</th>
<th>Alt. (AGL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest Hill Airport, Forest Hill, MD</td>
<td>MD01</td>
<td>2,000</td>
</tr>
<tr>
<td>Fort DetrickHelpstart Airport, Fort Detrick (Frederick), MD</td>
<td>MD32</td>
<td>2,000</td>
</tr>
<tr>
<td>Frederick Municipal Airport, Frederick, MD</td>
<td>FDK</td>
<td>2,000</td>
</tr>
<tr>
<td>Fremont Airport, Kentford-MD</td>
<td>MD41</td>
<td>2,000</td>
</tr>
<tr>
<td>Good Neighbor Farm Airport, Unionville, MD</td>
<td>MD74</td>
<td>2,000</td>
</tr>
<tr>
<td>Happy Landings Farm Airport, Unionville, MD</td>
<td>MD73</td>
<td>2,000</td>
</tr>
<tr>
<td>Harris Airport, Still Pond, MD</td>
<td>MD09</td>
<td>2,000</td>
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<tr>
<td>Hybarc Farm Airport, Chestertown, MD</td>
<td>MD19</td>
<td>2,000</td>
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<td>Kennersley Airport, Church Hill, MD</td>
<td>MD23</td>
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<tr>
<td>Kentmore Airpark Airport, Stevensville, MD</td>
<td>MD35</td>
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<tr>
<td>Montgomery County Airport, Gaithersburg, MD</td>
<td>GA1</td>
<td>2,000</td>
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<td>Phillips AAF, Aberdeen, MD</td>
<td>APG</td>
<td>2,000</td>
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<tr>
<td>Pond View Private Airport, Chestertown, MD</td>
<td>OMD4</td>
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<td>Reservoir Airport, Finksburg, MD</td>
<td>MD75</td>
<td>2,000</td>
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<tr>
<td>Scheeler Field Airport, Chestertown, MD</td>
<td>MD76</td>
<td>2,000</td>
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**SFAR No. 64—SPECIAL FLIGHT AUTHORIZATIONS FOR NOISE RESTRICTED AIRCRAFT**

1. Contrary provisions of part 91, subpart I notwithstanding, an operator of a civil subsonic turbojet airplane with maximum weight of more than 75,000 pounds may conduct an approved limited nonrevenue operation of that airplane to or from a U.S. airport when such operation has been authorized by the FAA under paragraph 2 of this SFAR; and

(a) The operator complies with all conditions and limitations established by this SFAR and the authorization;

(b) A copy of the authorization is carried aboard the airplane during all operations to or from a U.S. airport;

(c) The airplane carries an appropriate airworthiness certificate issued by the country of registration and meets the registration and identification requirements of that country; and

(d) Whenever the application is for operation to a location at which FAA-approved noise abatement retrofit equipment is to be installed to make the aircraft comply with Stage 2 or Stage 3 noise levels as defined in part 36 of this chapter, the applicant must have a valid contract for such equipment.

2. Authorization for the operation of a Stage 1 or Stage 2 civil turboprop airplane to or from a U.S. airport may be issued by the FAA for the following purposes:

**Stage 1 Airplanes**

(a) For a Stage 1 airplane owned by a U.S. owner/applicant on and since November 4, 1990:

(i) Obtaining modifications necessary to meet Stage 2 noise levels as defined in part 36 of this chapter;

(ii) Obtaining modifications necessary to meet Stage 3 noise levels as defined in part 36 of this chapter; or

(iii) Scrapping the airplane, as deemed necessary by the FAA, to obtain spare parts to support U.S. programs for the national defense or safety.

(b) For a Stage 1 airplane owned by a non-U.S. owner/applicant:

(i) Obtaining modifications necessary to meet Stage 2 noise levels as defined in part 36 of this chapter;
Federal Aviation Administration, DOT

(i) Obtaining modifications necessary to meet Stage 3 noise levels as defined in part 36 of this chapter; or
(ii) Obtaining modifications necessary to meet Stage 3 noise levels as defined in part 36 of this chapter; or
(iii) Scrapping the airplane, as deemed necessary by the FAA, to obtain spare parts to support U.S. programs for the national defense or safety;
(c) For a Stage 1 airplane purchased by a U.S. owner/applicant on or after November 5, 1990:
(i) Obtaining modifications necessary to meet Stage 2 noise levels as defined in part 36 of this chapter, provided that the airplane does not subsequently operate in the contiguous United States;
(ii) Obtaining modifications necessary to meet Stage 3 noise levels as defined in part 36 of this chapter; or
(iii) Scrapping the airplane, as deemed necessary by the FAA, to obtain spare parts to support U.S. programs for the national defense or safety.

Stage 2 Airplanes

(d) For a Stage 2 airplane purchased by a U.S. owner/applicant on or after November 5, 1990, obtaining modification to meet Stage 3 noise levels as defined in part 36 of this chapter;
(e) For Stage 2 airplanes that were U.S.-owned on and since November 4, 1990, and that have been removed from service to achieve compliance with §91.865 or §91.867 of this part:
(i) Obtaining modifications to meet Stage 3 noise levels as defined in part 36 of this chapter;
(ii) Prior to January 1, 2000, operating the airplane as deemed necessary by the FAA for the sale, lease, storage, or scrapping of the airplane.
3. An application for a special flight authorization under this Special Federal Aviation Regulation shall be submitted to the FAA, Director of the Office of Environment and Energy, received no less than five days prior to the requested flight, and include the following:
(a) The applicant’s name and telephone number;
(b) The name of the airplane operator;
(c) The make, model, registration number, and serial number of the airplane;
(d) The reason why such authorization is necessary;
(e) The purpose of the flight;
(f) Each U.S. airport at which the flight will be operated and the number of takeoffs and landings at each;
(g) The approximate dates of the flights;
(h) The number of people on board the airplane and the function of each person;
(i) Whether a special flight permit under FAR part 21.199 or a special flight authorization under FAR part 91.715 is required for the flight;
(j) A copy of the contract for noise abatement retrofit equipment, if appropriate; and
(k) Any other information or documentation requested by the Director, Office of Environment and Energy, as necessary to determine whether the application should be approved.
4. The Special Federal Aviation Regulation terminates on December 31, 1999, unless sooner rescinded or superseded.

[S 58 FR 31641, June 3, 1993; Amdt. 91–232, 58 FR 62035, Nov. 24, 1993]

SPECIAL FEDERAL AVIATION REGULATION NO. 65–1—PROHIBITION AGAINST CERTAIN FLIGHTS BETWEEN THE UNITED STATES AND LIBYA

1. Applicability. This Special Federal Aviation Regulation (SFAR) No. 65–1 applies to all aircraft operations originating from, landing in, or overflying the territory of the United States.
2. Special flight restrictions. Except as provided in paragraphs 3 and 4 of this SFAR No. 65–1—
(a) No person shall operate an aircraft on a flight to any point in Libya, or to any intermediate point on a flight where the ultimate destination is any point in Libya and that includes a landing at any point in Libya in its intended itinerary, from any point in the United States;
(b) No person shall operate an aircraft on a flight to any point in the United States from any point in Libya, or from any intermediate point on a flight where the origin is in Libya, or from any point on a flight which includes a departure from any point in Libya in its intended itinerary; or
(c) No person shall operate an aircraft over the territory of the United States if that aircraft’s flight itinerary includes any landing at or departure from any point in Libya.
3. Permitted operations. This SFAR shall not prohibit the flight operations between the United States and Libya described in section 2 of this SFAR by an aircraft authorized to conduct such operations by the United States government in consultation with the committee established by UN Security Council Resolution 748 (1992), as affirmed by UN Security Council Resolution 883 (1993).
4. Emergency situations. In an emergency that requires immediate decision and action for the safety of the flight, the pilot in command of an aircraft may deviate from this SFAR to the extent required by that emergency. Except for U.S. air carriers and commercial operators that are subject to the requirements of 14 CFR 121.557, 121.559, or 125.19, each person who deviates from this

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SFAR No. 66-2

rule shall, within ten (10) days of the deviation, excluding Saturdays, Sundays, and Federal holidays, submit to the nearest FAA Flight Standards District Office a complete report of the operations of the aircraft involved in the deviation, including a description of the deviation and the reasons therefore.

5. Duration. This SFAR No. 65-1 shall remain in effect until further notice.

[SFAR 65-1, 60 FR 48644, Sept. 20, 1995]

SPECIAL FEDERAL AVIATION REGULATION NO. 66-2—PROHIBITION AGAINST CERTAIN FLIGHTS BETWEEN THE UNITED STATES AND THE FEDERAL REPUBLIC OF YUGOSLAVIA (SERBIA AND MONTENEGRO)

1. Applicability. This Special Federal Aviation Regulation (SFAR) applies to all aircraft operations originating from, destined to land in, or overflying the territory of the United States.

2. Special flight restrictions. Except as provided in paragraphs 3 and 4 of this SFAR No. 66-2—

(a) No person shall operate an aircraft from any point in the United States to any point in the Federal Republic of Yugoslavia (Serbia and Montenegro) (hereinafter "Serbia and Montenegro"), a flight having any intermediate or ultimate destination in Serbia and Montenegro, or a flight that includes a landing at any point in Serbia and Montenegro in its intended itinerary;

(b) No person shall operate an aircraft to any point in the United States from any point in Serbia and Montenegro, or a flight from any intermediate or ultimate point of departure where the origin of the flight is in Serbia and Montenegro, or a flight that includes a departure from any point in Serbia and Montenegro in its intended itinerary;

(c) No person shall operate an aircraft over the territory of the United States if that aircraft’s flight itinerary includes any landing at or departure from any point in Serbia and Montenegro.

3. Permitted operations. This SFAR shall not prohibit the flight operations between the United States, Serbia and Montenegro described in section 2 of this SFAR by an aircraft authorized to conduct such operations by the United States Government.

4. Emergency situations. In an emergency that requires immediate decision and action for the safety of the flight, the pilot in command of an aircraft may deviate from this SFAR to the extent required by that emergency. Any deviation required by an emergency shall be reported as soon as possible to the air traffic control facility having jurisdiction.

5. Expiration. This Special Federal Aviation Regulation expires June 2, 1997.

[SFAR 66-2, 60 FR 29477, May 31, 1995]

EFFECTIVE DATE NOTE: By Doc. No. 26903, 61 FR 631, Jan. 9, 1996, Special Federal Aviation Regulation 66-2 was suspended indefinitely.

SPECIAL FEDERAL AVIATION REGULATION NO. 67—PROHIBITION AGAINST CETFRAIN FLIGHTS WITHIN THE TERRITORY AND AIRSPACE OF AFGHANISTAN

1. Applicability. This rule applies to all U.S. air carriers and commercial operators, all persons exercising the privileges of an airman certificate issued by the FAA, and all operators using aircraft registered in the United States except where the operator of such aircraft is a foreign air carrier.

2. Flight prohibition. Except as provided in paragraph 3 and 4 of this SFAR, no person described in paragraph 1 may conduct flight operations within the territory and airspace of Afghanistan.

3. Permitted operations. This SFAR does not prohibit persons described in paragraph 1 from conducting flight operations within the territory and airspace of Afghanistan where such operations are authorized either by exemption issued by the Administrator or by another agency of the United States Government with the approval of the FAA.

4. Emergency situations. In an emergency that requires immediate decision and action for the safety of the flight, the pilot in command of an aircraft may deviate from this SFAR to the extent required by that emergency. Except for U.S. air carriers and commercial operators that are subject to the requirements of 14 CFR 121.557, 121.559, or 135.19, each person who deviated from this rule shall, within ten (10) days of the deviation, submit to the nearest FAA Flight Standards District Office a complete report of the operations of the aircraft involved in the deviation, including a description of the deviation and the reasons therefore.

5. Expiration. This Special Federal Aviation Regulation remains in effect until May 10, 2000.


SFAR NO. 71—SPECIAL OPERATING RULES FOR AIR TOUR OPERATORS IN THE STATE OF HAWAII

Section 1. Applicability. This Special Federal Aviation Regulation prescribes operating rules for airplane and helicopter visual flight
rules air tour flights conducted in the State of Hawaii under 14 CFR parts 91, 121, and 135. This rule does not apply to:
(a) Operations conducted under 14 CFR part 91, 121, or 135 in a passenger seating configuration of more than 30 seats or a payload capacity of more than 7,500 pounds.
(b) Flights conducted in gliders or hot air balloons.

Section 2. Definitions. For the purposes of this SFAR:
"Air tour" means any sightseeing flight conducted under visual flight rules in an airplane or helicopter for compensation or hire. "Air tour operator" means any person who conducts an air tour.

Section 3. Helicopter flotation equipment. No person may conduct an air tour in Hawaii in a single-engine helicopter beyond the shore of any island, regardless of whether the helicopter is within gliding distance of the shore, unless:
(a) The helicopter is amphibious or is equipped with floats adequate to accomplish a safe emergency ditching and approved flotation gear is easily accessible for each occupant; or
(b) Each person on board the helicopter is wearing approved flotation gear.

Section 4. Helicopter performance plan. Each operator must complete a performance plan before each helicopter air tour flight. The performance plan must be based on the information in the Rotorcraft Flight Manual (RFM), considering the maximum density altitude for which the operation is planned for the flight to determine the following:
(a) Maximum gross weight and center of gravity (CG) limitations for hovering in ground effect;
(b) Maximum gross weight and CG limitations for hovering out of ground effect; and,
(c) Maximum combination of weight, altitude, and temperature for which height-velocity information in the RFM is valid.
The pilot in command (PIC) must comply with the performance plan.

Section 5. Helicopter operating limitations. Except for approach to and transition from a hover, the PIC shall operate the helicopter at a combination of height and forward speed (including hover) that would permit a safe landing in event of engine power loss, in accordance with the height-speed envelope for that helicopter under current weight and aircraft altitude.

Section 6. Minimum flight altitudes. Except when necessary for takeoff and landing, or operating in compliance with an air traffic control clearance, or as otherwise authorized by the Administrator, no person may conduct an air tour in Hawaii:
(a) Below an altitude of 1,500 feet above the surface over all areas of the State of Hawaii, and,
(b) Closer than 1,500 feet to any person or property; or,
(c) Below any altitude prescribed by federal statute or regulation.

Section 7. Passenger briefing. Before takeoff, each PIC of an air tour flight of Hawaii with a flight segment beyond the ocean shore of any island shall ensure that each passenger has been briefed on the following, in addition to requirements set forth in 14 CFR 91.107, 121.571, or 135.117:
(a) Water ditching procedures;
(b) Use of required flotation equipment; and,
(c) Emergency egress from the aircraft in event of a water landing.

Section 8. Termination date. This Special Federal Aviation Regulation expires on October 26, 2000.


SPECIAL FEDERAL AVIATION REGULATION No. 77—PROHIBITION AGAINST CERTAIN FLIGHTS WITHIN THE TERRITORY AND AIRSPACE OF IRAQ

1. Applicability. This rule applies to the following persons:
(a) All U.S. air carriers or commercial operators;
(b) All persons exercising the privileges of an airman certificate issued by the FAA except such persons operating U.S.-registered aircraft for a foreign air carrier; or
(c) All operators of aircraft registered in the United States except where the operator of such aircraft is a foreign air carrier.

2. Flight prohibition. Except as provided in paragraphs 3 and 4 of this SFAR, no person described in paragraph 1 may conduct flight operations over or within the territory and airspace of Iraq.

3. Permitted operations. This SFAR does not prohibit persons described in paragraph 1 from conducting flight operations over or within the territory and airspace of Iraq where such operations are authorized either by exemption issued by the Administrator or by another agency of the United States Government.

4. Emergency situations. In an emergency that requires immediate decision and action for the safety of the flight, the pilot in command of an aircraft may deviate from this SFAR to the extent required by that emergency. Except for U.S. air carriers or commercial operators that are subject to the requirements of 14 CFR parts 91, 121, or 135, each person who deviates from this rule shall, within ten (10) days of the deviation, excluding Saturdays, Sundays, and Federal holidays, submit to the nearest FAA Flight Standards District Office a complete report of the operations of the aircraft involved in the deviation including a description of the deviation and the reasons therefore.
5. Expiration. This Special Federal Aviation Regulation will remain in effect until further notice.

[Doc. No. 28691, 61 FR 54021, Oct. 16, 1996]

SFAR No. 78—SPECIAL OPERATING RULES FOR COMMERCIAL AIR TOUR OPERATORS IN THE VICINITY OF THE ROCKY MOUNTAIN NATIONAL PARK

Section 1. Applicability. This Special Federal Aviation Regulation prescribes operating rules for commercial air tour flight operations within the lateral boundaries of the Rocky Mountain National Park, CO.

Sec. 2. Definition. For the purpose of this SFAR: “commercial air tour” means: the operation of an aircraft carrying passengers for compensation or hire for aerial sightseeing.

Sec. 3. Restriction. No person may conduct a commercial air tour operation in the airspace over Rocky Mountain National Park, CO.

Expiration: This SFAR will expire on the adoption of a final rule in Docket No. 27643.


SFAR No. 79—PROHIBITION AGAINST CERTAIN FLIGHTS WITHIN THE TERRITORY AND AIRSPACE OF SUDAN

1. Applicability. This rule applies to all U.S. air carriers and commercial operators, all persons exercising the privileges of an airman certificate issued by the FAA, and all operators using aircraft registered in the United States except where the operator of such aircraft is a foreign air carrier.

2. Flight prohibition. Except as provided in paragraphs 3 and 4 of this SFAR, no person described in paragraph 1 may conduct flight operations within the territory and airspace of Sudan where such operations are authorized either by exemption issued by the Administrator or by another agency of the United States Government with FAA approval.

3. Permitted operations. This SFAR does not prohibit persons described in paragraph 1 from conducting flight operations within the territory and airspace of Sudan where such operations are authorized either by exemption issued by the Administrator or by another agency of the United States Government with FAA approval.

4. Emergency situations. In an emergency that requires immediate decision and action for the safety of the flight, the pilot in command of an aircraft may deviate from this SFAR to the extent required by that emergency. Except for U.S. air carriers and commercial operators that are subject to the requirements of 3 CFR parts 121, 125, or 135, each person who deviates from this rule shall, within ten (10) days of the deviation, excluding Saturdays, Sundays, and Federal holidays, submit to the nearest FAA Flight Standards District Office a complete report of the operations of the aircraft involved in the deviation, including a description of the deviation and the reasons therefore.

5. Expiration. This Special Federal Aviation Regulation No. 79 will remain in effect until further notice.

§ 91.1 Applicability.

(a) Except as provided in paragraph (b) of this section and §91.703, this part prescribes rules governing the operation of aircraft (other than moored balloons, kites, unmanned rockets, and unmanned free balloons, which are governed by part 101 of this chapter, and ultralight vehicles operated in accordance with part 103 of this chapter) within the United States, including the waters within 3 nautical miles of the U.S. coast.

(b) Each person operating an aircraft in the airspace overlying the waters between 3 and 12 nautical miles from the coast of the United States shall comply with §§91.1 through 91.21; §§91.101 through 91.143; §§91.151 through 91.159; §§91.167 through 91.193; §§91.203; §§91.205; §§91.209 through 91.217; §91.221; §§91.303 through 91.319; §§91.323; §§91.605; §§91.609; §§91.703 through 91.715; and 91.903.

§ 91.3 Responsibility and authority of the pilot in command.

(a) The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.

(b) In an in-flight emergency requiring immediate action, the pilot in command may deviate from any rule of this part to the extent required to meet that emergency.

(c) Each pilot in command who deviates from a rule under paragraph (b) of this section shall, upon the request of the Administrator, send a written report of that deviation to the Administrator.

§ 91.7 Civil aircraft airworthiness.

(a) No person may operate a civil aircraft unless it is in an airworthy condition.

(b) The pilot in command of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight. The pilot in command shall discontinue the flight when unairworthy mechanical, electrical, or structural conditions occur.

§ 91.9 Civil aircraft flight manual, marking, and placard requirements.

(a) Except as provided in paragraph (d) of this section, no person may operate a civil aircraft without complying with the operating limitations specified in the approved Airplane or Rotorcraft Flight Manual, markings, and placards, or as otherwise prescribed by the certificating authority of the country of registry.

(b) No person may operate a U.S.-registered civil aircraft—

(1) For which an Airplane or Rotorcraft Flight Manual is required by §21.5 of this chapter unless there is available in the aircraft a current, approved Airplane or Rotorcraft Flight Manual or the manual provided for in §121.141(b); and

(2) For which an Airplane or Rotorcraft Flight Manual is not required by §21.5 of this chapter, unless there is available in the aircraft a current approved Airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof.

(c) No person may operate a U.S.-registered civil aircraft unless that aircraft is identified in accordance with part 45 of this chapter.

(d) Any person taking off or landing a helicopter certificated under part 29 of this chapter at a heliport constructed over water may make such momentary flight as is necessary for takeoff or landing through the prohibited range of the limiting height-speed envelope established for the helicopter if that flight through the prohibited range takes place over water on which a safe ditching can be accomplished and if the helicopter is amphibious or
§ 91.11 Prohibition against interference with crewmembers.

No person may assault, threaten, intimidate, or interfere with a crewmember in the performance of the crewmember’s duties aboard an aircraft being operated.

§ 91.13 Careless or reckless operation.

(a) Aircraft operations for the purpose of air navigation. No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

(b) Aircraft operations other than for the purpose of air navigation. No person may operate an aircraft, other than for the purpose of air navigation, on any part of the surface of an airport used by aircraft for air commerce (including areas used by those aircraft for receiving or discharging persons or cargo), in a careless or reckless manner so as to endanger the life or property of another.

§ 91.15 Dropping objects.

No pilot in command of a civil aircraft may allow any object to be dropped from that aircraft in flight that creates a hazard to persons or property. However, this section does not prohibit the dropping of any object if reasonable precautions are taken to avoid injury or damage to persons or property.

§ 91.17 Alcohol or drugs.

(a) No person may act or attempt to act as a crewmember of a civil aircraft—

(1) Within 8 hours after the consumption of any alcoholic beverage;

(2) While under the influence of alcohol;

(3) While using any drug that affects the person’s faculties in any way contrary to safety; or

(4) While having .04 percent by weight or more alcohol in the blood.

(b) Except in an emergency, no pilot of a civil aircraft may allow a person who appears to be intoxicated or who demonstrates by manner or physical indications that the individual is under the influence of drugs (except a medical patient under proper care) to be carried in that aircraft.

(c) A crewmember shall do the following:

(1) On request of a law enforcement officer, submit to a test to indicate the percentage by weight of alcohol in the blood, when—

(i) The law enforcement officer is authorized under State or local law to conduct the test or to have the test conducted; and

(ii) The law enforcement officer is requesting submission to the test to investigate a suspected violation of State or local law governing the same or substantially similar conduct prohibited by paragraph (a)(1), (a)(2), or (a)(4) of this section.

(2) Whenever the Administrator has a reasonable basis to believe that a person may have violated paragraph (a)(1), (a)(2), or (a)(4) of this section, that person shall, upon request by the Administrator, furnish the Administrator, or authorize any clinic, hospital, doctor, or other person to release to the Administrator, the results of each test taken within 4 hours after acting or attempting to act as a crewmember that indicates percentage by weight of alcohol in the blood.

(d) Whenever the Administrator has a reasonable basis to believe that a person may have violated paragraph (a)(3) of this section, that person shall, upon request by the Administrator, furnish the Administrator, or authorize any clinic, hospital, doctor, or other person to release to the Administrator, the results of each test taken within 4 hours after acting or attempting to act as a crewmember that indicates the presence of any drugs in the body.

(e) Any test information obtained by the Administrator under paragraph (c) or (d) of this section may be evaluated in determining a person’s qualifications for any airman certificate or possible violations of this chapter and may be used as evidence in any legal proceeding under section 602, 609, or 901 of the Federal Aviation Act of 1958.
§ 91.19 Carriage of narcotic drugs, marihuana, and depressant or stimulant drugs or substances.

(a) Except as provided in paragraph (b) of this section, no person may operate a civil aircraft within the United States with knowledge that narcotic drugs, marihuana, and depressant or stimulant drugs or substances as defined in Federal or State statutes are carried in the aircraft.

(b) Paragraph (a) of this section does not apply to any carriage of narcotic drugs, marihuana, and depressant or stimulant drugs or substances authorized by or under any Federal or State statute or by any Federal or State agency.

§ 91.21 Portable electronic devices.

(a) Except as provided in paragraph (b) of this section, no person may operate, nor may any operator or pilot in command of an aircraft allow the operation of, any portable electronic device on any of the following U.S.-registered civil aircraft:

1. Aircraft operated by a holder of an air carrier operating certificate or an operating certificate; or
2. Any other aircraft while it is operated under IFR.

(b) Paragraph (a) of this section does not apply to—

1. Portable voice recorders;
2. Hearing aids;
3. Heart pacemakers;
4. Electric shavers; or
5. Any other portable electronic device that the operator of the aircraft has determined will not cause interference with the navigation or communication system of the aircraft on which it is to be used.

(c) In the case of an aircraft operated by a holder of an air carrier operating certificate or an operating certificate, the determination required by paragraph (b)(5) of this section shall be made by that operator of the aircraft on which the particular device is to be used. In the case of other aircraft, the determination may be made by the pilot in command or other operator of the aircraft.

§ 91.23 Truth-in-leasing clause requirement in leases and conditional sales contracts.

(a) Except as provided in paragraph (b) of this section, the parties to a lease or contract of conditional sale involving a U.S.-registered large civil aircraft and entered into after January 2, 1973, shall execute a written lease or contract and include therein a written truth-in-leasing clause as a concluding paragraph in large print, immediately preceding the space for the signature of the parties, which contains the following with respect to each such aircraft:

1. Identification of the Federal Aviation Regulations under which the aircraft has been maintained and inspected during the 12 months preceding the execution of the lease or contract of conditional sale, and certification by the parties thereto regarding the aircraft’s status of compliance with applicable maintenance and inspection requirements in this part for the operation to be conducted under the lease or contract of conditional sale.
2. The name and address (printed or typed) and the signature of the person responsible for operational control of the aircraft under the lease or contract of conditional sale, and certification that each person understands that person’s responsibilities for compliance with applicable Federal Aviation Regulations.
3. A statement that an explanation of factors bearing on operational control and pertinent Federal Aviation Regulations can be obtained from the nearest FAA Flight Standards district office.

(b) The requirements of paragraph (a) of this section do not apply—

1. To a lease or contract of conditional sale when—
   (i) The party to whom the aircraft is furnished is a foreign air carrier or certificate holder under part 121, 125, 127, 135, or 141 of this chapter, or
   (ii) The party furnishing the aircraft is a foreign air carrier or a person operating under part 121, 125, and 141 of this chapter, or a person operating under part 135 of this chapter having authority to engage in on-demand operations with large aircraft.
2. To a contract of conditional sale, when the aircraft involved has not been
§ 91.25  Aviation Safety Reporting Program: Prohibition against use of reports for enforcement purposes.

The Administrator of the FAA will not use reports submitted to the National Aeronautics and Space Administration under the Aviation Safety Reporting Program (or information derived therefrom) in any enforcement action except information concerning accidents or criminal offenses which are wholly excluded from the Program.

§§ 91.27—91.99  [Reserved]

Subpart B—Flight Rules

Source: Docket No. 18334, 54 FR 34294, Aug. 18, 1989, unless otherwise noted.

General

§ 91.101  Applicability.

This subpart prescribes flight rules governing the operation of aircraft within the United States and within 12 nautical miles from the coast of the United States.

§ 91.103  Preflight action.

Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include—

(a) For a flight under IFR or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATC;
§ 91.107 Use of safety belts, shoulder harnesses, and child restraint systems.

(a) Unless otherwise authorized by the Administrator—

(1) No pilot may take off a U.S.-registered civil aircraft (except a free balloon that incorporates a basket or gondola, or an airship type certificated before November 2, 1987) unless the pilot in command of that aircraft ensures that each person on board is briefed on how to fasten and unfasten that person’s safety belt and, if installed, shoulder harness.

(2) No pilot may cause to be moved on the surface, take off, or land a U.S.-registered civil aircraft (except a free balloon that incorporates a basket or gondola, or an airship type certificated before November 2, 1987) unless the pilot in command of that aircraft ensures that each person on board has been notified to fasten his or her safety belt and, if installed, his or her shoulder harness.

(3) Except as provided in this paragraph, each person on board a U.S.-registered civil aircraft (except a free balloon that incorporates a basket or gondola or an airship type certificated before November 2, 1987) must occupy an approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about him or her during movement on the surface, takeoff, and landing. For seaplane and float equipped rotorcraft operations during movement on the surface, the person pushing off the seaplane or rotorcraft from the dock and the person mooring the seaplane or rotorcraft at the dock are excepted from the preceding seating and safety belt requirements. Notwithstanding the preceding requirements of this paragraph, a person may:

(i) Be held by an adult who is occupying an approved seat or berth, provided the person being held has not reached his or her second birthday and does not occupy or use any restraining device;

(ii) Use the floor of the aircraft as a seat, provided that the person is on board for the purpose of engaging in sport parachuting; or

(iii) Notwithstanding any other requirement of this chapter, occupy an approved child restraint system furnished by the operator or one of the persons described in paragraph (a)(3)(iii)(A) of this section provided that:

(A) The child is accompanied by a parent, guardian, or attendant designated by the child’s parent or guardian to attend to the safety of the child during the flight;
§ 91.109 Flight instruction; Simulated instrument flight and certain flight tests.

(a) No person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls. However, instrument flight instruction may be given in a single-engine airplane equipped with a single, functioning throwover control wheel in place of fixed, dual controls of the elevator and ailerons when—

(1) The instructor has determined that the flight can be conducted safely; and

(2) The person manipulating the controls has at least a private pilot certificate with appropriate category and class ratings.

(b) No person may operate a civil aircraft in simulated instrument flight unless—

(1) The other control seat is occupied by a safety pilot who possesses at least a private pilot certificate with category and class ratings appropriate to the aircraft being flown.

(2) The safety pilot has adequate vision forward and to each side of the aircraft, or a competent observer in the aircraft adequately supplements the vision of the safety pilot; and

(3) Except in the case of lighter-than-air aircraft, that aircraft is equipped with fully functioning dual controls.

(c) Simulated instrument flight may be conducted in a single-engine airplane, equipped with a single, functioning throwover control wheel, in place of fixed, dual controls of the elevator and ailerons, when—

(i) The safety pilot has determined that the flight can be conducted safely; and

(ii) The person manipulating the controls has at least a private pilot certificate with appropriate category and class ratings.

(d) No person may operate a civil aircraft that is being used for a flight test for an airline transport pilot certificate or a class or type rating on that certificate, or for a part 121 proficiency flight test, unless the pilot seated at the controls, other than the pilot being checked, is fully qualified to act as pilot in command of the aircraft.
§ 91.111 Operating near other aircraft.
(a) No person may operate an aircraft so close to another aircraft as to create a collision hazard.
(b) No person may operate an aircraft in formation flight except by arrangement with the pilot in command of each aircraft in the formation.
(c) No person may operate an aircraft, carrying passengers for hire, in formation flight.

§ 91.113 Right-of-way rules: Except water operations.
(a) Inapplicability. This section does not apply to the operation of an aircraft on water.
(b) General. When weather conditions permit, regardless of whether an operation is conducted under instrument flight rules or visual flight rules, vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft. When a rule of this section gives another aircraft the right-of-way, the pilot shall give way to that aircraft and may not pass over, under, or ahead of it unless well clear.
(c) In distress. An aircraft in distress has the right-of-way over all other air traffic.
(d) Converging. When aircraft of the same category are converging at approximately the same altitude (except head-on, or nearly so), the aircraft to the other’s right has the right-of-way. If the aircraft are of different categories—
(1) A balloon has the right-of-way over any other category of aircraft;
(2) A glider has the right-of-way over an airship, airplane, or rotorcraft; and
(3) An airship has the right-of-way over an airplane or rotorcraft. However, an aircraft towing or refueling another aircraft has the right-of-way over all other engine-driven aircraft.
(e) Approaching head-on. When aircraft are approaching each other head-on, or nearly so, each pilot of each aircraft shall alter course to the right.
(f) Overtaking. Each aircraft that is being overtaken has the right-of-way and each pilot of an overtaking aircraft shall alter course to the right to pass well clear.
(g) Landing. Aircraft, while on final approach to land or while landing, have the right-of-way over other aircraft in flight or operating on the surface, except that they shall not take advantage of this rule to force an aircraft off the runway surface which has already landed and is attempting to make way for an aircraft on final approach. When two or more aircraft are approaching an airport for the purpose of landing, the aircraft at the lower altitude has the right-of-way, but it shall not take advantage of this rule to cut in front of another which is on final approach to land or to overtake that aircraft.

§ 91.115 Right-of-way rules: Water operations.
(a) General. Each person operating an aircraft on the water shall, insofar as possible, keep clear of all vessels and avoid impeding their navigation, and shall give way to any vessel or other aircraft that is given the right-of-way by any rule of this section.
(b) Crossing. When aircraft, or an aircraft and a vessel, are on crossing courses, the aircraft or vessel to the other’s right has the right-of-way.
(c) Approaching head-on. When aircraft, or an aircraft and a vessel, are approaching head-on, or nearly so, each shall alter its course to the right to keep well clear.
(d) Overtaking. Each aircraft or vessel that is being overtaken has the right-of-way, and the one overtaking shall alter course to keep well clear.
(e) Special circumstances. When aircraft, or an aircraft and a vessel, approach so as to involve risk of collision, each aircraft or vessel shall proceed with careful regard to existing circumstances, including the limitations of the respective craft.

§ 91.117 Aircraft speed.
(a) Unless otherwise authorized by the Administrator, no person may operate an aircraft below 10,000 feet MSL at an indicated airspeed of more than 250 knots (288 m.p.h.).
(b) Unless otherwise authorized or required by ATC, no person may operate an aircraft at or below 2,500 feet above the surface within 4 nautical miles of the primary airport of a Class C or Class D airspace area at an indicated airspeed of more than 200 knots (230 mph.). This paragraph (b) does not
§ 91.119  Minimum safe altitudes: General.

Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

(a) Anywhere. An attitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

(b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an attitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

(c) Over other than congested areas. An attitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

(d) Helicopters. Helicopters may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with any routes or altitudes specifically prescribed for helicopters by the Administrator.

§ 91.121  Altimeter settings.

(a) Each person operating an aircraft shall maintain the cruising altitude or flight level of that aircraft, as the case may be, by reference to an altimeter that is set, when operating—

(1) Below 18,000 feet MSL, to—

(i) The current reported altimeter setting of a station along the route and within 100 nautical miles of the aircraft;

(ii) If there is no station within the area prescribed in paragraph (a)(1)(i) of this section, the current reported altimeter setting of an appropriate available station; or

(iii) In the case of an aircraft not equipped with a radio, the elevation of the departure airport or an appropriate altimeter setting available before departure; or

(2) At or above 18,000 feet MSL, to 29.92 Hg.

(b) The lowest usable flight level is determined by the atmospheric pressure in the area of operation as shown in the following table:

<table>
<thead>
<tr>
<th>Current altimeter setting</th>
<th>Lowest usable flight level</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.92 (or higher)</td>
<td>180</td>
</tr>
<tr>
<td>29.91 through 29.42</td>
<td>185</td>
</tr>
<tr>
<td>28.91 through 28.42</td>
<td>190</td>
</tr>
<tr>
<td>28.41 through 27.92</td>
<td>195</td>
</tr>
<tr>
<td>27.91 through 27.42</td>
<td>200</td>
</tr>
<tr>
<td>27.41 through 26.92</td>
<td>205</td>
</tr>
</tbody>
</table>

(c) To convert minimum altitude prescribed under §§91.119 and 91.177 to the minimum flight level, the pilot shall take the flight level equivalent of the minimum altitude in feet and add the appropriate number of feet specified below, according to the current reported altimeter setting:

<table>
<thead>
<tr>
<th>Current altimeter setting</th>
<th>Adjustment factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.92 (or higher)</td>
<td>None</td>
</tr>
<tr>
<td>29.91 through 29.42</td>
<td>500</td>
</tr>
<tr>
<td>28.91 through 28.42</td>
<td>1,000</td>
</tr>
<tr>
<td>28.41 through 27.92</td>
<td>1,500</td>
</tr>
<tr>
<td>27.91 through 27.42</td>
<td>2,000</td>
</tr>
<tr>
<td>27.41 through 26.92</td>
<td>2,500</td>
</tr>
<tr>
<td>27.41 through 26.92</td>
<td>3,000</td>
</tr>
</tbody>
</table>

§ 91.123  Compliance with ATC clearances and instructions.

(a) When an ATC clearance has been obtained, no pilot in command may deviate from that clearance unless an amended clearance is obtained, an emergency exists, or the deviation is in
response to a traffic alert and collision avoidance system resolution advisory. However, except in Class A airspace, a pilot may cancel an IFR flight plan if the operation is being conducted in VFR weather conditions. When a pilot is uncertain of an ATC clearance, that pilot shall immediately request clarification from ATC.

(b) Except in an emergency, no person may operate an aircraft contrary to an ATC instruction in an area in which air traffic control is exercised.

(c) Each pilot in command who, in an emergency, or in response to a traffic alert and collision avoidance system resolution advisory, deviates from an ATC clearance or instruction shall notify ATC of that deviation as soon as possible.

(d) Each pilot in command who (though not deviating from a rule of this subpart) is given priority by ATC in an emergency, shall submit a detailed report of that emergency within 48 hours to the manager of that ATC facility, if requested by ATC.

(e) Unless otherwise authorized by ATC, no person operating an aircraft may operate that aircraft according to any clearance or instruction that has been issued to the pilot of another aircraft for radar air traffic control purposes.

(Approved by the Office of Management and Budget under control number 2120-0005)

§ 91.126 Operating on or in the vicinity of an airport in Class G airspace.

(a) General. Unless otherwise authorized or required, each person operating an aircraft on or in the vicinity of an airport in a Class G airspace area must comply with the requirements of this section.

(b) Direction of turns. When approaching to land at an airport without an operating control tower in Class G airspace—

(1) Each pilot of an airplane must make all turns of that airplane to the left unless the airport displays approved light signals or visual markings indicating that turns should be made to the right, in which case the pilot must make all turns to the right; and

(2) Each pilot of a helicopter must avoid the flow of fixed-wing aircraft.

(c) Flap settings. Except when necessary for training or certification, the pilot in command of a civil turbojet-powered aircraft must use, as a final flap setting, the minimum certificated landing flap setting set forth in the approved performance information in the Airplane Flight Manual for the applicable conditions. However, each pilot in command has the final authority and responsibility for the safe operation of the pilot's airplane, and may use a different flap setting for that airplane if the pilot determines that it is necessary in the interest of safety.

(d) Communications with control towers. Unless otherwise authorized or required by ATC, no person may operate an aircraft to, from, through, or on an airport having an operational control tower unless two-way radio communications are maintained between that aircraft and the control tower. Communications must be established prior to 4 nautical miles from the airport, up to and including 2,500 feet AGL. However, if the aircraft radio fails in flight, the pilot in command may operate that aircraft and land if weather conditions are at or above basic VFR weather minimums, visual contact with the tower is maintained, and a clearance to

§ 91.125 ATC light signals.

ATC light signals have the meaning shown in the following table:

<table>
<thead>
<tr>
<th>Color and type of signal</th>
<th>Meaning with respect to aircraft on the surface</th>
<th>Meaning with respect to aircraft in flight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steady green ...........</td>
<td>Cleared to takeoff</td>
<td>Cleared to land. Return for landing (to be followed by steady green at proper time).</td>
</tr>
<tr>
<td>Flashing green ..........</td>
<td>Cleared to taxi ......</td>
<td>Give way to other aircraft and continue circling. Airport unsafe—do not land.</td>
</tr>
<tr>
<td>Steady red ............</td>
<td>Stop .................</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flashing red ...........</td>
<td>Taxi clear of runway in use.</td>
<td></td>
</tr>
<tr>
<td>Flashing white .........</td>
<td>Return to starting point on airport.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Color and type of signal</th>
<th>Meaning with respect to aircraft on the surface</th>
<th>Meaning with respect to aircraft in flight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternating red and green.</td>
<td>Exercise extreme caution.</td>
<td>Exercise extreme caution.</td>
</tr>
</tbody>
</table>
§ 91.127 Operating on or in the vicinity of an airport in Class E airspace.

(a) Unless otherwise required by part 93 of this chapter or unless otherwise authorized or required by the ATC facility having jurisdiction over the Class E airspace area, each person operating an aircraft on or in the vicinity of an airport in a Class E airspace area must comply with the requirements of § 91.126.

(b) Departures. Each pilot of an aircraft must comply with any traffic patterns established for that airport in part 93 of this chapter.

(c) Communications with control towers. Unless otherwise authorized or required by ATC, no person may operate an aircraft to, from, through, or on an airport having an operational control tower unless two-way radio communications are maintained between that aircraft and the control tower. Communications must be established prior to 4 nautical miles from the airport, up to and including 2,500 feet AGL. However, if the aircraft radio fails in flight, the pilot in command may operate that aircraft and land if weather conditions are at or above basic VFR weather minimums, visual contact with the tower is maintained, and a clearance to land is received. If the aircraft radio fails while in flight under IFR, the pilot must comply with § 91.185.

§ 91.129 Operations in Class D airspace.

(a) General. Unless otherwise authorized or required by the ATC facility having jurisdiction over the Class D airspace area, each person operating an aircraft in Class D airspace must comply with the applicable provisions of this section. In addition, each person must comply with §§ 91.126 and 91.127. For the purpose of this section, the primary airport is the airport for which the Class D airspace area is designated. A satellite airport is any other airport within the Class D airspace area.

(b) Deviations. An operator may deviate from any provision of this section under the provisions of an ATC authorization issued by the ATC facility having jurisdiction over the airspace concerned. ATC may authorize a deviation on a continuing basis or for an individual flight, as appropriate.

(c) Communications. Each person operating an aircraft in Class D airspace must meet the following two-way radio communications requirements:

(1) Arrival or through flight. Each person must establish two-way radio communications with the ATC facility (including foreign ATC in the case of foreign airspace designated in the United States) providing air traffic services prior to entering that airspace and thereafter maintain those communications while within that airspace.

(2) Departing flight. Each person—

(i) From the primary airport or satellite airport with an operating control tower must establish and maintain two-way radio communications with the control tower, and thereafter instructed by ATC while operating in the Class D airspace area; or

(ii) From a satellite airport without an operating control tower, must establish and maintain two-way radio communications with the ATC facility having jurisdiction over the Class D airspace area as soon as practicable after departing.

(d) Communications failure. Each person who operates an aircraft in a Class D airspace area must maintain two-way radio communications with the ATC facility having jurisdiction over that area.

(1) If the aircraft radio fails in flight under IFR, the pilot must comply with § 91.185 of the part.

(2) If the aircraft radio fails in flight under VFR, the pilot in command may operate that aircraft and land if—

(i) Weather conditions are at or above basic VFR weather minimums;

(ii) Visual contact with the tower is maintained; and

(iii) A clearance to land is received.

(e) Minimum Altitudes. When operating to an airport in Class D airspace, each pilot of—
§ 91.130 Operations in Class C airspace.

(a) General. Unless otherwise authorized by ATC, each aircraft operation in Class C airspace must be conducted in compliance with this section and §91.129. For the purpose of this section, the primary airport is the airport for which the Class C airspace area is designated. A satellite airport is any other airport within the Class C airspace area.

(b) Traffic patterns. No person may take off or land an aircraft at a satellite airport within a Class C airspace area except in compliance with FAA arrival and departure traffic patterns.

(c) Communications. Each person operating an aircraft in Class C airspace must meet the following two-way radio communications requirements:

(1) Arrival or through flight. Each person must establish two-way radio communications with the ATC facility (including foreign ATC in the case of foreign airspace designated in the United States) prior to entering that airspace and thereafter maintain those communications while within that airspace.

(2) Departing flight. Each person—
§ 91.131 Operations in Class B airspace.

(a) Operating rules. No person may operate an aircraft within a Class B airspace area except in compliance with §91.129 and the following rules:

(1) The operator must receive an ATC clearance from the ATC facility having jurisdiction for that area before operating an aircraft in that area.

(2) Unless otherwise authorized by ATC, each person operating a large turbine engine-powered airplane to or from a primary airport for which a Class B airspace area is designated must operate at or above the designated floors of the Class B airspace area while within the lateral limits of that area.

(3) Any person conducting pilot training operations at an airport within a Class B airspace area must comply with any procedures established by ATC for such operations in that area.

(b) Pilot requirements. (1) No person may take off or land a civil aircraft at an airport within a Class B airspace area or operate a civil aircraft within a Class B airspace area unless—

(i) The pilot in command holds at least a private pilot certificate; or

(ii) The aircraft is operated by a student pilot or recreational pilot who seeks private pilot certification and has met the requirements of §61.95 of this chapter.

(2) Notwithstanding the provisions of paragraph (b)(1)(ii) of this section, no person may take off or land a civil aircraft at those airports listed in section 4 of appendix D of this part unless the pilot in command holds at least a private pilot certificate.

(c) Communications and navigation equipment requirements. Unless otherwise authorized by ATC, no person may operate an aircraft within a Class B airspace area unless that aircraft is equipped with the applicable equipment specified in §91.215.

(d) Transponder requirements. No person may operate an aircraft in a Class B airspace area unless the aircraft is equipped with the applicable operating transponder and automatic altitude reporting equipment specified in paragraph (a) of §91.215, except as provided in paragraph (d) of that section.

§ 91.135 Operations in Class A airspace.

Except as provided in paragraph (d) of this section, each person operating an aircraft in Class A airspace must conduct that operation under instrument flight rules (IFR) and in compliance with the following:

(a) Clearance. Operations may be conducted only under an ATC clearance received prior to entering the airspace.

(b) Communications. Unless otherwise authorized by ATC, each aircraft operating in Class A airspace must be equipped with a two-way radio capable of communicating with ATC on a frequency assigned by ATC. Each pilot must maintain two-way radio communications with ATC while operating in Class A airspace.

(c) Transponder requirement. Unless otherwise authorized by ATC, no person may operate an aircraft within Class A airspace unless that aircraft is equipped with the applicable equipment specified in §91.215.

(d) ATC authorizations. An operator may deviate from any provision of this section under the provisions of an ATC authorization issued by the ATC facility having jurisdiction of the airspace concerned. In the case of an inoperative transponder, ATC may immediately approve an operation within a Class A airspace area allowing flight to continue, if desired, to the airport of ultimate destination, including any intermediate stops, or to proceed to a place where suitable repairs can be made, or both. Requests for deviation from any provision of this section must be submitted in writing, at least 4 days before the proposed operation. ATC may authorize a deviation on a continuing basis or for an individual flight.

§ 91.137 Temporary flight restrictions.

(a) The Administrator will issue a Notice to Airmen (NOTAM) designating an area within which temporary flight restrictions apply and specifying the hazard or condition requiring their imposition, whenever he determines it is necessary in order to—

(1) Protect persons and property on the surface or in the air from a hazard associated with an incident on the surface;

(2) Provide a safe environment for the operation of disaster relief aircraft; or

(3) Prevent an unsafe congestion of sightseeing and other aircraft above an incident or event which may generate a high degree of public interest.

The Notice to Airmen will specify the hazard or condition that requires the imposition of temporary flight restrictions.

(b) When a NOTAM has been issued under paragraph (a)(1) of this section, no person may operate an aircraft within the designated area unless that aircraft is participating in the hazard relief activities and is being operated under the direction of the official in charge of on scene emergency response activities.

(c) When a NOTAM has been issued under paragraph (a)(2) of this section, no person may operate an aircraft within the designated area unless at least one of the following conditions are met:

(1) The aircraft is participating in hazard relief activities and is being operated under the direction of the official in charge of on scene emergency response activities.

(2) The aircraft is carrying law enforcement officials.

(3) The aircraft is operating under the ATC approved IFR flight plan.

(4) The operation is conducted directly to or from an airport within the area, or is necessitated by the impracticability of VFR flight above or around the area due to weather, or terrain; notification is given to the Flight Service Station (FSS) or ATC facility specified in the NOTAM to receive advisories concerning disaster relief aircraft operations; and the operation does not hamper or endanger relief activities and is not conducted for the purpose of observing the disaster.

(5) The aircraft is carrying properly accredited news representatives, and, prior to entering the area, a flight plan is filed with the appropriate FAA or ATC facility specified in the Notice to Airmen and the operation is conducted above the altitude used by the disaster.
§ 91.138 Temporary flight restrictions in national disaster areas in the State of Hawaii.

(a) When the Administrator has determined, pursuant to a request and justification provided by the Governor of the State of Hawaii, or the Governor’s designee, that an inhabited area within a declared national disaster area in the State of Hawaii is in need of protection for humanitarian reasons, the Administrator will issue a Notice to Airmen (NOTAM) designating an area within which temporary flight restrictions apply. The Administrator will designate the extent and duration of the temporary flight restrictions necessary to provide for the protection of persons and property on the surface.

(b) When a NOTAM has been issued in accordance with this section, no person may operate an aircraft within the designated airspace unless:

(1) That person has obtained authorization from the official in charge of associated emergency or disaster relief response activities, and is operating the aircraft under the conditions of that authorization;

(2) The aircraft is carrying law enforcement officials;

(3) The aircraft is carrying persons involved in an emergency or a legitimate scientific purpose;

(4) The aircraft is carrying properly accredited news persons, and that prior to entering the area, a flight plan is filed with the appropriate FAA or ATC facility specified in the NOTAM and the operation is conducted in compliance with the conditions and restrictions established by the official in charge of on-scene emergency response activities; or,

(5) The aircraft is operating in accordance with an ATC clearance or instruction.

(c) A NOTAM issued under this section is effective for 90 days or until the national disaster area designation is terminated, whichever comes first, unless terminated by notice or extended by the Administrator at the request of the Governor of the State of Hawaii or the Governor’s designee.

[Doc. No. 26476, 56 FR 23178, May 20, 1991]

§ 91.139 Emergency air traffic rules.

(a) This section prescribes a process for utilizing Notices to Airmen (NOTAMs) to advise of the issuance and operations under emergency air traffic rules and regulations and designates the official who is authorized to issue NOTAMs on behalf of the Administrator in certain matters under this section.

(b) Whenever the Administrator determines that an emergency condition exists, or will exist, relating to the FAA’s ability to operate the air traffic control system and during which normal flight operations under this chapter cannot be conducted consistent...
Federal Aviation Administration, DOT

§ 91.153

with the required levels of safety and efficiency—
(1) The Administrator issues an immediately effective air traffic rule or regulation in response to that emergency condition; and
(2) The Administrator or the Associate Administrator for Air Traffic may utilize the NOTAM system to provide notification of the issuance of the rule or regulation.

Those NOTAMs communicate information concerning the rules and regulations that govern flight operations, the use of navigation facilities, and designation of that airspace in which the rules and regulations apply.

(c) When a NOTAM has been issued under this section, no person may operate an aircraft, or other device governed by the regulation concerned, within the designated airspace except in accordance with the authorizations, terms, and conditions prescribed in the regulation covered by the NOTAM.

§ 91.141 Flight restrictions in the proximity of the Presidential and other parties.

No person may operate an aircraft over or in the vicinity of any area to be visited or traveled by the President, the Vice President, or other public figures contrary to the restrictions established by the Administrator and published in a Notice to Airmen (NOTAM).

§ 91.143 Flight limitation in the proximity of space flight operations.

No person may operate any aircraft of U.S. registry, or pilot any aircraft under the authority of an airman certificate issued by the Federal Aviation Administration within areas designated in a Notice to Airmen (NOTAM) for space flight operations except when authorized by ATC, or operated under the control of the Department of Defense Manager for Space Transportation System Contingency Support Operations.

§ 91.144 Temporary restriction on flight operations during abnormally high barometric pressure conditions.

(a) Special flight restrictions. When any information indicates that barometric pressure on the route of flight currently exceeds or will exceed 31 inches of mercury, no person may operate an aircraft or initiate a flight contrary to the requirements established by the Administrator and published in a Notice to Airmen issued under this section.

(b) Waivers. The Administrator is authorized to waive any restriction issued under paragraph (a) of this section to permit emergency supply, transport, or medical services to be delivered to isolated communities, where the operation can be conducted with an acceptable level of safety.

[Amdt. 91-240, 59 FR 17452, Apr. 12, 1994; 59 FR 37669, July 25, 1994]

§§ 91.145—91.149 [Reserved]

§ 91.151 Fuel requirements for flight in VFR conditions.

(a) No person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed—
(1) During the day, to fly after that for at least 30 minutes; or
(2) At night, to fly after that for at least 45 minutes.

(b) No person may begin a flight in a rotorcraft under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 20 minutes.

§ 91.153 VFR flight plan: Information required.

(a) Information required. Unless otherwise authorized by ATC, each person filing a VFR flight plan shall include in it the following information:
(1) The aircraft identification number and, if necessary, its radio call sign.
(2) The type of the aircraft or, in the case of a formation flight, the type of each aircraft and the number of aircraft in the formation.
(3) The full name and address of the pilot in command or, in the case of a
§ 91.155 Basic VFR weather minimums.

(a) Except as provided in paragraph (b) of this section and §91.157, no person may operate an aircraft under VFR when the flight visibility is less, or at a distance from clouds that is less, than that prescribed for the corresponding altitude and class of airspace in the following table:

<table>
<thead>
<tr>
<th>Airspace</th>
<th>Flight visibility</th>
<th>Distance from clouds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Class B</td>
<td>3 statute miles</td>
<td>500 feet below</td>
</tr>
<tr>
<td>Class C</td>
<td>3 statute miles</td>
<td>1,000 feet above</td>
</tr>
<tr>
<td>Class D</td>
<td>3 statute miles</td>
<td>2,000 feet horizontal</td>
</tr>
<tr>
<td>Class E:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 10,000 feet MSL</td>
<td>3 statute miles</td>
<td>500 feet below</td>
</tr>
<tr>
<td>At or above 10,000 feet MSL</td>
<td>5 statute miles</td>
<td>1,000 feet above</td>
</tr>
<tr>
<td>Class G:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,200 feet or less above the surface (regardless of MSL altitude)</td>
<td>1 statute mile</td>
<td>Clear of clouds</td>
</tr>
<tr>
<td>Day, except as provided in §91.155(b)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Class G Airspace. Notwithstanding the provisions of paragraph (a) of this section, the following operations may be conducted in Class G airspace below 1,200 feet above the surface:

(1) Helicopter. A helicopter may be operated clear of clouds if operated at a speed that allows the pilot adequate opportunity to see any air traffic or obstruction in time to avoid a collision.

(2) Airplane. When the visibility is less than 3 statute miles but not less than 1 statute mile during night hours, an airplane may be operated clear of clouds if operated in an airport traffic pattern within one-half mile of the runway.

(c) Except as provided in §91.157, no person may operate an aircraft beneath the ceiling under VFR within the lateral boundaries of controlled airspace designated to the surface for an airport when the ceiling is less than 1,000 feet.

(d) Except as provided in §91.157 of this part, no person may take off or land an aircraft, or enter the traffic pattern of an airport, under VFR, within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport—

(1) Unless ground visibility at that airport is at least 3 statute miles; or

(2) If ground visibility is not reported at that airport, unless flight visibility...
§ 91.167 Fuel requirements for flight in IFR conditions.

(a) Except as provided in paragraph (b) of this section, no person may operate a civil aircraft in IFR conditions unless it carries enough fuel (considering weather reports and forecasts and weather conditions) to—

(1) Complete the flight to the first airport of intended landing;

(2) Fly from that airport to the alternate airport; and

(3) Fly after that for 45 minutes at normal cruising speed or, for helicopters, fly after that for 30 minutes at normal cruising speed.

(b) Paragraph (a)(2) of this section does not apply if—
§ 91.169

(1) Part 97 of this chapter prescribes a standard instrument approach procedure for the first airport of intended landing; and

(2) For at least 1 hour before and 1 hour after the estimated time of arrival at the airport, the weather reports or forecasts or any combination of them indicate—

(i) The ceiling will be at least 2,000 feet above the airport elevation; and

(ii) Visibility will be at least 3 statute miles.

§ 91.169 IFR flight plan: Information required.

(a) Information required. Unless otherwise authorized by ATC, each person filing an IFR flight plan shall include in it the following information:

(1) Information required under § 91.153(a).

(2) An alternate airport, except as provided in paragraph (b) of this section.

(b) Exceptions to applicability of paragraph (a)(2) of this section. Paragraph (a)(2) of this section does not apply if part 97 of this chapter prescribes a standard instrument approach procedure for the first airport of intended landing and, for at least 1 hour before and 1 hour after the estimated time of arrival, the weather reports or forecasts, or any combination of them, indicate—

(i) The ceiling will be at least 2,000 feet above the airport elevation; and

(ii) Visibility will be at least 3 statute miles.

(c) IFR alternate airport weather minimums. Unless otherwise authorized by the Administrator, no person may include an alternate airport in an IFR flight plan unless current weather forecasts indicate that, at the estimated time of arrival at the alternate airport, the ceiling and visibility at that airport will be at or above the following alternate airport weather minimums:

(1) If an instrument approach procedure has been published in part 97 of this chapter for that airport, the alternate airport minimums specified in that procedure or, if none are so specified, the following minimums:

(i) Precision approach procedure: Ceiling 600 feet and visibility 2 statute miles.

(ii) Nonprecision approach procedure: Ceiling 800 feet and visibility 2 statute miles.

(2) If no instrument approach procedure has been published in part 97 of this chapter for that airport, the ceiling and visibility minimums are those allowing descent from the MEA, approach, and landing under basic VFR.

(d) Cancellation. When a flight plan has been activated, the pilot in command, upon canceling or completing the flight under the flight plan, shall notify an FAA Flight Service Station or ATC facility.

§ 91.171 VOR equipment check for IFR operations.

(a) No person may operate a civil aircraft under IFR using the VOR system of radio navigation unless the VOR equipment of that aircraft—

(1) Is maintained, checked, and inspected under an approved procedure; or

(2) Has been operationally checked within the preceding 30 days, and was found to be within the limits of the permissible indicated bearing error set forth in paragraph (b) or (c) of this section.

(b) Except as provided in paragraph (c) of this section, each person conducting a VOR check under paragraph (a)(2) of this section shall—

(1) Use, at the airport of intended departure, an FAA-operated or approved test signal or a test signal radiated by a certificated and appropriately rated radio repair station or, outside the United States, a test signal operated or approved by an appropriate authority to check the VOR equipment (the maximum permissible indicated bearing error is plus or minus 4 degrees); or

(2) Use, at the airport of intended departure, a point on the airport surface designated as a VOR system checkpoint by the Administrator, or, outside the United States, by an appropriate authority (the maximum permissible bearing error is plus or minus 4 degrees);

(3) If neither a test signal nor a designated checkpoint on the surface is available, use an airborne checkpoint designated by the Administrator or,
outside the United States, by an appropriate authority (the maximum permissible bearing error is plus or minus 6 degrees); or

(4) If no check signal or point is available, while in flight—
   (i) Select a VOR radial that lies along the centerline of an established VOR airway;
   (ii) Select a prominent ground point along the selected radial preferably more than 20 nautical miles from the VOR ground facility and maneuver the aircraft directly over the point at a reasonably low altitude; and
   (iii) Note the VOR bearing indicated by the receiver when over the ground point (the maximum permissible variation between the published radial and the indicated bearing is 6 degrees).

(c) If dual system VOR (units independent of each other except for the antenna) is installed in the aircraft, the person checking the equipment may check one system against the other in place of the check procedures specified in paragraph (b) of this section. Both systems shall be tuned to the same VOR ground facility and note the indicated bearings to that station. The maximum permissible variation between the two indicated bearings is 4 degrees.

(d) Each person making the VOR operational check, as specified in paragraph (b) or (c) of this section, shall enter the date, place, bearing error, and sign the aircraft log or other record. In addition, if a test signal radiated by a repair station, as specified in paragraph (b)(1) of this section, is used, an entry must be made in the aircraft log or other record by the repair station certificate holder or the certificate holder’s representative certifying to the bearing transmitted by the repair station for the check and the date of transmission.

(Approved by the Office of Management and Budget under control number 2120-0005)

§ 91.175 Takeoff and landing under IFR.

(a) Instrument approaches to civil airports.
   Unless otherwise authorized by the Administrator, when an instrument letdown to a civil airport is necessary, each person operating an aircraft, except a military aircraft of the United States, shall use a standard instrument approach procedure prescribed for the airport in part 97 of this chapter.

(b) Authorized DH or MDA. For the purpose of this section, when the approach procedure being used provides for and requires the use of a DH or MDA, the authorized DH or MDA is the highest of the following:
   (1) The DH or MDA prescribed by the approach procedure.
   (2) The DH or MDA prescribed for the pilot in command.
   (3) The DH or MDA for which the aircraft is equipped.

(c) Operation below DH or MDA. Where a DH or MDA is applicable, no pilot may operate an aircraft, except a military aircraft of the United States, at any airport below the authorized MDA or continue an approach below the authorized DH unless—
   (1) The aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers, and for operations conducted under part 121 or part 135 unless that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing;
   (2) The flight visibility is not less than the visibility prescribed in the standard instrument approach being used; and
   (3) Except for a Category II or Category III approach where any necessary visual reference requirements are specified by the Administrator, at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:
      (i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable.
      (ii) The threshold.
§ 91.175

(iii) The threshold markings.
(iv) The threshold lights.
(v) The runway end identifier lights.
(vi) The visual approach slope indicator.
(vii) The touchdown zone or touchdown zone markings.
(viii) The touchdown zone lights.
(ix) The runway or runway markings.
(x) The runway lights.

(d) Landing. No pilot operating an aircraft, except a military aircraft of the United States, may land that aircraft when the flight visibility is less than the visibility prescribed in the standard instrument approach procedure being used.

(e) Missed approach procedures. Each pilot operating an aircraft, except a military aircraft of the United States, shall immediately execute an appropriate missed approach procedure when either of the following conditions exist:

(1) Whenever the requirements of paragraph (c) of this section are not met at either of the following times:

   (i) When the aircraft is being operated below MDA; or

   (ii) Upon arrival at the missed approach point, including a DH where a DH is specified and its use is required, and at any time after that until touchdown.

(2) Whenever an identifiable part of the airport is not distinctly visible to the pilot during a circling maneuver at or above MDA, unless the inability to see an identifiable part of the airport results only from a normal bank of the aircraft during the circling approach.

(f) Civil airport takeoff minimums. Unless otherwise authorized by the Administrator, no pilot operating an aircraft under parts 121, 125, 127, 129, or 135 of this chapter may take off from a civil airport under IFR unless weather conditions are at or above the weather minimum for IFR takeoff prescribed for that airport under part 97 of this chapter. If takeoff minimums are not prescribed under part 97 of this chapter for a particular airport, the following minimums apply to takeoffs under IFR for aircraft operating under those parts:

(1) For aircraft, other than helicopters, having two engines or less—1 statute mile visibility.

(2) For aircraft having more than two engines—1½ statute mile visibility.

(3) For helicopters—½ statute mile visibility.

(g) Military airports. Unless otherwise prescribed by the Administrator, each person operating a civil aircraft under IFR into or out of a military airport shall comply with the instrument approach procedures and the takeoff and landing minimum prescribed by the military authority having jurisdiction of that airport.

(h) Comparable values of RVR and ground visibility. (1) Except for Category II or Category III minimums, if RVR minimums for takeoff or landing are prescribed in an instrument approach procedure, but RVR is not reported for the runway of intended operation, the RVR minimum shall be converted to ground visibility in accordance with the table in paragraph (h)(2) of this section and shall be the visibility minimum for takeoff or landing on that runway.

<table>
<thead>
<tr>
<th>RVR (feet)</th>
<th>Visibility (statute miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,600</td>
<td>1/4</td>
</tr>
<tr>
<td>2,400</td>
<td>1/2</td>
</tr>
<tr>
<td>3,200</td>
<td>3/4</td>
</tr>
<tr>
<td>4,000</td>
<td>5/8</td>
</tr>
<tr>
<td>4,500</td>
<td>7/8</td>
</tr>
<tr>
<td>5,000</td>
<td>1</td>
</tr>
<tr>
<td>6,000</td>
<td>1 1/4</td>
</tr>
</tbody>
</table>

(i) Operations on unpublished routes and use of radar in instrument approach procedures. When radar is approved at certain locations for ATC purposes, it may be used not only for surveillance and precision radar approaches, as applicable, but also may be used in conjunction with instrument approach procedures predicated on other types of radio navigational aids. Radar vectors may be authorized to provide course guidance through the segments of an approach to the final course or fix. When operating on an unpublished route or while being radar vectored, the pilot, when an approach clearance is received, shall, in addition to complying with §91.177, maintain the last altitude assigned to that pilot until the aircraft is established on a segment of
§ 91.179 IFR cruising altitude or flight level.

(a) In controlled airspace. Each person operating an aircraft under IFR in level cruising flight in controlled airspace shall maintain the altitude or flight level assigned that aircraft by ATC. However, if the ATC clearance assigns “VFR conditions on-top,” that person shall maintain an altitude or flight level as prescribed by §91.159.

(b) In uncontrolled airspace. Except while in a holding pattern of 2 minutes or less or while turning, each person operating an aircraft under IFR in level cruising flight in uncontrolled airspace shall maintain an appropriate altitude as follows:

(1) When operating below 18,000 feet MSL and—

   (i) On a magnetic course of zero degrees through 179 degrees, any odd thousand foot MSL altitude (such as 3,000, 5,000, or 7,000); or
   
   (ii) On a magnetic course of 180 degrees through 359 degrees, any even thousand foot MSL altitude (such as 2,000, 4,000, or 6,000).

(2) When operating at or above 18,000 feet MSL but below flight level 290, and—

   (i) On a magnetic course of zero degrees through 179 degrees, any odd thousand foot MSL altitude (such as 3,000, 5,000, or 7,000); or
   
   (ii) On a magnetic course of 180 degrees through 359 degrees, any even thousand foot MSL altitude (such as 2,000, 4,000, or 6,000).

§ 91.177 Minimum altitudes for IFR operations.

(a) Operation of aircraft at minimum altitudes. Except when necessary for takeoff or landing, no person may operate an aircraft under IFR below—

(1) The applicable minimum altitudes prescribed in parts 95 and 97 of this chapter; or

(2) If no applicable minimum altitude is prescribed in those parts—

   (i) In the case of operations over an area designated as a mountainous area in part 95, an altitude of 2,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown; or

   (ii) In any other case, an altitude of 1,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown. However, if both a MEA and a MOCA are prescribed for a particular route or route segment, a person may operate an aircraft below the MEA down to, but not below, the MOCA, when within 22 nautical miles of the VOR concerned (based on the pilot's reasonable estimate of that distance).

   (b) Climb. Climb to a higher minimum IFR altitude shall begin immediately after passing the point beyond which that minimum altitude applies, except that when ground obstructions intervene, the point beyond which that higher minimum altitude applies shall be crossed at or above the applicable MCA.
§ 91.181 Course to be flown.

Unless otherwise authorized by ATC, no person may operate an aircraft within controlled airspace under IFR except as follows:

(a) On a Federal airway, along the centerline of that airway.

(b) On any other route, along the direct course between the navigational aids or fixes defining that route. However, this section does not prohibit maneuvering the aircraft to pass well clear of other air traffic or the maneuvering of the aircraft in VFR conditions to clear the intended flight path both before and during climb or descent.

§ 91.183 IFR radio communications.

The pilot in command of each aircraft operated under IFR in controlled airspace shall have a continuous watch maintained on the appropriate frequency and shall report by radio as soon as possible—

(a) The time and altitude of passing each designated reporting point, or the reporting points specified by ATC, except that while the aircraft is under radar control, only the passing of those reporting points specifically requested by ATC need be reported;

(b) Any unforecast weather conditions encountered; and

(c) Any other information relating to the safety of flight.

§ 91.185 IFR operations: Two-way radio communications failure.

(a) General. Unless otherwise authorized by ATC, each pilot who has two-way radio communications failure when operating under IFR shall comply with the rules of this section.

(b) VFR conditions. If the failure occurs in VFR conditions, or if VFR conditions are encountered after the failure, each pilot shall continue the flight under VFR and land as soon as practicable.

(c) IFR conditions. If the failure occurs in IFR conditions, or if paragraph (b) of this section cannot be complied with, each pilot shall continue the flight according to the following:

(1) Route. (i) By the route assigned in the last ATC clearance received;

(ii) If being radar vectored, by the direct route from the point of radio failure to the fix, route, or airway specified in the vector clearance;

(iii) In the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance; or

(iv) In the absence of an assigned route or a route that ATC has advised may be expected in a further clearance, by the route filed in the flight plan.

(2) Altitude. At the highest of the following altitudes or flight levels for the route segment being flown:

(i) The altitude or flight level assigned in the last ATC clearance received;

(ii) The minimum altitude (converted, if appropriate, to minimum flight level as prescribed in § 91.121(c)) for IFR operations; or

(iii) The altitude or flight level ATC has advised may be expected in a further clearance.

(3) Leave clearance limit. (i) When the clearance limit is a fix from which an approach begins, commence descent or descent and approach as close as possible to the expect-further-clearance time if one has been received, or if one has not been received, as close as possible to the estimated time of arrival as calculated from the filed or amended (with ATC) estimated time en route.

(ii) If the clearance limit is not a fix from which an approach begins, leave the clearance limit at the expect-further-clearance time if one has been received, or if none has been received, upon arrival over the clearance limit, and proceed to a fix from which an approach begins and commence descent or descent and approach as close as possible to the estimated time of arrival as calculated from the filed or
amended (with ATC) estimated time en route.


§ 91.187 Operation under IFR in controlled airspace: Malfunction reports.

(a) The pilot in command of each aircraft operated in controlled airspace under IFR shall report as soon as practical to ATC any malfunctions of navigational, approach, or communication equipment occurring in flight.

(b) In each report required by paragraph (a) of this section, the pilot in command shall include the—

(1) Aircraft identification;
(2) Equipment affected;
(3) Degree to which the capability of the pilot to operate under IFR in the ATC system is impaired; and
(4) Nature and extent of assistance desired from ATC.

§ 91.189 Category II and III operations: General operating rules.

(a) No person may operate a civil aircraft in a Category II or III operation unless—

(1) The flight crew of the aircraft consists of a pilot in command and a second in command who hold the appropriate authorizations and ratings prescribed in §61.3 of this chapter;
(2) Each flight crewmember has adequate knowledge of, and familiarity with, the aircraft and the procedures to be used; and
(3) The instrument panel in front of the pilot who is controlling the aircraft has appropriate instrumentation for the type of flight control guidance system that is being used.

(b) Unless otherwise authorized by the Administrator, no person may operate a civil aircraft in a Category II or Category III operation unless each ground component required for that operation and the related airborne equipment is installed and operating.

(c) Authorized DH. For the purpose of this section, when the approach procedure being used provides for and requires the use of a DH, the authorized DH is the highest of the following:

(1) The DH prescribed by the approach procedure.
(2) The DH prescribed for the pilot in command.
(3) The DH for which the aircraft is equipped.

(d) Unless otherwise authorized by the Administrator, no pilot operating an aircraft in a Category II or Category III approach that provides and requires use of a DH may continue the approach below the authorized decision height unless the following conditions are met:

(1) The aircraft is in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers, and where that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing.
(2) At least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:

(i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable.
(ii) The threshold.
(iii) The threshold markings.
(iv) The threshold lights.
(v) The touchdown zone or touchdown zone markings.
(vi) The touchdown zone lights.

(e) Unless otherwise authorized by the Administrator, each pilot operating an aircraft shall immediately execute an appropriate missed approach whenever, prior to touchdown, the requirements of paragraph (d) of this section are not met.

(f) No person operating an aircraft using a Category III approach without decision height may land that aircraft except in accordance with the provisions of the letter of authorization issued by the Administrator.

(g) Paragraphs (a) through (f) of this section do not apply to operations conducted by the holders of certificates issued under part 121, 125, 129, or 135 of this chapter. No person may operate a civil aircraft in a Category II or Category III operation conducted by the holder of a certificate issued under part
§ 91.191

121, 125, 129, or 135 of this chapter unless the operation is conducted in accordance with that certificate holder’s operations specifications.

§ 91.191 Category II and Category III manual.

(a) Except as provided in paragraph (c) of this section, after August 4, 1997, no person may operate a U.S.-registered civil aircraft in a Category II or a Category III operation unless—

(1) There is available in the aircraft a current and approved Category II or Category III manual, as appropriate, for that aircraft;

(2) The operation is conducted in accordance with the procedures, instructions, and limitations in the appropriate manual; and

(3) The instruments and equipment listed in the manual that are required for a particular Category II or Category III operation have been inspected and maintained in accordance with the maintenance program contained in the manual.

(b) Each operator must keep a current copy of each approved manual at its principal base of operations and must make each manual available for inspection upon request by the Administrator.

(c) This section does not apply to operations conducted by a holder of a certificate issued under part 121 or part 135 of this chapter.

§ 91.193 Certificate of authorization for certain Category II operations.

The Administrator may issue a certificate of authorization authorizing deviations from the requirements of §§91.189, 91.191, and 91.205(f) for the operation of small aircraft identified as Category A aircraft in §97.3 of this chapter in Category II operations if the Administrator finds that the proposed operation can be safely conducted under the terms of the certificate. Such authorization does not permit operation of the aircraft carrying persons or property for compensation or hire.

§§ 91.195—91.199 [Reserved]

Subpart C—Equipment, Instrument, and Certificate Requirements

SOURCE: Docket No. 18334, 54 FR 34304, Aug. 18, 1989, unless otherwise noted.

§ 91.201 [Reserved]

§ 91.203 Civil aircraft: Certifications required.

(a) Except as provided in §91.715, no person may operate a civil aircraft unless it has within it the following:

(1) An appropriate and current airworthiness certificate. Each U.S. airworthiness certificate used to comply with this subparagraph (except a special flight permit, a copy of the applicable operations specifications issued under §21.197(c) of this chapter, appropriate sections of the air carrier manual required by parts 121 and 135 of this chapter containing that portion of the operations specifications issued under §21.197(c), or an authorization under §91.611) must have on it the registration number assigned to the aircraft under part 47 of this chapter. However, the airworthiness certificate need not have on it an assigned special identification number before 10 days after that number is first affixed to the aircraft. A revised airworthiness certificate having on it an assigned special identification number, that has been affixed to an aircraft, may only be obtained upon application to an FAA Flight Standards district office.

(b) Each operator must keep a current copy of each approved manual at its principal base of operations and must make each manual available for inspection upon request by the Administrator.

(c) This section does not apply to operations conducted by a holder of a certificate issued under part 121 or part 135 of this chapter.

[Doc. No. 26933, 61 FR 34560, July 2, 1996]
(c) No person may operate an aircraft with a fuel tank installed within the passenger compartment or a baggage compartment unless the installation was accomplished pursuant to part 43 of this chapter, and a copy of FAA Form 337 authorizing that installation is on board the aircraft.

(d) No person may operate a civil airplane (domestic or foreign) into or out of an airport in the United States unless it complies with the fuel venting and exhaust emissions requirements of part 34 of this chapter.


§ 91.205 Powered civil aircraft with standard category U.S. airworthiness certificates: Instrument and equipment requirements.

(a) General. Except as provided in paragraphs (c)(3) and (e) of this section, no person may operate a powered civil aircraft with a standard category U.S. airworthiness certificate in any operation described in paragraphs (b) through (f) of this section unless that aircraft contains the instruments and equipment specified in those paragraphs (or FAA-approved equivalents) for that type of operation, and those instruments and items of equipment are in operable condition.

(b) Visual-flight rules (day). For VFR flight during the day, the following instruments and equipment are required:

(1) Airspeed indicator.
(2) Altimeter.
(3) Magnetic direction indicator.
(4) Tachometer for each engine.
(5) Oil pressure gauge for each engine using pressure system.
(6) Temperature gauge for each engine using liquid-cooled engine.
(7) Oil temperature gauge for each air-cooled engine.
(8) Manifold pressure gauge for each altitude engine.

(9) Fuel gauge indicating the quantity of fuel in each tank.
(10) Landing gear position indicator, if the aircraft has a retractable landing gear.
(11) For small civil airplanes certificates after March 11, 1996, in accordance with part 23 of this chapter, an approved aviation red or aviation white anticollision light system. In the event of failure of any light of the anticollision light system, operation of the aircraft may continue to a location where repairs or replacement can be made.

(12) If the aircraft is operated for hire over water and beyond power-off gliding distance from shore, approved flotation gear readily available to each occupant and at least one pyrotechnic signaling device. As used in this section, “shore” means that area of the land adjacent to the water which is above the high water mark and excludes land areas which are intermittently under water.

(13) An approved safety belt with an approved metal-to-metal latching device for each occupant 2 years of age or older.

(14) For small civil airplanes manufactured after July 18, 1978, an approved shoulder harness for each front seat. The shoulder harness must be designed to protect the occupant from serious head injury when the occupant experiences the ultimate inertia forces specified in §23.561(b)(2) of this chapter. Each shoulder harness installed at a flight crewmember station must permit the crewmember, when seated and with the safety belt and shoulder harness fastened, to perform all functions necessary for flight operations. For purposes of this paragraph—

(i) The date of manufacture of an airplane is the date the inspection acceptance records reflect that the airplane is complete and meets the FAA-approved type design data; and

(ii) A front seat is a seat located at a flight crewmember station or any seat located alongside such a seat.

(15) An emergency locator transmitter, if required by §91.207.

(16) For normal, utility, and acrobatic category airplanes with a seating configuration, excluding pilot seats, of 9 or less, manufactured after December 12, 1986, a shoulder harness for—

(i) Each front seat that meets the requirements of §23.785(g) and (h) of this chapter in effect on December 12, 1985;

(ii) Each additional seat that meets the requirements of §23.785(g) of this chapter in effect on December 12, 1985.

(17) For rotorcraft manufactured after September 16, 1992, a shoulder
§ 91.207 Emergency locator transmitters.

(a) Except as provided in paragraphs (e) and (f) of this section, no person may operate a U.S.-registered civil aircraft unless—

(h) Exclusions. Paragraphs (f) and (g) of this section do not apply to operations conducted by a holder of a certificate issued under part 121 or part 135 of this chapter.

§ 91.207 Emergency locator transmitters.

(a) Except as provided in paragraphs (e) and (f) of this section, no person may operate a U.S.-registered civil airplane unless—
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(1) There is attached to the airplane an approved automatic type emergency locator transmitter that is in operable condition for the following operations, except that after June 21, 1995, an emergency locator transmitter that meets the requirements of TSO-C91 may not be used for new installations:
   (i) Those operations governed by the supplemental air carrier and commercial operator rules of parts 121 and 125;
   (ii) Charter flights governed by the domestic and flag air carrier rules of part 121 of this chapter; and
   (iii) Operations governed by part 135 of this chapter;
   (2) For operations other than those specified in paragraph (a)(1) of this section, there must be attached to the airplane an approved personal type or an approved automatic type emergency locator transmitter that is in operable condition, except that after June 21, 1995, an emergency locator transmitter that meets the requirements of TSO-C91 may not be used for new installations.

(b) Each emergency locator transmitter required by paragraph (a) of this section must be attached to the airplane in such a manner that the probability of damage to the transmitter in the event of crash impact is minimized. Fixed and deployable automatic type transmitters must be attached to the airplane as far aft as practicable.

(c) Batteries used in the emergency locator transmitters required by paragraphs (a) and (b) of this section must be replaced (or recharged, if the batteries are rechargeable)—
   (1) When the transmitter has been in use for more than 1 cumulative hour; or
   (2) When 50 percent of their useful life (or, for rechargeable batteries, 50 percent of their useful life of charge) has expired, as established by the transmitter manufacturer under its approval.

The new expiration date for replacing (or recharging) the battery must be legibly marked on the outside of the transmitter and entered in the aircraft maintenance record. Paragraph (c)(2) of this section does not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.

(d) Each emergency locator transmitter required by paragraph (a) of this section must be inspected within 12 calendar months after the last inspection for—
   (1) Proper installation;
   (2) Battery corrosion;
   (3) Operation of the controls and crash sensor; and
   (4) The presence of a sufficient signal radiated from its antenna.

(e) Notwithstanding paragraph (a) of this section, a person may—
   (1) Ferry a newly acquired airplane from the place where possession of it was taken to a place where the emergency locator transmitter is to be installed; and
   (2) Ferry an airplane with an inoperative emergency locator transmitter from a place where repairs or replacements cannot be made to a place where they can be made.

No person other than required crewmembers may be carried aboard an airplane being ferried under paragraph (e) of this section.

(f) Paragraph (a) of this section does not apply to—
   (1) Turbojet-powered aircraft;
   (2) Aircraft while engaged in scheduled flights by scheduled air carriers;
   (3) Aircraft while engaged in training operations conducted entirely within a 50-nautical mile radius of the airport from which such local flight operations began;
   (4) Aircraft while engaged in flight operations incident to design and testing;
   (5) New aircraft while engaged in flight operations incident to their manufacture, preparation, and delivery;
   (6) Aircraft while engaged in flight operations incident to the aerial application of chemicals and other substances for agricultural purposes;
   (7) Aircraft certificated by the Administrator for research and development purposes;
   (8) Aircraft while used for showing compliance with regulations, crew training, exhibition, air racing, or market surveys;
   (9) Aircraft equipped to carry not more than one person; and
   (10) An aircraft during any period for which the transmitter has been temporarily removed for inspection, repair,
§ 91.209 Aircraft lights.

No person may:
(a) During the period from sunset to sunrise (or, in Alaska, during the period a prominent unlighted object cannot be seen from a distance of 3 statute miles or the sun is more than 6 degrees below the horizon)—
(i) Operate an aircraft unless it has lighted position lights;
(ii) Park or move an aircraft in, or in dangerous proximity to, a night flight operations area of an airport unless the aircraft—
(1) Is clearly illuminated;
(2) Has lighted position lights; or
(3) Is in an area that is marked by obstruction lights;
(iii) Anchor an aircraft unless the aircraft—
(1) Has lighted anchor lights; or
(2) Is in an area where anchor lights are not required on vessels; or
(iv) Operate an aircraft that is equipped with an anticollision light system, unless it has lighted anticollision lights. However, the anticollision lights need not be lighted when the pilot-in-command determines that, because of operating conditions, it would be in the interest of safety to turn the lights off.

[Doc. No. 27806, 61 FR 5171, Feb. 9, 1996]

§ 91.211 Supplemental oxygen.

(a) General. No person may operate a civil aircraft of U.S. registry—
(1) At cabin pressure altitudes above 12,500 feet (MSL) up to and including 14,000 feet (MSL), unless the required minimum flight crew is provided with and uses supplemental oxygen for that part of the flight at those altitudes that is of more than 30 minutes duration;
(2) At cabin pressure altitudes above 14,000 feet (MSL) unless the required minimum flight crew is provided with and uses supplemental oxygen during the entire flight time at those altitudes; and
(3) At cabin pressure altitudes above 15,000 feet (MSL) unless each occupant of the aircraft is provided with supplemental oxygen.

(b) Pressurized cabin aircraft. (1) No person may operate a civil aircraft of U.S. registry with a pressurized cabin—
(i) At flight altitudes above flight level 250 unless at least a 10-minute supply of supplemental oxygen, in addition to any oxygen required to satisfy paragraph (a) of this section, is available for each occupant of the aircraft for use in the event that a descent is necessitated by loss of cabin pressurization; and
(ii) At flight altitudes above flight level 350 unless one pilot at the controls of the airplane is wearing and using an oxygen mask that is secured and sealed and that either supplies oxygen at all times or automatically supplies oxygen whenever the cabin pressure altitude of the airplane exceeds 14,000 feet (MSL), except that the one pilot need not wear and use an oxygen mask while at or below flight level 410 if there are two pilots at the controls and each pilot has a quick-donning type of oxygen mask that can be placed on the face with one hand from the ready position within 5 seconds, supplying oxygen and properly secured and sealed.

(2) Notwithstanding paragraph (b)(1)(ii) of this section, if for any reason at any time it is necessary for one pilot to leave the controls of the aircraft when operating at flight altitudes above flight level 350, the remaining pilot at the controls shall put on and use an oxygen mask until the other pilot has returned to that crewmember’s station.

§ 91.213 Inoperative instruments and equipment.

(a) Except as provided in paragraph (d) of this section, no person may take
§ 91.213

off an aircraft with inoperative instruments or equipment installed unless the following conditions are met:

(1) An approved Minimum Equipment List exists for that aircraft.

(2) The aircraft has within it a letter of authorization, issued by the FAA Flight Standards district office having jurisdiction over the area in which the operator is located, authorizing operation of the aircraft under the Minimum Equipment List. The letter of authorization may be obtained by written request of the airworthiness certificate holder. The Minimum Equipment List and the letter of authorization constitute a supplemental type certificate for the aircraft.

(3) The approved Minimum Equipment List must—
   (i) Be prepared in accordance with the limitations specified in paragraph (b) of this section; and
   (ii) Provide for the operation of the aircraft with the instruments and equipment in an inoperable condition.

(4) The aircraft records available to the pilot must include an entry describing the inoperative instruments and equipment.

(5) The aircraft is operated under all applicable conditions and limitations contained in the Minimum Equipment List and the letter authorizing the use of the list.

(b) The following instruments and equipment may not be included in a Minimum Equipment List:

(1) Instruments and equipment that are either specifically or otherwise required by the airworthiness requirements under which the aircraft is type certificated and which are essential for safe operations under all operating conditions.

(2) Instruments and equipment required by an airworthiness directive to be in operable condition unless the airworthiness directive provides otherwise.

(3) Instruments and equipment required for specific operations by this part.

(c) A person authorized to use an approved Minimum Equipment List issued for a specific aircraft under part 121, 125, or 135 of this chapter shall use that Minimum Equipment List in connection with operations conducted with that aircraft under this part without additional approval requirements.

(d) Except for operations conducted in accordance with paragraph (a) or (c) of this section, a person may takeoff an aircraft in operations conducted under this part with inoperative instruments and equipment without an approved Minimum Equipment List provided—

(1) The flight operation is conducted in a:
   (i) Rotorcraft, nonturbine-powered airplane, glider, or lighter-than-air aircraft for which a master Minimum Equipment List has not been developed; or
   (ii) Small rotorcraft, nonturbine-powered small airplane, glider, or lighter-than-air aircraft for which a Master Minimum Equipment List has been developed; and

(2) The inoperative instruments and equipment are not—
   (i) Part of the VFR-day type certification instruments and equipment prescribed in the applicable airworthiness regulations under which the aircraft was type certificated;
   (ii) Indicated as required on the aircraft's equipment list, or on the Kinds of Operations Equipment List for the kind of flight operation being conducted;
   (iii) Required by § 91.205 or any other rule of this part for the specific kind of flight operation being conducted; or
   (iv) Required to be operational by an airworthiness directive; and

(3) The inoperative instruments and equipment are—
   (i) Removed from the aircraft, the cockpit control placarded, and the maintenance recorded in accordance with § 43.9 of this chapter; or
   (ii) Deactivated and placarded “Inoperative.” If deactivation of the inoperative instrument or equipment involves maintenance, it must be accomplished and recorded in accordance with part 43 of this chapter; and

(4) A determination is made by a pilot, who is certificated and appropriately rated under part 61 of this chapter, or by a person, who is certificated and appropriately rated to perform maintenance on the aircraft, that the inoperative instrument or equipment does not constitute a hazard to the aircraft.
An aircraft with inoperative instruments or equipment as provided in paragraph (d) of this section is considered to be in a properly altered condition acceptable to the Administrator.

(e) Notwithstanding any other provision of this section, an aircraft with inoperative instruments or equipment may be operated under a special flight permit issued in accordance with §§21.197 and 21.199 of this chapter.

§ 91.215 ATC transponder and altitude reporting equipment and use.

(a) All airspace: U.S.-registered civil aircraft. For operations not conducted under part 121, 127 or 135 of this chapter, ATC transponder equipment installed must meet the performance and environmental requirements of any class of TSO-C74b (Mode A) or any class of TSO-C74c (Mode A with altitude reporting capability) as appropriate, or the appropriate class of TSO-C112 (Mode S).

(b) All airspace. Unless otherwise authorized or directed by ATC, no person may operate an aircraft in the airspace described in paragraphs (b)(1) through (b)(5) of this section, unless that aircraft is equipped with an operable coded radar beacon transponder having either Mode 3/A 4096 code capability, replying to Mode 3/A interrogations with the code specified by ATC, or a Mode S capability, replying to Mode 3/A interrogations with the code specified by ATC and intermode and Mode S interrogations in accordance with the applicable provisions specified in TSO C-112, and that aircraft is equipped with automatic pressure altitude reporting equipment having a Mode C capability that automatically replies to Mode C interrogations by transmitting pressure altitude information in 100-foot increments. This requirement applies—

(1) All aircraft. In Class A, Class B, and Class C airspace areas;

(2) All aircraft. In all airspace within 30 nautical miles of an airport listed in appendix D, section 1 of this part from the surface upward to 10,000 feet MSL;

(3) Notwithstanding paragraph (b)(2) of this section, any aircraft which was not originally certificated with an engine-driven electrical system or which has not subsequently been certified with such a system installed, balloon or glider may conduct operations in the airspace within 30 nautical miles of an airport listed in appendix D, section 1 of this part provided such operations are conducted—

(i) Outside any Class A, Class B, or Class C airspace area; and

(ii) Below the altitude of the ceiling of a Class B or Class C airspace area designated for an airport or 10,000 feet MSL, whichever is lower; and

(4) All aircraft in all airspace above the ceiling and within the lateral boundaries of a Class B or Class C airspace area designated for an airport upward to 10,000 feet MSL; and

(5) All aircraft except any aircraft which was not originally certificated with an engine-driven electrical system or which has not subsequently been certificated with such a system installed, balloon, or glider—

(i) In all airspace of the 48 contiguous states and the District of Columbia at and above 10,000 feet MSL, excluding the airspace at and below 2,500 feet above the surface; and

(ii) In the airspace from the surface to 10,000 feet MSL within a 10-nautical-mile radius of any airport listed in appendix D, section 2 of this part, excluding the airspace below 1,200 feet outside of the lateral boundaries of the surface area of the airspace designated for that airport.

(c) Transponder-on operation. While in the airspace as specified in paragraph (b) of this section or in all controlled airspace, each person operating an aircraft equipped with an operable ATC transponder maintained in accordance with §91.413 of this part shall operate the transponder, including Mode C equipment if installed, and shall reply on the appropriate code or as assigned by ATC.

(d) ATC authorized deviations. Requests for ATC authorized deviations must be made to the ATC facility having jurisdiction over the concerned airspace within the time periods specified as follows:

(1) For operation of an aircraft with an operating transponder but without operating automatic pressure altitude reporting equipment having a Mode C capability, the request may be made at any time.
(2) For operation of an aircraft with an inoperative transponder to the airport of ultimate destination, including any intermediate stops, or to proceed to a place where suitable repairs can be made or both, the request may be made at any time.

(3) For operation of an aircraft that is not equipped with a transponder, the request must be made at least one hour before the proposed operation.

(Approved by the Office of Management and Budget under control number 2120±0005)

§ 91.219 Altitude alerting system or device: Turbojet-powered civil airplanes.

(a) Except as provided in paragraph (d) of this section, no person may operate a turbojet-powered U.S.-registered civil airplane unless that airplane is equipped with an approved altitude alerting system or device that is in operable condition and meets the requirements of paragraph (b) of this section.

(b) Each altitude alerting system or device required by paragraph (a) of this section must be able to—

(1) Alert the pilot—

(i) Upon approaching a preselected altitude in either ascent or descent, by a sequence of both aural and visual signals in sufficient time to establish level flight at that preselected altitude; or

(ii) Upon approaching a preselected altitude in either ascent or descent, by a sequence of visual signals in sufficient time to establish level flight at that preselected altitude, and when deviating above and below that preselected altitude, by an aural signal;

(2) Provide the required signals from sea level to the highest operating altitude approved for the airplane in which it is installed;

(3) Preselect altitudes in increments that are commensurate with the altitudes at which the aircraft is operated;

(4) Be tested without special equipment to determine proper operation of the alerting signals; and

(5) Accept necessary barometric pressure settings if the system or device operates on barometric pressure. However, for operation below 3,000 feet AGL, the system or device need only provide one signal, either visual or aural, to comply with this paragraph. A radio altimeter may be included to provide the signal if the operator has an approved procedure for its use to determine DH or MDA, as appropriate.

(c) Each operator to which this section applies must establish and assign procedures for the use of the altitude alerting system or device and each flight crewmember must comply with those procedures assigned to him.

(d) Paragraph (a) of this section does not apply to any operation of an airplane that has an experimental certificate or to the operation of any airplane for the following purposes:

(1) Ferrying a newly acquired airplane from the place where possession of it was taken to a place where the altitude alerting system or device is to be installed.

(2) Continuing a flight as originally planned, if the altitude alerting system or device becomes inoperative after the airplane has taken off; however, the flight may not depart from a place where repair or replacement can be made.
§ 91.221 Traffic alert and collision avoidance system equipment and use.

(a) All airspace: U.S.-registered civil aircraft. Any traffic alert and collision avoidance system installed in a U.S.-registered civil aircraft must be approved by the Administrator.

(b) Traffic alert and collision avoidance system, operation required. Each person operating an aircraft equipped with an operable traffic alert and collision avoidance system shall have that system on and operating.

§§ 91.223–91.299 [Reserved]

Subpart D—Special Flight Operations

SOURCE: Docket No. 18834, 54 FR 34308, Aug. 18, 1989, unless otherwise noted.

§ 91.301 [Reserved]

§ 91.303 Aerobatic flight.

No person may operate an aircraft in aerobatic flight—

(a) Over any congested area of a city, town, or settlement;

(b) Over an open air assembly of persons;

(c) Within the lateral boundaries of the surface areas of Class A, Class C, Class D, or Class E airspace designated for an airport;

(d) Within 4 nautical miles of the center line of any Federal airway;

(e) Below an altitude of 1,500 feet above the surface; or

(f) When flight visibility is less than 3 statute miles.

For the purposes of this section, aerobatic flight means an intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight.


§ 91.305 Flight test areas.

No person may flight test an aircraft except over open water, or sparsely populated areas, having light air traffic.

§ 91.307 Parachutes and parachuting.

(a) No pilot of a civil aircraft may allow a parachute that is available for emergency use to be carried in that aircraft unless it is an approved type and—

(1) If a chair type (canopy in back), it has been packed by a certificated and appropriately rated parachute rigger within the preceding 120 days; or

(2) If any other type, it has been packed by a certificated and appropriately rated parachute rigger—

(i) Within the preceding 120 days, if its canopy, shrouds, and harness are composed exclusively of nylon, rayon, or other similar synthetic fiber or materials that are substantially resistant to damage from mold, mildew, or other fungi and other rotting agents propagated in a moist environment; or

(ii) Within the preceding 60 days, if any part of the parachute is composed of silk, pongee, or other natural fiber, or materials not specified in paragraph (a)(2)(i) of this section.

(b) Except in an emergency, no pilot in command may allow, and no person may make, a parachute jump from an aircraft within the United States except in accordance with part 105.

(c) Unless each occupant of the aircraft is wearing an approved parachute, no pilot of a civil aircraft, carrying any person (other than a crewmember) may execute any intentional maneuver that exceeds—

(1) A bank of 60 degrees relative to the horizon; or

(2) A nose-up or nose-down attitude of 30 degrees relative to the horizon.
§ 91.313 Restricted category civil aircraft: Operating limitations.

(a) No person may operate a restricted category civil aircraft—

(1) For other than the special purpose for which it is certificated; or

(2) In an operation other than one necessary to accomplish the work activity directly associated with that special purpose.

(b) For the purpose of paragraph (a) of this section, operating a restricted category civil aircraft to provide flight crewmember training in a special purpose operation for which the aircraft is certificated is considered to be an operation for that special purpose.

(c) No person may operate a restricted category civil aircraft carrying persons or property for compensation or hire. For the purposes of this paragraph, a special purpose operation
§ 91.315 Limited category civil aircraft: Operating limitations.

No person may operate a limited category civil aircraft carrying persons or property for compensation or hire.

§ 91.317 Provisionally certificated civil aircraft: Operating limitations.

(a) No person may operate a provisionally certificated civil aircraft unless that person is eligible for a provisionally airworthiness certificate under §21.213 of this chapter.

(b) No person may operate a provisionally certificated civil aircraft outside the United States unless that person has specific authority to do so from the Administrator and each foreign country involved.

(c) Unless otherwise authorized by the Director, Flight Standards Service, no person may operate a provisionally certificated civil aircraft in air transportation.

(d) Unless otherwise authorized by the Administrator, no person may operate a provisionally certificated civil aircraft except—

(1) In direct conjunction with the type or supplemental type certification of that aircraft;

(2) For training flight crews, including simulated air carrier operations;

(3) Demonstration flight by the manufacturer for prospective purchasers;

(4) Market surveys by the manufacturer;

(5) Flight checking of instruments, accessories, and equipment that do not affect the basic airworthiness of the aircraft; or

(6) Service testing of the aircraft.

(e) Each person operating a provisionally certificated civil aircraft shall operate within the prescribed limitations displayed in the aircraft or set forth in the provisional aircraft flight manual or other appropriate document. However, when operating in direct conjunction with the type or supplemental type certification of the aircraft, that
§ 91.319 Aircraft having experimental certificates: Operating limitations.

(a) No person may operate an aircraft that has an experimental certificate—
(1) For other than the purpose for which the certificate was issued; or
(2) Carrying persons or property for compensation or hire.

(b) No person may operate an aircraft that has an experimental certificate outside of an area assigned by the Administrator until it is shown that—
(1) The aircraft is controllable throughout its normal range of speeds and throughout all the maneuvers to be executed; and
(2) The aircraft has no hazardous operating characteristics or design features.

(c) Unless otherwise authorized by the Administrator in special operating limitations, no person may operate an aircraft that has an experimental certificate over a densely populated area or in a congested airway. The Administrator may issue special operating limitations for particular aircraft to permit takeoffs and landings to be conducted over a densely populated area or in a congested airway, in accordance with terms and conditions specified in the authorization in the interest of safety in air commerce.

(d) Each person operating an aircraft that has an experimental certificate shall—
(1) Advise each person carried of the experimental nature of the aircraft;
(2) Operate under VFR, day only, unless otherwise specifically authorized by the Administrator; and
(3) Notify the control tower of the experimental nature of the aircraft when operating the aircraft into or out of airports with operating control towers.

(e) The Administrator may prescribe additional limitations that the Administrator considers necessary, including limitations on the number of persons who may be carried in the aircraft.

(Approved by the Office of Management and Budget under control number 2120-0005)

§ 91.321 Carriage of candidates in Federal elections.

(a) An aircraft operator, other than one operating an aircraft under the rules of part 121, 125, or 135 of this chapter, may receive payment for the carriage of a candidate in a Federal election, an agent of the candidate, or a person traveling on behalf of the candidate, if—
(1) That operator’s primary business is not as an air carrier or commercial operator;
(2) The carriage is conducted under the rules of this part 91; and
(3) The payment for the carriage is required, and does not exceed the amount required to be paid, by regulations of the Federal Election Commission (11 CFR et seq.).

(b) For the purposes of this section, the terms candidate and election have the same meaning as that set forth in the regulations of the Federal Election Commission.

§ 91.323 Increased maximum certificated weights for certain airplanes operated in Alaska.

(a) Notwithstanding any other provision of the Federal Aviation Regulations, the Administrator will approve, as provided in this section, an increase in the maximum certificated weight of an airplane type certificated under Aeronautics Bulletin No. 7-A of the U.S. Department of Commerce dated January 1, 1931, as amended, or under the normal category of part 4a of the former Civil Air Regulations (14 CFR part 4a, 1964 ed.) if that airplane is operated in the State of Alaska by—
(1) A certificate holder conducting operations under part 121 or part 135 of this chapter; or
(2) The U.S. Department of Interior in conducting its game and fish law enforcement activities or its management, fire detection, and fire suppression activities concerning public lands.

(b) The maximum certificated weight approved under this section may not exceed—
(1) 12,500 pounds;
(2) 115 percent of the maximum weight listed in the FAA aircraft specifications;
(3) The weight at which the airplane meets the positive maneuvering load factor requirement for the normal category specified in §23.337 of this chapter; or
(4) The weight at which the airplane meets the climb performance requirements under which it was type certificated.

(c) In determining the maximum certificated weight, the Administrator considers the structural soundness of the airplane and the terrain to be traversed.

(d) The maximum certificated weight determined under this section is added to the airplane’s operation limitations and is identified as the maximum weight authorized for operations within the State of Alaska.

§ 91.325 Primary category aircraft: Operating limitations.

(a) No person may operate a primary category aircraft carrying persons or property for compensation or hire.

(b) No person may operate a primary category aircraft that is maintained by the pilot-owner under an approved special inspection and maintenance program except—
(1) The pilot-owner; or
(2) A designee of the pilot-owner, provided that the pilot-owner does not receive compensation for the use of the aircraft.

§§ 91.326—91.399 [Reserved]

Subpart E—Maintenance, Preventive Maintenance, and Alterations

§ 91.409 Inspections.

(a) Except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had—

(1) An annual inspection in accordance with part 43 of this chapter and has been approved for return to service—

(c) Shall have any inoperative instrument or item of equipment, permitted to be inoperative by § 91.213(d)(2) of this part, repaired, replaced, removed, or inspected at the next required inspection; and

(d) When listed discrepancies include inoperative instruments or equipment, shall ensure that a placard has been installed as required by § 43.11 of this chapter.

§ 91.407 Operation after maintenance, preventive maintenance, rebuilding, or alteration.

(a) No person may operate any aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless—

(1) It has been approved for return to service by a person authorized under § 43.7 of this chapter; and

(2) The maintenance record entry required by § 43.9 or § 43.11, as applicable, of this chapter has been made.

(b) No person may carry any person (other than crewmembers) in an aircraft that has been maintained, rebuilt, or altered in a manner that may have appreciably changed its flight characteristics or substantially affected its operation in flight until an appropriately rated pilot with at least a private pilot certificate flies the aircraft, makes an operational check of the maintenance performed or alteration made, and logs the flight in the aircraft records.

(c) The aircraft does not have to be flown as required by paragraph (b) of this section if, prior to flight, ground tests, inspection, or both show conclusively that the maintenance, preventive maintenance, rebuilding, or alteration has not appreciably changed the flight characteristics or substantially affected the flight operation of the aircraft.

(Approved by the Office of Management and Budget under control number 2120-0005)
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by a person authorized by §43.7 of this chapter; or

(2) An inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter.

No inspection performed under paragraph (b) of this section may be substituted for any inspection required by this paragraph unless it is performed by a person authorized to perform annual inspections and is entered as an “annual” inspection in the required maintenance records.

(b) Except as provided in paragraph (c) of this section, no person may operate an aircraft carrying any person (other than a crewmember) for hire, and no person may give flight instruction for hire in an aircraft which that person provides, unless within the preceding 100 hours of time in service the aircraft has received an annual or 100-hour inspection and been approved for return to service in accordance with part 43 of this chapter or has received an inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter. The 100-hour limitation may be exceeded by not more than 10 hours while en route to reach a place where the inspection can be done. The excess time used to reach a place where the inspection can be done must be included in computing the next 100 hours of time in service.

(c) Paragraphs (a) and (b) of this section do not apply to—

(1) An aircraft that carries a special flight permit, a current experimental certificate, or a provisional airworthiness certificate;

(2) An aircraft inspected in accordance with an approved aircraft inspection program under part 125, 127, or 135 of this chapter and so identified by the registration number in the operations specifications of the certificate holder having the approved inspection program;

(3) An aircraft subject to the requirements of paragraph (d) or (e) of this section; or

(4) Turbine-powered rotorcraft when the operator elects to inspect that rotorcraft in accordance with paragraph (e) of this section.

(d) Progressive inspection. Each registered owner of an aircraft desiring to use a progressive inspection program must submit a written request to the FAA Flight Standards district office having jurisdiction over the area in which the applicant is located, and shall provide—

(1) A certificated mechanic holding an inspection authorization, a certificated airframe repair station, or the manufacturer of the aircraft to supervise or conduct the progressive inspection;

(2) A current inspection procedures manual available and readily understandable to pilot and maintenance personnel containing, in detail—

(i) An explanation of the progressive inspection, including the continuity of inspection responsibility, the making of reports, and the keeping of records and technical reference material;

(ii) An inspection schedule, specifying the intervals in hours or days when routine and detailed inspections will be performed and including instructions for exceeding an inspection interval by not more than 10 hours while en route and for changing an inspection interval because of service experience;

(iii) Sample routine and detailed inspection forms and instructions for their use; and

(iv) Sample reports and records and instructions for their use;

(3) Enough housing and equipment for necessary disassembly and proper inspection of the aircraft; and

(4) Appropriate current technical information for the aircraft.

The frequency and detail of the progressive inspection shall provide for the complete inspection of the aircraft within each 12 calendar months and be consistent with the manufacturer's recommendations, field service experience, and the kind of operation in which the aircraft is engaged. The progressive inspection schedule must ensure that the aircraft, at all times, will be airworthy and will conform to all applicable FAA aircraft specifications, type certificate data sheets, airworthiness directives, and other approved data. If the progressive inspection is discontinued, the owner or operator shall immediately notify the local FAA Flight Standards district office, in writing, of the discontinuance.
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the discontinuance, the first annual inspection under §91.409(a)(1) is due within 12 calendar months after the last complete inspection of the aircraft under the progressive inspection. The 100-hour inspection under §91.409(b) is due within 100 hours after that complete inspection. A complete inspection of the aircraft, for the purpose of determining when the annual and 100-hour inspections are due, requires a detailed inspection of the aircraft and all its components in accordance with the progressive inspection. A routine inspection of the aircraft and a detailed inspection of several components is not considered to be a complete inspection.

(e) Large airplanes (to which part 125 is not applicable), turbojet multiengine airplanes, turbopropeller-powered multiengine airplanes, and turbine-powered rotorcraft. No person may operate a large airplane, turbojet multiengine airplane, turbopropeller-powered multiengine airplane, or turbine-powered rotorcraft unless the replacement times for life-limited parts specified in the aircraft specifications, type data sheets, or other documents approved by the Administrator are complied with and the airplane or turbine-powered rotorcraft, including the airframe, engines, propellers, rotors, appliances, survival equipment, and emergency equipment, is inspected in accordance with the provisions of §91.409.

(f) Selection of inspection program under paragraph (e) of this section. The registered owner or operator of each airplane or turbine-powered rotorcraft described in paragraph (e) of this section must select, identify in the aircraft maintenance records, and use one of the following programs for the inspection of the aircraft:

(1) A continuous airworthiness inspection program that is part of a continuous airworthiness maintenance program currently in use by a person holding an air carrier operating certificate or an operating certificate issued under part 121 of this chapter, or operating that make and model aircraft under part 121 of this chapter and maintaining it under §135.419 of this chapter.

(2) An approved aircraft inspection program approved under §135.419 of this chapter and currently in use by a person holding an operating certificate issued under part 135 of this chapter.

(3) A current inspection program recommended by the manufacturer.

(4) Any other inspection program established by the registered owner or operator of that airplane or turbine-powered rotorcraft and approved by the Administrator under paragraph (g) of this section. However, the Administrator may require revision of this inspection program in accordance with the provisions of §91.415.

Each operator shall include in the selected program the name and address of the person responsible for scheduling the inspections required by the program and make a copy of that program available to the person performing inspections on the aircraft and, upon request, to the Administrator.

(g) Inspection program approved under paragraph (e) of this section. Each operator of an airplane or turbine-powered rotorcraft desiring to establish or change an approved inspection program under paragraph (f)(4) of this section must submit the program for approval to the local FAA Flight Standards district office having jurisdiction over the area in which the aircraft is based. The program must be in writing and include at least the following information:

(1) Instructions and procedures for the conduct of inspections for the particular make and model airplane or turbine-powered rotorcraft, including necessary tests and checks. The instructions and procedures must set forth in detail the parts and areas of the airframe, engines, propellers, rotors, and appliances, including survival and emergency equipment required to be inspected.

(2) A schedule for performing the inspections that must be performed under the program expressed in terms of the time in service, calendar time,
§ 91.411 Altimeter system and altitude reporting equipment tests and inspections.

(a) No person may operate an airplane, or helicopter, in controlled airspace under IFR unless—

(1) Within the preceding 24 calendar months, each static pressure system, each altimeter instrument, and each automatic pressure altitude reporting system has been tested and inspected and found to comply with appendix E of part 43 of this chapter;

(2) Except for the use of system drain and alternate static pressure valves, following any opening and closing of the static pressure system, that system has been tested and inspected and found to comply with paragraph (a), appendices E and F, of part 43 of this chapter; and

(3) Following installation or maintenance on the automatic pressure altitude reporting system of the ATC transponder where data correspondence error could be introduced, the integrated system has been tested, inspected, and found to comply with paragraph (c), appendix E, of part 43 of this chapter.

(b) The tests required by paragraph (a) of this section must be conducted by—

(1) The manufacturer of the airplane, or helicopter, on which the tests and inspections are to be performed;

(2) A certificated repair station properly equipped to perform those functions and holding—

(i) A limited rating appropriate to the test to be performed;

(ii) A limited rating appropriate to the make and model of the appliance to be tested;

(iii) A limited rating appropriate to the test to be performed;

(iv) An airframe rating appropriate to the airplane, or helicopter, to be tested; or

(v) A limited rating for a manufacturer issued for the appliance in accordance with §145.101(b)(4) of this chapter; or

(3) A certificated mechanic with an airframe rating (static pressure system tests and inspections only).

(c) Altimeter and altitude reporting equipment approved under Technical Standard Orders are considered to be tested and inspected as of the date of their manufacture.

(d) No person may operate an airplane, or helicopter, in controlled airspace under IFR at an altitude above the maximum altitude at which all altimeters and the automatic altitude reporting system of that airplane, or helicopter, have been tested.

§ 91.413 ATC transponder tests and inspections.

(a) No persons may use an ATC transponder that is specified in 91.215(a), 121.345(c), 127.123(b), or §135.143(c) of this chapter unless, within the preceding 24 calendar months, the ATC transponder has been tested and inspected and found to comply with appendix F of part 43 of this chapter; and

(b) Following any installation or maintenance on an ATC transponder where data correspondence error could be introduced, the integrated system has been tested, inspected, and found to comply with paragraph (c), appendix E, of part 43 of this chapter.

(c) The tests and inspections specified in this section must be conducted by—

(1) A certificated repair station properly equipped to perform those functions and holding—

(i) A radio rating, Class III;

(ii) A limited radio rating appropriate to the make and model transponder to be tested;

(iii) A limited rating appropriate to the test to be performed;

(iv) A limited rating for a manufacturer issued for the transponder in accordance with §145.101(b)(4) of this chapter; or
§ 91.415 Changes to aircraft inspection programs.

(a) Whenever the Administrator finds that revisions to an approved aircraft inspection program under §91.409(f)(4) are necessary for the continued adequacy of the program, the owner or operator shall, after notification by the Administrator, make any changes in the program found to be necessary by the Administrator.

(b) The owner or operator may petition the Administrator to reconsider the notice to make any changes in a program in accordance with paragraph (a) of this section.

(c) The petition must be filed with the FAA Flight Standards district office which requested the change to the program within 30 days after the certificate holder receives the notice.

(d) Except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the Administrator.

§ 91.417 Maintenance records.

(a) Except for work performed in accordance with §§91.411 and 91.413, each registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section:

(1) Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft. The records must include—

(i) A description (or reference to data acceptable to the Administrator) of the work performed; and

(ii) The date of completion of the work performed; and

(iii) The signature, and certificate number of the person approving the aircraft for return to service.

(b) The records specified in paragraph (a)(1) of this section shall be retained until the work is repeated or superseded by other work or for 1 year after the work is performed.

(c) The records specified in paragraph (a)(2) of this section shall be retained and transferred with the aircraft at the time the aircraft is sold.

(d) A list of defects furnished to a registered owner or operator under §43.11 of this chapter for each major alteration to the airframe and currently installed engines, rotors, propellers, and appliances.

(c) The owner or operator shall make all maintenance records required to be kept by this section available for inspection by the Administrator or any authorized representative of the National Transportation Safety Board (NTSB). In addition, the owner or operator shall present Form 337 described
§ 91.419 Transfer of maintenance records.

Any owner or operator who sells a U.S.-registered aircraft shall transfer to the purchaser, at the time of sale, the following records of that aircraft, in plain language form or in coded form at the election of the purchaser, if the coded form provides for the preservation and retrieval of information in a manner acceptable to the Administrator:

(a) The records specified in §91.417(a)(2).

(b) The records specified in §91.417(a)(1) which are not included in the records covered by paragraph (a) of this section, except that the purchaser may permit the seller to keep physical custody of such records. However, custody of records by the seller does not relieve the purchaser of the responsibility under §91.417(c) to make the records available for inspection by the Administrator or any authorized representative of the National Transportation Safety Board (NTSB).

§ 91.421 Rebuilt engine maintenance records.

(a) The owner or operator may use a new maintenance record, without previous operating history, for an aircraft engine rebuilt by the manufacturer or by an agency approved by the manufacturer.

(b) Each manufacturer or agency that grants zero time to an engine rebuilt by it shall enter in the new record—

(1) A signed statement of the date the engine was rebuilt;

(2) Each change made as required by airworthiness directives; and

(3) Each change made in compliance with manufacturer’s service bulletins, if the entry is specifically requested in that bulletin.

(c) For the purposes of this section, a rebuilt engine is a used engine that has been completely disassembled, inspected, repaired as necessary, reassembled, tested, and approved in the same manner and to the same tolerances and limits as a new engine with either new or used parts. However, all parts used in it must conform to the production drawing tolerances and limits for new parts or be of approved oversized or undersized dimensions for a new engine.

§§ 91.423–91.499 [Reserved]

Subpart F—Large and Turbine-Powered Multiengine Airplanes

SOURCE: Docket No. 18334, 54 FR 34314, Aug. 18, 1989, unless otherwise noted.

§ 91.501 Applicability.

(a) This subpart prescribes operating rules, in addition to those prescribed in other subparts of this part, governing the operation of large and of turbojet-powered multiengine civil airplanes of U.S. registry. The operating rules in this subpart do not apply to those airplanes when they are required to be operated under parts 121, 129, 135, and 137 of this chapter. (Section 91.409 prescribes an inspection program for large and for turbine-powered (turbojet and turboprop) multiengine airplanes of U.S. registry when they are operated under this part or part 129 or 137.)

(b) Operations that may be conducted under the rules in this subpart instead of those in parts 121, 129, 135, and 137 of this chapter when common carriage is not involved, include—

(1) Ferry or training flights;

(2) Aerial work operations such as aerial photography or survey, or pipeline patrol, but not including fire fighting operations;

(3) Flights for the demonstration of an airplane to prospective customers when no charge is made except for those specified in paragraph (d) of this section;

(4) Flights conducted by the operator of an airplane for his personal transportation, or the transportation of his
§ 91.503 Flying equipment and operating information.

(a) The pilot in command of an airplane shall ensure that the following flying equipment and aeronautical charts and data, in current and appropriate form, are accessible for each flight at the pilot station of the airplane:

(1) A flashlight having at least two size “D” cells, or the equivalent, that is in good working order.

§ 91.503 Flying equipment and operating information.

(a) The pilot in command of an airplane shall ensure that the following flying equipment and aeronautical charts and data, in current and appropriate form, are accessible for each flight at the pilot station of the airplane:

(1) A flashlight having at least two size “D” cells, or the equivalent, that is in good working order.

§ 91.503 Flying equipment and operating information.

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(1) A flashlight having at least two size “D” cells, or the equivalent, that is in good working order.

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(1) A flashlight having at least two size “D” cells, or the equivalent, that is in good working order.

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(a) The pilot in command of an airplane shall ensure that the following flying equipment and aeronautical charts and data, in current and appropriate form, are accessible for each flight at the pilot station of the airplane:

(1) A flashlight having at least two size “D” cells, or the equivalent, that is in good working order.
§ 91.505 Familiarity with operating limitations and emergency equipment.

(a) Each pilot in command of an airplane shall, before beginning a flight, become familiar with the Airplane Flight Manual for that airplane, if one is required, and with any placards, listings, instrument markings, or any combination thereof, containing each operating limitation prescribed for that airplane by the Administrator, including those specified in §91.9(b).

(b) Each required member of the crew shall, before beginning a flight, become familiar with the emergency equipment installed on the airplane to which that crewmember is assigned and with the procedures to be followed for the use of that equipment in an emergency situation.

§ 91.507 Equipment requirements: Over-the-top or night VFR operations.

No person may operate an airplane over-the-top or at night under VFR unless that airplane is equipped with the instruments and equipment required for IFR operations under §91.205(d) and one electric landing light for night operations. Each required instrument and item of equipment must be in operable condition.

§ 91.509 Survival equipment for overwater operations.

(a) No person may take off an airplane for a flight over water more than 50 nautical miles from the nearest shore unless that airplane is equipped with a life preserver or an approved flotation means for each occupant of the airplane.

(b) No person may take off an airplane for a flight over water more than 30 minutes flying time or 100 nautical miles from the nearest shore unless it has on board the following survival equipment:

(1) A life preserver, equipped with an approved survivor locator light, for each occupant of the airplane.

(2) A self-buoyant, water-resistant, portable emergency radio signaling device that is capable of transmission on the appropriate emergency frequency or frequencies and not dependent upon the airplane power supply.

(3) A lifeline stored in accordance with §25.1411(g) of this chapter.

(c) The required liferafts, life preservers, and signaling devices must be installed in conspicuously marked locations and easily accessible in the event of a ditching without appreciable time for preparatory procedures.

(d) A survival kit, appropriately equipped for the route to be flown, must be attached to each required life raft.
(e) As used in this section, the term "shore" means that area of the land adjacent to the water which is above the high-water mark and excludes land areas which are intermittently under water.

§ 91.511 Radio equipment for overwater operations.

(a) Except as provided in paragraphs (c), (d), and (f) of this section, no person may take off an airplane for a flight over water more than 30 minutes flying time or 100 nautical miles from the nearest shore unless it has at least the following operable equipment:

(1) Radio communication equipment appropriate to the facilities to be used and able to transmit to, and receive from, any place on the route, at least one surface facility:

(i) Two transmitters.

(ii) Two microphones.

(iii) Two headsets or one headset and one speaker.

(iv) Two independent receivers.

(2) Appropriate electronic navigational equipment consisting of at least two independent electronic navigation units capable of providing the pilot with the information necessary to navigate the airplane within the airspace assigned by air traffic control. However, a receiver that can receive both communications and required navigational signals may be used in place of a separate communications receiver and a separate navigational signal receiver or unit.

(b) For the purposes of paragraphs (a)(1)(iv) and (a)(2) of this section, a receiver or electronic navigation unit is independent if the function of any part of it does not depend on the functioning of any part of another receiver or electronic navigation unit.

(c) Notwithstanding the provisions of paragraph (a) of this section, when both VHF and HF communications equipment are required for the route and the airplane has two VHF transmitters and two VHF receivers for communications, only one HF transmitter and one HF receiver is required for communications.

(e) As used in this section, the term "shore" means that area of the land adjacent to the water which is above the high-water mark and excludes land areas which are intermittently under water.

(f) Notwithstanding the requirements in paragraph (a)(2) of this section, a person may operate in the Gulf of Mexico, the Caribbean Sea, and the Atlantic Ocean west of a line which extends from 44°47'00" N / 67°00'00" W to 38°00'00" N / 67°00'00" W to 38°30'00" N / 60°00'00" W south along the 60°00'00" W longitude line to the point where the line intersects with the northern coast of South America, when:

(1) A single long-range navigation system is installed, operational, and appropriate for the route; and

(2) Flight conditions and the aircraft's capabilities are such that no more than a 30-minute gap in two-way radio very high frequency communications is expected to exist.


§ 91.513 Emergency equipment.

(a) No person may operate an airplane unless it is equipped with the emergency equipment listed in this section.

(b) Each item of equipment—

(1) Must be inspected in accordance with §91.409 to ensure its continued serviceability and immediate readiness for its intended purposes;

(2) Must be readily accessible to the crew;

(3) Must clearly indicate its method of operation; and

(4) When carried in a compartment or container, must have that compartment or container marked as to contents and date of last inspection.

(c) Hand fire extinguishers must be provided for use in crew, passenger, and
§ 91.515 Flight altitude rules.
(a) Notwithstanding §91.119, and except as provided in paragraph (b) of this section, no person may operate an airplane under VFR at less than—
(1) One thousand feet above the surface, or 1,000 feet from any mountain, hill, or other obstruction to flight, for day operations; and
(2) The altitudes prescribed in §91.177, for night operations.
(b) This section does not apply—
(1) During takeoff or landing;
(2) When a different altitude is authorized by a waiver to this section under subpart J of this part; or
(3) When a flight is conducted under the special VFR weather minimums of §91.157 with an appropriate clearance from ATC.
§ 91.517 Passenger information.
(a) Except as provided in paragraph (b) of this section, no person may operate an airplane carrying passengers unless it is equipped with signs that are visible to passengers and flight attendants to notify them when smoking is prohibited and when safety belts must be fastened. The signs must be so constructed that the crew can turn them on and off. They must be turned on during airplane movement on the surface, for each takeoff, for each landing, and when otherwise considered to be necessary by the pilot in command.
(b) The pilot in command of an airplane that is not required, in accordance with applicable aircraft and equipment requirements of this chapter, to be equipped as provided in paragraph (a) of this section shall ensure that the passengers are notified orally each time that it is necessary to fasten their safety belts and when smoking is prohibited.
(c) If passenger information signs are installed, no passenger or crewmember may smoke while any “no smoking” sign is lighted nor may any passenger or crewmember smoke in any lavatory.
(d) Each passenger required by §91.107(a)(3) to occupy a seat or berth shall fasten his or her safety belt about
§ 91.523 Carry-on baggage.

No pilot in command of an airplane having a seating capacity of more than 19 passengers may permit a passenger to stow baggage aboard that airplane except—

(1) A diagram of, and methods of operating, the emergency exits; and

(2) Other instructions necessary for use of emergency equipment.

(c) Each card used under paragraph (b) must be carried in convenient locations on the airplane for the use of each passenger and must contain information that is pertinent only to the type and model airplane on which it is used.

§ 91.525 Carriage of cargo.

(a) No pilot in command may permit cargo to be carried in any airplane unless—

(1) It is carried in an approved cargo rack, bin, or compartment installed in the airplane;

(2) It is secured by means approved by the Administrator; or

(3) It is carried in accordance with each of the following:

(i) It is properly secured by a safety belt or other tiedown having enough strength to eliminate the possibility of shifting under all normally anticipated flight and ground conditions.

(ii) It is packaged or covered to avoid possible injury to passengers.

(iii) It does not impose any load on seats or on the floor structure that exceeds the load limitation for those components.

(iv) It is not located in a position that restricts the access to or use of any required emergency or regular exit, or the use of the aisle between the crew and the passenger compartment.

(v) It is not carried directly above seated passengers.

(b) When cargo is carried in cargo compartments that are designed to require the physical entry of a crewmember to extinguish any fire that may occur during flight, the cargo must be loaded so as to allow a crewmember to effectively reach all parts of the compartment with the contents of a hand fire extinguisher.

§ 91.527 Operating in icing conditions.

(a) No pilot may take off an airplane that has—

1. Frost, snow, or ice adhering to any propeller, windshield, or power-plant installation or to an airspeed, altimeter, rate of climb, or flight attitude instrument system;

2. Snow or ice adhering to the wings or stabilizing or control surfaces; or

3. Any frost adhering to the wings or stabilizing or control surfaces, unless that frost has been polished to make it smooth.

(b) Except for an airplane that has ice protection provisions that meet the requirements in section 34 of Special Federal Aviation Regulation No. 23, or those for transport category airplane type certification, no pilot may fly—

1. Under IFR into known or forecast moderate icing conditions; or

2. Under VFR into known light or moderate icing conditions unless the aircraft has functioning de-icing or anti-icing equipment protecting each propeller, windshield, wing, stabilizing or control surface, and each airspeed, altimeter, rate of climb, or flight attitude instrument system.

(c) Except for an airplane that has ice protection provisions that meet the requirements in section 34 of Special Federal Aviation Regulation No. 23, or those for transport category airplane type certification, no pilot may fly an airplane into known or forecast severe icing conditions.

(d) If current weather reports and briefing information relied upon by the pilot in command indicate that the forecast icing conditions that would otherwise prohibit the flight will not be encountered during the flight because of changed weather conditions since the forecast, the restrictions in paragraphs (b) and (c) of this section based on forecast conditions do not apply.

§ 91.529 Flight engineer requirements.

(a) No person may operate the following airplanes without a flight crewmember holding a current flight engineer certificate:

1. An airplane for which a type certificate was issued before January 2, 1964, having a maximum certificated takeoff weight of more than 80,000 pounds.
(2) An airplane type certificated after January 1, 1964, for which a flight engineer is required by the type certification requirements.

(b) No person may serve as a required flight engineer on an airplane unless, within the preceding 6 calendar months, that person has had at least 50 hours of flight time as a flight engineer on that type airplane or has been checked by the Administrator on that type airplane and is found to be familiar and competent with all essential current information and operating procedures.

§ 91.531 Second in command requirements.

(a) Except as provided in paragraph (b) of this section, no person may operate the following airplanes without a pilot who is designated as second in command of that airplane:

1. A large airplane, except that a person may operate an airplane certificated under SFAR 41 without a pilot who is designated as second in command if that airplane is certificated for operation with one pilot.

2. A turbojet-powered multiengine airplane for which two pilots are required under the type certification requirements for that airplane.

3. A commuter category airplane, except that a person may operate a commuter category airplane notwithstanding paragraph (a)(1) of this section, that has a passenger seating configuration, excluding pilot seats, of nine or less without a pilot who is designated as second in command if that airplane is certificated for operations with one pilot.

(b) The Administrator may issue a letter of authorization for the operation of an airplane without compliance with the requirements of paragraph (a) of this section if that airplane is designed for and type certificated with only one pilot station. The authorization contains any conditions that the Administrator finds necessary for safe operation.

(c) No person may designate a pilot to serve as second in command, nor may any pilot serve as second in command, of an airplane required under this section to have two pilots unless that pilot meets the qualifications for second in command prescribed in §61.55 of this chapter.

§ 91.533 Flight attendant requirements.

(a) No person may operate an airplane unless at least the following number of flight attendants are on board the airplane:

1. For airplanes having more than 19 but less than 51 passengers on board, one flight attendant.

2. For airplanes having more than 50 but less than 101 passengers on board, two flight attendants.

3. For airplanes having more than 100 passengers on board, two flight attendants plus one additional flight attendant for each unit (or part of a unit) of 50 passengers above 100.

(b) No person may serve as a flight attendant on an airplane unless that person has demonstrated to the pilot in command familiarity with the necessary functions to be performed in an emergency or a situation requiring emergency evacuation and is capable of using the emergency equipment installed on that airplane.

§ 91.535 Stowage of food, beverage, and passenger service equipment during aircraft movement on the surface, takeoff, and landing.

(a) No operator may move an aircraft on the surface, take off, or land when any food, beverage, or tableware furnished by the operator is located at any passenger seat.

(b) No operator may move an aircraft on the surface, take off, or land unless each food and beverage tray and seat back tray table is secured in its stowed position.

(c) No operator may permit an aircraft to move on the surface, take off, or land unless each passenger serving cart is secured in its stowed position.

(d) No operator may permit an aircraft to move on the surface, take off, or land unless each movie screen that extends into the aisle is stowed.

(e) Each passenger shall comply with instructions given by a crewmember with regard to compliance with this section.

[Doc. No. 26142, 57 FR 42672, Sept. 15, 1992]
§§ 91.536—91.599 [Reserved]

Subpart G—Additional Equipment and Operating Requirements for Large and Transport Category Aircraft

SOURCE: Docket No. 18334, 54 FR 34318, Aug. 18, 1989, unless otherwise noted.

§ 91.601 Applicability.
This subpart applies to operation of large and transport category U.S.-registered civil aircraft.

§ 91.603 Aural speed warning device.
No person may operate a transport category airplane in air commerce unless that airplane is equipped with an aural speed warning device that complies with §25.1303(c)(1).

§ 91.605 Transport category civil airplane weight limitations.
(a) No person may take off any transport category airplane (other than a turbine-engine-powered airplane certificated after September 30, 1958) unless—
(1) The takeoff weight does not exceed the authorized maximum takeoff weight for the elevation of the airport of takeoff;
(2) The elevation of the airport of takeoff is within the altitude range for which maximum takeoff weights have been determined;
(3) Normal consumption of fuel and oil in flight to the airport of intended landing will leave a weight on arrival not in excess of the authorized maximum landing weight for the elevation of that airport; and
(4) The elevations of the airport of intended landing and of all specified alternate airports are within the altitude range for which the maximum landing weights have been determined.
(b) No person may operate a turbine-engine-powered transport category airplane certificated after September 30, 1958, contrary to the Airplane Flight Manual, or take off that airplane unless—
(1) The takeoff weight does not exceed the takeoff weight specified in the Airplane Flight Manual for the elevation of the airport and for the ambient temperature existing at the time of takeoff;
(2) Normal consumption of fuel and oil in flight to the airport of intended landing and to the alternate airports will leave a weight on arrival not in excess of the landing weight specified in the Airplane Flight Manual for the elevation of each of the airports involved and for the ambient temperatures expected at the time of landing;
(3) The takeoff weight does not exceed the weight shown in the Airplane Flight Manual to correspond with the minimum distances required for takeoff, considering the elevation of the airport, the runway to be used, the effective runway gradient, the ambient temperature and wind component at the time of takeoff, and, if operating limitations exist for the minimum distances required for takeoff from wet runways, the runway surface condition (dry or wet). Wet runway distances associated with grooved or porous friction course runways, if provided in the Airplane Flight Manual, may be used only for runways that are grooved or treated with a porous friction course (PFC) overlay, and that the operator determines are designed, constructed, and maintained in a manner acceptable to the Administrator.
(4) Where the takeoff distance includes a clearway, the clearway distance is not greater than one-half of—
(i) The takeoff run, in the case of airplanes certificated after September 30, 1958, and before August 30, 1959; or
(ii) The runway length, in the case of airplanes certificated after August 29, 1959.
(c) No person may take off a turbine-engine-powered transport category airplane certificated after August 29, 1959, unless, in addition to the requirements of paragraph (b) of this section—
(1) The accelerate-stop distance is no greater than the length of the runway plus the length of the stopway (if present); and
(2) The takeoff distance is no greater than the length of the runway plus the length of the clearway (if present); and
(3) The takeoff run is no greater than the length of the runway.

[Doc. No. 18334, 54 FR 34318, Aug. 18, 1989, as amended by Amdt. 91-256, 63 FR 8321, Feb. 18, 1998]
§ 91.607 Emergency exits for airplanes carrying passengers for hire.

(a) Notwithstanding any other provision of this chapter, no person may operate a large airplane (type certificated under the Civil Air Regulations effective before April 9, 1957) in passenger-carrying operations for hire, with more than the number of occupants—

(1) Allowed under Civil Air Regulations §4b.362 (a), (b), and (c) as in effect on December 20, 1951; or

(2) Approved under Special Civil Air Regulations SR-387, SR-389, SR-389A, or SR-389B, or under this section as in effect.

However, an airplane type listed in the following table may be operated with up to the listed number of occupants (including crewmembers) and the corresponding number of exits (including emergency exits and doors) approved for the emergency exit of passengers or with an occupant-exit configuration approved under paragraph (b) or (c) of this section.

<table>
<thead>
<tr>
<th>Airplane type</th>
<th>Maximum number of occupants including all crewmembers</th>
<th>Corresponding number of exits authorized for passenger use</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-307</td>
<td>61</td>
<td>4</td>
</tr>
<tr>
<td>B-377</td>
<td>96</td>
<td>9</td>
</tr>
<tr>
<td>C-46</td>
<td>67</td>
<td>4</td>
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<tr>
<td>CV-240</td>
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<td>CV-340 and CV-440</td>
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<td>35</td>
<td>4</td>
</tr>
<tr>
<td>DC-3 (Super)</td>
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<td>5</td>
</tr>
<tr>
<td>DC-4</td>
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<td>L-049, L-649, L-749</td>
<td>87</td>
<td>7</td>
</tr>
<tr>
<td>L-1049 series</td>
<td>96</td>
<td>9</td>
</tr>
<tr>
<td>M-202</td>
<td>53</td>
<td>6</td>
</tr>
<tr>
<td>M-404</td>
<td>53</td>
<td>7</td>
</tr>
<tr>
<td>Viscount 700 series</td>
<td>53</td>
<td>7</td>
</tr>
</tbody>
</table>

(b) Occupants in addition to those authorized under paragraph (a) of this section may be carried as follows:

(1) For each additional floor-level exit at least 24 inches wide by 48 inches high, with an unobstructed 20-inch-wide access aisleway between the exit and the main passenger aisle, 12 additional occupants.

(2) For each additional window exit located over a wing that meets the requirements of the airworthiness standards under which the airplane was type certificated or that is large enough to inscribe an ellipse 19×26 inches, eight additional occupants.

(3) For each additional window exit that is not located over a wing but that otherwise complies with paragraph (b)(2) of this section, five additional occupants.

(4) For each airplane having a ratio (as computed from the table in paragraph (a) of this section) of maximum number of occupants to number of exits greater than 14:1, and for each airplane that does not have at least one full-size, door-type exit in the side of the fuselage in the rear part of the cabin, the first additional exit must be a floor-level exit that complies with paragraph (b)(1) of this section and must be located in the rear part of the cabin on the opposite side of the fuselage from the main entrance door. However, no person may operate an airplane under this section carrying more than 115 occupants unless there is such an exit on each side of the fuselage in the rear part of the cabin.

(c) No person may eliminate any approved exit except in accordance with the following:

(1) The previously authorized maximum number of occupants must be reduced by the same number of additional occupants authorized for that exit under this section.

(2) Exits must be eliminated in accordance with the following priority schedule: First, non-over-wing window exits; second, over-wing window exits; third, floor-level exits located in the forward part of the cabin; and fourth, floor-level exits located in the rear of the cabin.

(3) At least one exit must be retained on each side of the fuselage regardless of the number of occupants.

(4) No person may remove any exit that would result in a ratio of maximum number of occupants to approved exits greater than 14:1.

(d) This section does not relieve any person operating under part 121 of this chapter from complying with §121.291.

§ 91.609 Flight recorders and cockpit voice recorders.

(a) No holder of an air carrier operating certificate or an operating certificate may conduct any operation under this part with an aircraft listed in the
§ 91.609  holder's operations specifications or current list of aircraft used in air transportation unless that aircraft complies with any applicable flight recorder and cockpit voice recorder requirements of the part under which its certificate is issued except that the operator may—
(1) Ferry an aircraft with an inoperative flight recorder or cockpit voice recorder from a place where repair or replacement cannot be made to a place where they can be made;
(2) Continue a flight as originally planned, if the flight recorder or cockpit voice recorder becomes inoperative after the aircraft has taken off;
(3) Conduct an airworthiness flight test during which the flight recorder or cockpit voice recorder is turned off to test it or to test any communications or electrical equipment installed in the aircraft; or
(4) Ferry a newly acquired aircraft from the place where possession of it is taken to a place where the flight recorder or cockpit voice recorder is to be installed.
(b) Notwithstanding paragraphs (c) and (e) of this section, an operator other than the holder of an air carrier or a commercial operator certificate may—
(1) Ferry an aircraft with an inoperative flight recorder or cockpit voice recorder from a place where repair or replacement cannot be made to a place where they can be made;
(2) Continue a flight as originally planned if the flight recorder or cockpit voice recorder becomes inoperative after the aircraft has taken off;
(3) Conduct an airworthiness flight test during which the flight recorder or cockpit voice recorder is turned off to test it or to test any communications or electrical equipment installed in the aircraft;
(4) Ferry a newly acquired aircraft from the place where possession of it was taken to a place where the flight recorder or cockpit voice recorder is to be installed;
(5) Operate an aircraft:
   (i) For not more than 15 days while the flight recorder and/or cockpit voice recorder is inoperative and/or removed for repair provided that the aircraft maintenance records contain an entry that indicates the date of failure, and a placard is located in view of the pilot to show that the flight recorder or cockpit voice recorder is inoperative.
   (ii) For not more than an additional 15 days, provided that the requirements in paragraph (b)(5)(i) are met and that a certificated pilot, or a certificated person authorized to return an aircraft to service under §43.7 of this chapter, certifies in the aircraft maintenance records that additional time is required to complete repairs or obtain a replacement unit.
(c) No person may operate a U.S. civil registered, multiengine, turbine-powered airplane or rotorcraft having a passenger seating configuration, excluding any pilot seats of 10 or more that has been manufactured after October 11, 1991, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium, that are capable of recording the data specified in appendix E to this part, for an airplane, or appendix F to this part, for a rotorcraft, of this part within the range, accuracy, and recording interval specified, and that are capable of retaining no less than 8 hours of aircraft operation.
(d) Whenever a flight recorder, required by this section, is installed, it must be operated continuously from the instant the airplane begins the takeoff roll or the rotorcraft begins lift-off until the airplane has completed the landing roll or the rotorcraft has landed at its destination.
(e) Unless otherwise authorized by the Administrator, after October 11, 1991, no person may operate a U.S. civil registered multiengine, turbine-powered airplane or rotorcraft having a passenger seating configuration of six passengers or more and for which two pilots are required by type certification or operating rule unless it is equipped with an approved cockpit voice recorder that:
   (1) Is installed in compliance with §23.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); §25.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); §27.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); or §29.1457(a) (1) and (2), (b), (c), (d), (e),
(f) and (g) of this chapter, as applicable; and
(2) Is operated continuously from the use of the checklist before the flight to completion of the final checklist at the end of the flight.
(f) In complying with this section, an approved cockpit voice recorder having an erasure feature may be used, so that at any time during the operation of the recorder, information recorded more than 15 minutes earlier may be erased or otherwise obliterated.
(g) In the event of an accident or occurrence requiring immediate notification to the National Transportation Safety Board under part 830 of its regulations that results in the termination of the flight, any operator who has installed approved flight recorders and approved cockpit voice recorders shall keep the recorded information for at least 60 days or, if requested by the Administrator or the Board, for a longer period. Information obtained from the record is used to assist in determining the cause of accidents or occurrences in connection with the investigation under part 830. The Administrator does not use the cockpit voice recorder record in any civil penalty or certificate action.

§ 91.611 Authorization for ferry flight with one engine inoperative.

(a) General. The holder of an air carrier operating certificate or an operating certificate issued under part 125 may conduct a ferry flight of a four-engine airplane or a turbine-engine-powered airplane equipped with three engines, with one engine inoperative, to a base for the purpose of repairing that engine subject to the following:
(1) The airplane model has been test flown and found satisfactory for safe flight in accordance with paragraph (b) or (c) of this section, as appropriate. However, each operator who before November 19, 1966, has shown that a model of airplane with an engine inoperative is satisfactory for safe flight by a test flight conducted in accordance with performance data contained in the applicable Airplane Flight Manual under paragraph (a)(2) of this section need not repeat the test flight for that model.
(2) The approved Airplane Flight Manual contains the following performance data and the flight is conducted in accordance with that data:
(i) Maximum weight.
(ii) Center of gravity limits.
(iii) Configuration of the inoperative propeller (if applicable).
(iv) Runway length for takeoff (including temperature accountability).
(v) Altitude range.
(vi) Certificate limitations.
(vii) Ranges of operational limits.
(viii) Performance information.
(ix) Operating procedures.
(3) The operator has FAA approved procedures for the safe operation of the airplane, including specific requirements for—
(i) Limiting the operating weight on any ferry flight to the minimum necessary for the flight plus the necessary reserve fuel load;
(ii) A limitation that takeoffs must be made from dry runways unless, based on a showing of actual operating takeoff techniques on wet runways with one engine inoperative, takeoffs with full controllability from wet runways have been approved for the specific model aircraft and included in the Airplane Flight Manual:
(iii) Operations from airports where the runways may require a takeoff or approach over populated areas; and
(iv) Inspection procedures for determining the operating condition of the operative engines.
(4) No person may take off an airplane under this section if—
(i) The initial climb is over thickly populated areas; or
(ii) Weather conditions at the takeoff or destination airport are less than those required for VFR flight.
(5) Persons other than required flight crewmembers shall not be carried during the flight.
(6) No person may use a flight crewmember for flight under this section unless that crewmember is thoroughly familiar with the operating procedures for one-engine inoperative ferry flight contained in the certificate holder's
§ 91.611 14 CFR Ch. I (1-1-99 Edition)


(b) Flight tests: reciprocating-engine-powered airplanes. The airplane performance of a reciprocating-engine-powered airplane with one engine inoperative must be determined by flight test as follows:

(1) A speed not less than 1.3 $V_{S1}$ must be chosen at which the airplane may be controlled satisfactorily in a climb with the critical engine inoperative (with its propeller removed or in a configuration desired by the operator and with all other engines operating at the maximum power determined in paragraph (b)(3) of this section.

(2) The distance required to accelerate to the speed listed in paragraph (b)(1) of this section and to climb to 50 feet must be determined with—

(i) The landing gear extended;

(ii) The critical engine inoperative and its propeller removed or in a configuration desired by the operator; and

(iii) The other engines operating at not more than maximum power established under paragraph (b)(3) of this section.

(3) The takeoff, flight and landing procedures, such as the approximate trim settings, method of power application, maximum power, and speed must be established.

(4) The performance must be determined at a maximum weight not greater than the weight that allows a rate of climb of at least 400 feet per minute in the en route configuration set forth in §25.67(d) of this chapter in effect on January 31, 1977, at an altitude of 5,000 feet.

(5) The performance must be determined using temperature accountability for the takeoff field length, computed in accordance with §25.61 of this chapter in effect on January 31, 1977.

(c) Flight tests: Turbine-engine-powered airplanes. The airplane performance of a turbine-engine-powered airplane with one engine inoperative must be determined by flight tests, including at least three takeoff tests, in accordance with the following:

(1) Takeoff speeds $V_R$ and $V_T$, not less than the corresponding speeds under which the airplane was type certified under §25.107 of this chapter, must be chosen at which the airplane may be controlled satisfactorily with the critical engine inoperative (with its propeller removed or in a configuration desired by the operator, if applicable) and with all other engines operating at not more than the power selected for type certification as set forth in §25.101 of this chapter.

(2) The minimum takeoff field length must be the horizontal distance required to accelerate and climb to the 35-foot height at $V_T$ speed (including any additional speed increment obtained in the tests) multiplied by 115 percent and determined with—

(i) The landing gear extended;

(ii) The critical engine inoperative and its propeller removed or in a configuration desired by the operator (if applicable); and

(iii) The other engine operating at not more than the power selected for type certification as set forth in §25.101 of this chapter.

(3) The takeoff, flight, and landing procedures such as the approximate trim setting, method of power application, maximum power, and speed must be established. The airplane must be satisfactorily controllable during the entire takeoff run when operated according to these procedures.

(4) The performance must be determined at a maximum weight not greater than the weight determined under §25.121(c) of this chapter but with—

(i) The actual steady gradient of the final takeoff climb requirement not less than 1.2 percent at the end of the takeoff path with two critical engines inoperative; and

(ii) The climb speed not less than the two-engine inoperative trim speed for the actual steady gradient of the final takeoff climb prescribed by paragraph (c)(4)(i) of this section.

(5) The airplane must be satisfactorily controllable in a climb with two critical engines inoperative. Climb performance may be shown by calculations based on, and equal in accuracy to, the results of testing.

(6) The performance must be determined using temperature accountability for takeoff distance and final takeoff climb computed in accordance with §25.101 of this chapter.
For the purpose of paragraphs (c)(4) and (5) of this section, two critical engines means two adjacent engines on one side of an airplane with four engines, and the center engine and one outboard engine on an airplane with three engines.

§ 91.613 Materials for compartment interiors.

No person may operate an airplane that conforms to an amended or supplemental type certificate issued in accordance with SFAR No. 41 for a maximum certificated takeoff weight in excess of 12,500 pounds unless within 1 year after issuance of the initial airworthiness certificate under that SFAR the airplane meets the compartment interior requirements set forth in § 25.853 (a), (b), (b-1), (b-2), and (b-3) of this chapter in effect on September 26, 1978.

§§ 91.615–91.699 [Reserved]

Subpart H—Foreign Aircraft Operations and Operations of U.S.-Registered Civil Aircraft Outside of the United States

Source: Docket No. 18334, 54 FR 34320, Aug. 18, 1989, unless otherwise noted.

§ 91.701 Applicability.

This subpart applies to the operations of civil aircraft of U.S. registry outside of the United States and the operations of foreign civil aircraft within the United States.

§ 91.703 Operations of civil aircraft of U.S. registry outside of the United States.

(a) Each person operating a civil aircraft of U.S. registry outside of the United States shall—

(1) When over the high seas, comply with annex 2 (Rules of the Air) to the Convention on International Civil Aviation and with §§91.117(c), 91.127, 91.129, and 91.131;

(2) When within a foreign country, comply with the regulations relating to the flight and maneuver of aircraft there in force;

(3) Except for §§91.307(b), 91.309, 91.323, and 91.711, comply with this part so far as it is not inconsistent with applicable regulations of the foreign country where the aircraft is operated or annex 2 of the Convention on International Civil Aviation; and

(4) When operating within airspace designated as Minimum Navigation Performance Specifications (MNPS) airspace, comply with §91.705. When operating within airspace designated as Reduced Vertical Separation Minimum (RVSM) airspace, comply with §91.706.

(b) Annex 2 to the Convention on International Civil Aviation, Ninth Edition—July 1990, with Amendments through Amendment 32 effective February 19, 1996, to which reference is made in this part, is incorporated into this part and made a part hereof as provided in 5 U.S.C. §552 and pursuant to 1 CFR part 51. Annex 2 (including a complete historic file of changes thereto) is available for public inspection at the Rules Docket, AGC-200, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC. In addition, Annex 2 may be purchased from the International Civil Aviation Organization (Attention: Distribution Officer), P.O. Box 400, Succursale, Place de L’Aviation Internationale, 1000 Sherbrooke Street West, Montreal, Quebec, Canada H3A 2R2.


(a) Except as provided in paragraph (b) of this section, no person may operate a civil aircraft of U.S. registry in airspace designated as Minimum Navigation Performance Specifications airspace unless—

(1) The aircraft has approved navigation performance capability that complies with the requirements of appendix C of this part; and

(2) The operator is authorized by the Administrator to perform such operations.

(b) The Administrator may authorize a deviation from the requirements of
§ 91.706 Operations within airspace designed as Reduced Vertical Separation Minimum Airspace.

(a) Except as provided in paragraph (b) of this section, no person may operate a civil aircraft of U.S. registry in airspace designated as Reduced Vertical Separation Minimum (RVSM) airspace unless:

(1) The operator and the operator's aircraft comply with the requirements of appendix G of this part; and

(2) The operator is authorized by the Administrator to conduct such operations.

(b) The Administrator may authorize a deviation from the requirements of this section in accordance with Section 5 of appendix G to this part.

§ 91.707 Flights between Mexico or Canada and the United States.

Unless otherwise authorized by ATC, no person may operate a civil aircraft between Mexico or Canada and the United States without filing an IFR or VFR flight plan, as appropriate.

§ 91.709 Operations to Cuba.

No person may operate a civil aircraft from the United States to Cuba unless—

(a) Departure is from an international airport of entry designated in § 6.13 of the Air Commerce Regulations of the Bureau of Customs (19 CFR 6.13); and

(b) In the case of departure from any of the 48 contiguous States or the District of Columbia, the pilot in command of the aircraft has filed—

(1) A DVFR or IFR flight plan as prescribed in §99.11 or §99.13 of this chapter; and

(2) A written statement, within 1 hour before departure, with the Office of Immigration and Naturalization Service at the airport of departure, containing—

(i) All information in the flight plan;

(ii) The name of each occupant of the aircraft;

(iii) The number of occupants of the aircraft; and

(iv) A description of the cargo, if any.

This section does not apply to the operation of aircraft by a scheduled air carrier over routes authorized in operations specifications issued by the Administrator.

(Approved by the Office of Management and Budget under control number 2120-0005)

§ 91.711 Special rules for foreign civil aircraft.

(a) General. In addition to the other applicable regulations of this part, each person operating a foreign civil aircraft within the United States shall comply with this section.

(b) VFR. No person may conduct VFR operations which require two-way radio communications under this part unless at least one crewmember of that aircraft is able to conduct two-way radio communications in the English language and is on duty during that operation.

(c) IFR. No person may operate a foreign civil aircraft under IFR unless—

(1) That aircraft is equipped with—

(i) Radio equipment allowing two-way radio communication with ATC when it is operated in controlled airspace; and

(ii) Radio navigational equipment appropriate to the navigational facilities to be used;

(2) Each person piloting the aircraft—

(i) Holds a current United States instrument rating or is authorized by his foreign airman certificate to pilot under IFR; and

(ii) Is thoroughly familiar with the United States en route, holding, and letdown procedures; and

(3) At least one crewmember of that aircraft is able to conduct two-way radiotelephone communications in the English language and that crewmember is on duty while the aircraft is approaching, operating within, or leaving the United States.

(d) Over water. Each person operating a foreign civil aircraft over water off the shores of the United States shall give flight notification or file a flight plan in accordance with the Supplementary Procedures for the ICAO region concerned.
Federal Aviation Administration, DOT § 91.801

(e) Flight at and above FL 240. If VOR navigational equipment is required under paragraph (c)(1)(ii) of this section, no person may operate a foreign civil aircraft within the 50 States and the District of Columbia at or above FL 240, unless the aircraft is equipped with distance measuring equipment (DME) capable of receiving and indicating distance information from the VORTAC facilities to be used. When DME required by this paragraph fails at and above FL 240, the pilot in command of the aircraft shall notify ATC immediately and may then continue operations at and above FL 240 to the next airport of intended landing at which repairs or replacement of the equipment can be made. However, paragraph (e) of this section does not apply to foreign civil aircraft that are not equipped with DME when operated for the following purposes and if ATC is notified prior to each takeoff:

1. Ferry flights to and from a place in the United States where repairs or alterations are to be made.

2. Ferry flights to a new country of registry.

3. Flight of a new aircraft of U.S. manufacture for the purpose of—
   (i) Flight testing the aircraft;
   (ii) Training foreign flight crews in the operation of the aircraft; or
   (iii) Ferrying the aircraft for export delivery outside the United States.

4. Ferry, demonstration, and test flight of an aircraft brought to the United States for the purpose of demonstration or testing the whole or any part thereof.


§§ 91.717–91.799 [Reserved]

Subpart I—Operating Noise Limits

Source: Docket No. 18334, 54 FR 34321, Aug. 18, 1989, unless otherwise noted.

§ 91.801 Applicability: Relation to part 36.

(a) This subpart prescribes operating noise limits and related requirements that apply, as follows, to the operation of civil aircraft in the United States.

1. Sections 91.803, 91.805, 91.807, 91.809, and 91.811 apply to civil subsonic turbojet airplanes with maximum weights of more than 75,000 pounds and—
   (i) If U.S. registered, that have standard airworthiness certificates; or
   (ii) If foreign registered, that would be required by this chapter to have a U.S. standard airworthiness certificate.
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in order to conduct the operations intended for the airplane were it registered in the United States. Those sections apply to operations to or from airports in the United States under this part and parts 121, 125, 129, and 135 of this chapter.

(2) Section 91.813 applies to U.S. operators of civil subsonic turbojet airplanes covered by this subpart. This section applies to operators operating to or from airports in the United States under this part and parts 121, 125, and 129, but not to those operating under part 129 of this chapter.

(3) Sections 91.803, 91.819, and 91.821 apply to U.S.-registered civil supersonic airplanes having standard airworthiness certificates and to foreign-registered civil supersonic airplanes that, if registered in the United States, would be required by this chapter to have U.S. standard airworthiness certificates in order to conduct the operations intended for the airplane. Those sections apply to operations under this part and under parts 121, 125, 129, and 135 of this chapter.

(b) Unless otherwise specified, as used in this subpart “part 36” refers to 14 CFR part 36, including the noise levels under appendix C of that part, notwithstanding the provisions of that part exempting certain airplanes from the specified noise requirements. For purposes of this subpart, the various stages of noise levels, the terms used to describe airplanes with respect to those levels, and the terms “subsonic airplane” and “supersonic airplane” have the meanings specified under part 36 of this chapter. For purposes of this subpart, for subsonic airplanes operated in foreign air commerce in the United States, the Administrator may accept compliance with the noise requirements under annex 16 of the International Civil Aviation Organization when those requirements have been shown to be substantially compatible with, and achieve results equivalent to, those achievable under part 36 of this airplane. Determinations made under these provisions are subject to the limitations of §36.5 of this chapter as if those noise levels were part 36 noise levels.

(c) Sections 91.851 through 91.877 of this subpart prescribe operating noise limits and related requirements that apply to any civil subsonic turbojet airplane with a maximum certificated weight of more than 75,000 pounds operating to or from an airport in the 48 contiguous United States and the District of Columbia under this part, part 121, 125, 129, or 135 of this chapter on and after September 25, 1991.

(d) Section 91.877 prescribes reporting requirements that apply to any civil subsonic turbojet airplane with a maximum weight of more than 75,000 pounds operated by an air carrier or foreign air carrier between the contiguous United States and the State of Hawaii, between the State of Hawaii and any point outside of the 48 contiguous United States, or between the islands of Hawaii in turnaround service, under part 121 or 129 of this chapter on or after November 5, 1990.


§ 91.803 Part 125 operators: Designation of applicable regulations.

For airplanes covered by this subpart and operated under part 125 of this chapter, the following regulations apply as specified:

(a) For each airplane operation to which requirements prescribed under this subpart applied before November 29, 1980, those requirements of this subpart continue to apply.

(b) For each subsonic airplane operation to which requirements prescribed under this subpart did not apply before November 29, 1980, because the airplane was not operated in the United States under this part or part 121, 129, or 135 of this chapter, the Administrator may accept compliance with the noise requirements prescribed under §§91.805, 91.809, 91.811, and 91.813 of this subpart.

(c) For each supersonic airplane operation to which requirements prescribed under this subpart did not apply before November 29, 1980, because the airplane was not operated in the United States under this part or part 121, 129, or 135 of this chapter, the requirements prescribed under §§91.819 and 91.821 of this subpart apply.

(d) For each airplane required to operate under part 125 for which a deviation under that part is approved to
operate, in whole or in part, under this part or part 121, 129, or 135 of this chapter, notwithstanding the approval, the requirements prescribed under paragraphs (a), (b), and (c) of this section continue to apply.

§ 91.805 Final compliance: Subsonic airplanes.

Except as provided in §§ 91.809 and 91.811, on and after January 1, 1985, no person may operate to or from an airport in the United States any subsonic airplane covered by this subpart unless that airplane has been shown to comply with Stage 2 or Stage 3 noise levels under part 36 of this chapter.

§ 91.807 Phased compliance under parts 121, 125, and 135: Subsonic airplanes.

(a) General. Each person operating airplanes under part 121, 125, or 135 of this chapter, as prescribed under § 91.803 of this subpart, regardless of the state of registry of the airplane, shall comply with this section with respect to subsonic airplanes covered by this subpart.

(b) Compliance schedules. Except for airplanes shown to be operated in foreign air commerce under paragraph (c) of this section or covered by an exemption (including those issued under § 91.811), airplanes operated by U.S. operators in air commerce in the United States must be shown to comply with Stage 2 or Stage 3 noise levels under part 36 of this chapter, in accordance with the following schedule, or they may not be operated to or from airports in the United States:

(1) By January 1, 1983—
   (i) At least one-quarter of the airplanes that have four engines with no bypass ratio or with a bypass ratio less than two; and
   (ii) At least half of the airplanes powered by engines with any other bypass ratio or by another number of engines.

(2) By January 1, 1985—
   (i) At least one-half of the airplanes that have four engines with no bypass ratio or with a bypass ratio less than two; and
   (ii) All airplanes powered by engines with any other bypass ratio or by another number of engines.

(c) Apportionment of airplanes. For purposes of paragraph (b) of this section, a person operating airplanes engaged in domestic and foreign air commerce in the United States may elect not to comply with the phased schedule with respect to that portion of the airplanes operated by that person shown, under an approved method of apportionment, to be engaged in foreign air commerce in the United States.

§ 91.809 Replacement airplanes.

A Stage 1 airplane may be operated after the otherwise applicable compliance dates prescribed under §§ 91.805 and 91.807 if, under an approved plan, a replacement airplane has been ordered by the operator under a binding contract as follows:

(a) For replacement of an airplane powered by two engines, until January 1, 1986, but not after the date specified in the plan, if the contract is entered into by January 1, 1983, and specifies delivery before January 1, 1986, of a replacement airplane which has been shown to comply with Stage 3 noise levels under part 36 of this chapter.

(b) For replacement of an airplane powered by three engines, until January 1, 1985, but not after the date specified in the plan, if the contract is entered into by January 1, 1983, and specifies delivery before January 1, 1985, of a replacement airplane which has been shown to comply with Stage 3 noise levels under part 36 of this chapter.

(c) For replacement of any other airplane, until January 1, 1985, but not after the date specified in the plan, if the contract specifies delivery before January 1, 1985, of a replacement airplane which—

(1) Has been shown to comply with Stage 2 or Stage 3 noise levels under part 36 of this chapter prior to issuance of an original standard airworthiness certificate; or

(2) Has been shown to comply with Stage 3 noise levels under part 36 of this chapter prior to issuance of a standard airworthiness certificate other than original issue.
§ 91.811 Service to small communities exemption: Two-engine, subsonic airplanes.

(a) A Stage I airplane powered by two engines may be operated after the compliance dates prescribed under §§91.805, 91.807, and 91.809 when, with respect to that airplane, the Administrator issues an exemption to the operator from the noise level requirements under this subpart. Each exemption issued under this section terminates on the earliest of the following dates:

1. For an exempted airplane sold, or otherwise disposed of, to another person on or after January 1, 1983, on the date of delivery to that person.
2. For an exempted airplane with a seating configuration of 100 passenger seats or less, on January 1, 1988.
3. For an exempted airplane with a seating configuration of more than 100 passenger seats, on January 1, 1985.

(b) For the purpose of this section, the seating configuration of an airplane is governed by that shown to exist on December 1, 1979, or an earlier date established for that airplane by the Administrator.

§ 91.813 Compliance plans and status: U.S. operations of subsonic airplanes.

(a) Each U.S. operator of a civil subsonic airplane covered by this subpart (regardless of the state of registry) shall submit to the Director, Office of Environment and Energy, in accordance with this section, the operator's current compliance status and plan for achieving and maintaining compliance with the applicable noise level requirements of this subpart. If appropriate, an operator may substitute for the required plan a notice, certified as true (under penalty of 18 U.S.C. 1001) by that operator, that no change in the plan or status of any airplane affected by the plan has occurred since the date of the plan most recently submitted under this section.

(b) Each compliance plan, including each revised plan, must contain the information specified under paragraph (c) of this section for each airplane covered by this section that is operated by the operator. Unless otherwise approved by the Administrator, compliance plans must provide the required plan and status information as it exists on the date 30 days before the date specified for submission of the plan. Plans must be certified by the operator as true and complete (under penalty of 18 U.S.C. 1001) and be submitted for each airplane covered by this section on or before 90 days after initially commencing operation of airplanes covered by this section, whichever is later, and thereafter—

1. Thirty days after any change in the operator's fleet or compliance planning decisions that has a separate or cumulative effect on 10 percent or
Federal Aviation Administration, DOT § 91.813

more of the airplanes in either class of airplanes covered by §91.807(b); and

(2) Thirty days after each compliance date applicable to that airplane under this subpart, and annually thereafter through 1985, or until any later date for that airplane prescribed under this subpart, on the anniversary of that submission date, to show continuous compliance with this subpart.

c) Each compliance plan submitted under this section must identify the operator and include information regarding the compliance plan and status for each airplane covered by the plan as follows:

(1) Name and address of the airplane operator.

(2) Name and telephone number of the person designated by the operator to be responsible for the preparation of the compliance plan and its submission.

(3) The total number of airplanes covered by this section and in each of the following classes and subclasses:

(i) For airplanes engaged in domestic air commerce—

(A) Airplanes powered by four turbojet engines with no bypass ratio or with a bypass ratio less than two;

(B) Airplanes powered by engines with any other bypass ratio or by another number of engines; and

(C) Airplanes covered by an exemption issued under §91.811 of this subpart.

(ii) For airplanes engaged in foreign air commerce under an approved apportionment plan—

(A) Airplanes powered by four turbojet engines with no bypass ratio or with a bypass ratio less than two;

(B) Airplanes powered by engines with any other bypass ratio or by another number of engines; and

(C) Airplanes covered by an exemption issued under §91.811 of this subpart.

(xi) For airplanes covered by an approved replacement plan under §91.807(c) of this subpart, the appropriate code prescribed under paragraph (c)(5) of this section followed by the scheduled month and year for replacement of the airplane;

(xii) For airplanes designated as “engaged in foreign commerce” in accordance with an approved method of apportionment under §91.807(c) of this subpart, the appropriate code prescribed under paragraph (c)(5) of this section;

(xiii) For airplanes covered by an exemption issued to the operator granting relief from noise level requirements of this subpart, the appropriate code prescribed under paragraph (c)(5) of this section followed by the actual or scheduled month and year of expiration of the exemption and the appropriate code and applicable dates which indicate the compliance strategy planned or implemented for the airplane;

(vi) Whether part 36 noise level compliance has been shown, “Yes/No”;

(vii) The appropriate code prescribed under paragraph (c)(5) of this section which indicates the acoustical technology installed, or to be installed, on the airplane;

(viii) For airplanes on which acoustical technology has been or will be applied, following the appropriate code entry, the actual or scheduled month and year of installation on the airplane;

(ix) For DC-8 and B-707 airplanes operated in domestic U.S. air commerce which have been or will be retired from service in the United States without replacement between January 24, 1977, and January 1, 1985, the appropriate code prescribed under paragraph (c)(5) of this section followed by the actual or scheduled month and year of retirement of the airplane from service;

(x) For DC-8 and B-707 airplanes operated in foreign air commerce in the United States which have been or will be retired from service in the United States without replacement between April 14, 1980, and January 1, 1985, the appropriate code prescribed under paragraph (c)(5) of this section followed by the actual or scheduled month and year of retirement of the airplane from service;

(xi) For airplanes covered by an approved replacement plan under §91.807(c) of this subpart, the appropriate code prescribed under paragraph (c)(5) of this section followed by the scheduled month and year for replacement of the airplane;

(xii) For airplanes covered by an exemption issued to the operator granting relief from noise level requirements of this subpart, the appropriate code prescribed under paragraph (c)(5) of this section followed by the actual or scheduled month and year of expiration of the exemption and the appropriate code and applicable dates which indicate the compliance strategy planned or implemented for the airplane;
(xv) For airplanes for which none of the codes prescribed under paragraph (c)(5) of this section describes either the technology applied or to be applied to the airplane in accordance with the certification requirements under parts 21 and 36 of this chapter, or the compliance strategy or methodology following the code "OTH," enter the date of any certificate action and attach an addendum to the plan explaining the nature and the extent of the certificated technology, strategy, or methodology employed, with reference to the type certificate documentation.

(5) Table of Acoustical Technology/Strategy Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Airplane type/model</th>
<th>Certificate technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B-707-120B; B-707-320B; C-720B</td>
<td>Quiet nacelles + 1-ring.</td>
</tr>
<tr>
<td>B</td>
<td>B-727-100</td>
<td>Double wall fan duct treatment.</td>
</tr>
<tr>
<td>C</td>
<td>B-727-200</td>
<td>Double wall fan duct treatment (pre-January 1977 installations and amended type certificate).</td>
</tr>
<tr>
<td>D</td>
<td>B-727-200; B-737-100; B-737-200</td>
<td>Quiet nacelles + double wall fan duct treatment.</td>
</tr>
<tr>
<td>E</td>
<td>B-747-100 (pre-December 1971); B-747-200 (pre-December 1971)</td>
<td>Fixed lip inlets + sound absorbing material treatment.</td>
</tr>
<tr>
<td>F</td>
<td>DC-8</td>
<td>New extended inlet and bullet with treatment + fan duct treatment areas.</td>
</tr>
<tr>
<td>G</td>
<td>DC-9</td>
<td>P-36 sound absorbing material treatment kit.</td>
</tr>
<tr>
<td>I</td>
<td>BAC-111-400</td>
<td>Silencer kit (BAC Acoustic Report 598).</td>
</tr>
<tr>
<td>J</td>
<td>B-707, DC-8</td>
<td>Reengined with high bypass ratio turbojet engines + quiet nacelles (if certificated under stage 3 noise level requirements).</td>
</tr>
</tbody>
</table>

REP—For airplanes covered by an approved replacement plan under §91.807(c) of this subpart.

EFC—For airplanes designated as “engaged in foreign commerce” in accordance with an approved method of apportionment under §91.811 of this subpart.


EXD—For airplanes exempted from showing compliance with the noise level requirements of this subpart.

OTH—For airplanes for which no other prescribed code describes either the certificated technology applied or to be applied to the airplane, or the compliance strategy or methodology. (An addendum must explain the nature and extent of technology, strategy, or methodology and reference the type certificate documentation.)

§91.815 Agricultural and fire fighting airplanes: Noise operating limitations.

(a) This section applies to propeller-driven, small airplanes having standard airworthiness certificates that are designed for “agricultural aircraft operations” (as defined in §137.3 of this chapter, as effective on January 1, 1966) or for dispensing fire fighting materials.

(b) If the Airplane Flight Manual, or other approved manual material information, markings, or placards for the airplane indicate that the airplane has not been shown to comply with the noise limits under part 36 of this chapter, no person may operate that airplane, except—

(1) To the extent necessary to accomplish the work activity directly associated with the purpose for which it is designed;

(2) To provide flight crewmember training in the special purpose operation for which the airplane is designed; and

(3) To conduct “nondispensing aerial work operations” in accordance with the requirements under §137.29(c) of this chapter.
§ 91.817 Civil aircraft sonic boom.

(a) No person may operate a civil aircraft in the United States at a true flight Mach number greater than 1 except in compliance with conditions and limitations in an authorization to exceed Mach 1 issued to the operator under appendix B of this part.

(b) In addition, no person may operate a civil aircraft for which the maximum operating limit speed \( M_{\text{MO}} \) exceeds a Mach number of 1, to or from an airport in the United States, unless—

1. Information available to the flight crew includes flight limitations that ensure that flights entering or leaving the United States will not cause a sonic boom to reach the surface within the United States; and

2. The operator complies with the flight limitations prescribed in paragraph (b)(1) of this section or complies with conditions and limitations in an authorization to exceed Mach 1 issued under appendix B of this part.

(Approved by the Office of Management and Budget under control number 2120-0005)

§ 91.819 Civil supersonic airplanes that do not comply with part 36.

(a) Applicability. This section applies to civil supersonic airplanes that have not been shown to comply with the Stage 2 noise limits of part 36 in effect on October 13, 1977, using applicable trade-off provisions, and that are operated in the United States, after July 31, 1978.

(b) Airport use. Except in an emergency, the following apply to each person who operates a civil supersonic airplane to or from an airport in the United States:

1. Regardless of whether a type design change approval is applied for under part 21 of this chapter, no person may land or take off an airplane covered by this section for which the type design is changed, after July 31, 1978, in a manner constituting an “acoustical change” under §21.93 unless the acoustical change requirements of part 36 are complied with.

2. No flight may be scheduled, or otherwise planned, for takeoff or landing after 10 p.m. and before 7 a.m. local time.

§ 91.821 Civil supersonic airplanes: Noise limits.

Except for Concorde airplanes having flight time before January 1, 1980, no person may operate in the United States, a civil supersonic airplane that does not comply with Stage 2 noise limits of part 36 in effect on October 13, 1977, using applicable trade-off provisions.

§§ 91.823-91.849 [Reserved]

§ 91.851 Definitions.

For the purposes of §91.851 through 91.877 of this subpart:

Contiguous United States means the area encompassed by the 48 contiguous United States and the District of Columbia.

Fleet means those civil subsonic turbojet airplanes with a maximum certificated weight of more than 75,000 pounds that are listed on an operator’s operations specifications as eligible for operation in the contiguous United States.

Import means a change in ownership of an airplane from a non-U.S. person to a U.S. person when the airplane is brought into the United States for operation.

Operations specifications means an enumeration of airplanes by type, model, series, and serial number operated by the operator or foreign air carrier on a given day, regardless of how or whether such airplanes are formally listed or designated by the operator.

Owner means any person that has indicia of ownership sufficient to register the airplane in the United States pursuant to part 47 of this chapter.

New entrant means an air carrier or foreign air carrier that, on or before November 5, 1990, did not conduct operations under part 121 or 129 of this chapter using an airplane covered by this subpart to or from any airport in the contiguous United States, but that initiates such operation after that date.

Stage 2 noise levels mean the requirements for Stage 2 noise levels as defined in part 36 of this chapter in effect on November 5, 1990.
§ 91.853  
Stage 3 noise levels mean the requirements for Stage 3 noise levels as defined in part 36 of this chapter in effect on November 5, 1990.

Stage 2 airplane means a civil subsonic turbojet airplane with a maximum certificated weight of 75,000 pounds or more that complies with Stage 2 noise levels as defined in part 36 of this chapter.

Stage 3 airplane means a civil subsonic turbojet airplane with a maximum certificated weight of 75,000 pounds or more that complies with Stage 3 noise levels as defined in part 36 of this chapter.

§ 91.855  
Entry and nonaddition rule.

No person may operate any airplane subject to §91.801(c) of this subpart to or from any airport in the contiguous United States unless one or more of the following apply:

(a) The airplane complies with Stage 3 noise levels.

(b) The airplane complies with Stage 2 noise levels and was owned by a U.S. person on and since November 5, 1990. Stage 2 airplanes that meet these criteria and are leased to foreign airlines are also subject to the return provisions of paragraph (e) of this section.

(c) The airplane complies with Stage 2 noise levels, is owned by a non-U.S. person, and is the subject of a binding lease to a U.S. person effective before and on September 25, 1991. Any such airplane may be operated for the term of the lease in effect on that date, and any extensions thereof provided for in that lease.

(d) The airplane complies with Stage 2 noise levels and is operated by a foreign air carrier.

(e) The airplane complies with Stage 2 noise levels and is operated by a foreign operator other than for the purpose of foreign air commerce.

(f) The airplane complies with Stage 2 noise levels and—

(1) On November 5, 1990, was owned by:

(i) A corporation, trust, or partnership organized under the laws of the United States or any State (including individual States, territories, possessions, and the District of Columbia);

(ii) An individual who is a citizen of the United States; or

(iii) An entity owned or controlled by a corporation, trust, partnership, or individual described in paragraph (f)(1)(i) or (ii) of this section; and

(2) Enters into the United States not later than 6 months after the expiration of a lease agreement (including any extensions thereof) between an owner described in paragraph (f)(1) of this section and a foreign airline.

(g) The airplane complies with Stage 2 noise levels and was purchased by the importer under a written contract executed before November 5, 1990.

(h) Any Stage 2 airplane described in this section is eligible for operation in the contiguous United States only as provided under §91.865 or 91.867.

§ 91.857  
Stage 2 operations outside of the 48 contiguous United States, and authorization for maintenance.

An operator of a Stage 2 airplane that is operating only between points outside the contiguous United States on or after November 5, 1990, shall—

(a) Include in its operations specifications a statement that such airplane may not be used to provide air transportation to or from any airport in the contiguous United States.

(b) Obtain a special flight authorization to operate that airplane into the contiguous United States for the purpose of maintenance. The special flight authorization must include a statement indicating that this regulation is the basis for the authorization.
§ 91.859 Modification to meet Stage 3 noise levels.

For an airplane subject to § 91.801(c) of this subpart and otherwise prohibited from operation to or from an airport in the contiguous United States by § 91.855, any person may apply for a special flight authorization for that airplane to operate in the contiguous United States for the purpose of obtaining modifications to meet Stage 3 noise levels.

[Doc. No. 26433, 56 FR 48658, Sept. 25, 1991]

§ 91.861 Base level.

(a) U.S. Operators. The base level of a U.S. operator is equal to the number of owned or leased Stage 2 airplanes subject to § 91.801(c) of this subpart that were listed on that operator's operations specifications for operations to or from airports in the contiguous United States on any one day selected by the operator during the period January 1, 1990, through July 1, 1991, plus or minus adjustments made pursuant to paragraphs (a) (1) and (2).

(1) The base level of a U.S. operator shall be increased by a number equal to the total of the following—

(i) The number of Stage 2 airplanes returned to service in the United States pursuant to § 91.859(f);

(ii) The number of Stage 2 airplanes purchased pursuant to § 91.859(g); and

(iii) Any U.S. operator base level acquired with a Stage 2 airplane transferred from another person under § 91.863.

(2) The base level of a U.S. operator shall be decreased by the amount of U.S. operator base level transferred with a Stage 2 airplane to another person under § 91.863.

(b) Foreign air carriers. The base level of a foreign air carrier is equal to the number of owned or leased Stage 2 airplanes that were listed on that carrier's U.S. operations specifications on any one day during the period January 1, 1990, through July 1, 1991, plus or minus any adjustments to the base levels made pursuant to paragraphs (b) (1) and (2).

(1) The base level of a foreign air carrier shall be increased by the amount of foreign air carrier base level acquired with a Stage 2 airplane from another person under § 91.863.

(2) The base level of a foreign air carrier shall be decreased by the amount of foreign air carrier base level transferred with a Stage 2 airplane to another person under § 91.863.

(c) New entrants do not have a base level.


§ 91.863 Transfers of Stage 2 airplanes with base level.

(a) Stage 2 airplanes may be transferred with or without the corresponding amount of base level. Base level may not be transferred without the corresponding number of Stage 2 airplanes.

(b) No portion of a U.S. operator's base level established under § 91.861(a) may be used for operations by a foreign air carrier. No portion of a foreign air carrier's base level established under § 91.861(b) may be used for operations by a U.S. operator.

(c) Whenever a transfer of Stage 2 airplanes with base level occurs, the transferring and acquiring parties shall, within 10 days, jointly submit written notification of the transfer to the FAA, Office of Environment and Energy. Such notification shall state:

(1) The names of the transferring and acquiring parties;

(2) The name, address, and telephone number of the individual responsible for submitting the notification on behalf of the transferring and acquiring parties;

(3) The total number of Stage 2 airplanes transferred, listed by airplane type, model, series, and serial number;

(4) The corresponding amount of base level transferred and whether it is U.S. operator or foreign air carrier base level; and

(5) The effective date of the transaction.

(d) If, taken as a whole, a transaction or series of transactions made pursuant to this section does not produce an increase or decrease in the number of Stage 2 airplanes for either the acquiring or transferring operator, such transaction or series of transactions...
§ 91.865 Phased compliance for operators with base level.

Except as provided in paragraph (a) of this section, each operator that operates an airplane under part 91, 121, 125, 129, or 135 of this chapter, regardless of the national registry of the airplane, shall comply with paragraph (b) or (d) of this section at each interim compliance date with regard to its subsonic airplane fleet covered by §91.801(c) of this subpart.

(a) This section does not apply to new entrants covered by §91.867 or to foreign operators not engaged in foreign air commerce.

(b) Each operator that chooses to comply with this paragraph pursuant to any interim compliance requirement shall reduce the number of Stage 2 airplanes it operates that are eligible for operation in the contiguous United States to a maximum of:

(1) After December 31, 1994, 75 percent of the base level held by the operator;
(2) After December 31, 1996, 50 percent of the base level held by the operator;
(3) After December 31, 1998, 25 percent of the base level held by the operator.

(c) Except as provided under §91.871, the number of Stage 2 airplanes that must be reduced at each compliance date contained in paragraph (b) of this section shall be determined by reference to the amount of base level held by the operator on that compliance date, as calculated under §91.861.

(d) Each operator that chooses to comply with this paragraph pursuant to any interim compliance requirement shall operate a fleet that consists of:

(1) After December 31, 1994, not less than 55 percent Stage 3 airplanes;
(2) After December 31, 1996, not less than 65 percent Stage 3 airplanes;
(3) After December 31, 1998, not less than 75 percent Stage 3 airplanes.

(e) Calculations resulting in fractions may be rounded to permit the continued operation of the next whole number of Stage 2 airplanes.

§ 91.867 Phased compliance for new entrants.

(a) New entrant U.S. air carriers.

(1) A new entrant initiating operations under part 121 of this chapter on or before December 31, 1994, may initiate service without regard to the percentage of its fleet composed of Stage 3 airplanes.

(2) After December 31, 1994, at least 25 percent of the fleet of a new entrant must comply with Stage 3 noise levels.

(3) After December 31, 1996, at least 50 percent of the fleet of a new entrant must comply with Stage 3 noise levels.

(4) After December 31, 1998, at least 75 percent of the fleet of a new entrant must comply with Stage 3 noise levels.

(b) New entrant foreign air carriers.

(1) A new entrant foreign air carrier initiating part 129 operations on or before December 31, 1994, may initiate service without regard to the percentage of its fleet composed of Stage 3 airplanes.

(2) After December 31, 1994, at least 25 percent of the fleet on U.S. operations specifications of a new entrant foreign air carrier must comply with Stage 3 noise levels.

(3) After December 31, 1996, at least 50 percent of the fleet on U.S. operations specifications of a new entrant foreign air carrier must comply with Stage 3 noise levels.

(4) After December 31, 1998, at least 75 percent of the fleet on U.S. operations specifications of a new entrant foreign air carrier must comply with Stage 3 noise levels.

(c) Calculations resulting in fractions may be rounded to permit the continued operation of the next whole number of Stage 2 airplanes.

§ 91.869 Carry-forward compliance.

(a) Any operator that exceeds the requirements of paragraph (b) of §91.865 of this part on or before December 31, 1994, or on or before December 31, 1996, may claim a credit that may be applied at a subsequent interim compliance date.
(b) Any operator that eliminates or modifies more Stage 2 airplanes pursuant to §91.865(b) than required as of December 31, 1994, or December 31, 1996, may count the number of additional Stage 2 airplanes reduced as a credit toward—

(1) The number of Stage 2 airplanes it would otherwise be required to reduce following a subsequent interim compliance date specified in §91.865(b); or

(2) The number of Stage 3 airplanes it would otherwise be required to operate in its fleet following a subsequent interim compliance date to meet the percentage requirements specified in §91.865(d).


§ 91.873 Waivers from final compliance.

(a) A U.S. air carrier may apply for a waiver from the prohibition contained in §91.853 for its remaining Stage 2 airplanes, provided that, by July 1, 1999, at least 85 percent of the airplanes used by the carrier to provide service to or from an airport in the contiguous United States will comply with the Stage 3 noise levels.

(b) An application for the waiver described in paragraph (a) of this section must be filed with the Secretary of Transportation no later than January 1, 1999. Such application must include a plan with firm orders for replacing or modifying all airplanes to comply with Stage 3 noise levels at the earliest practicable time.

(c) To be eligible to apply for the waiver under this section, a new entrant U.S. air carrier must initiate service no later than January 1, 1999, and must comply fully with all provisions of this section.

(d) The Secretary may grant a waiver under this section if the Secretary finds that granting such waiver is in the public interest. In making such a finding, the Secretary shall include consideration of the effect of granting such waiver on competition in the air carrier industry and the effect on small community air service, and any other information submitted by the applicant that the Secretary considers relevant.

(e) The term of any waiver granted under this section shall be determined by the circumstances presented in the application, but in no case may the term extend beyond the next interim compliance date.

(f) A summary of any request for a waiver under this section will be published in the FEDERAL REGISTER, and public comment will be invited. Unless the Secretary finds that circumstances require otherwise, the public comment period will be at least 14 days.

[Doc. No. 26433, 56 FR 48660, Sept. 25, 1991]
§ 91.875 Annual progress reports.

(a) Each operator subject to §91.865 or §91.867 of this chapter shall submit an annual report to the FAA, Office of Environment and Energy, on the progress it has made toward complying with the requirements of that section. Such reports shall be submitted no later than 45 days after the end of a calendar year. All progress reports must provide the information through the end of the calendar year, be certified by the operator as true and complete (under penalty of 18 U.S.C. 1001), and include the following information:

(1) The name and address of the operator;

(2) The name, title, and telephone number of the person designated by the operator to be responsible for ensuring the accuracy of the information in the report;

(3) The operator’s progress during the reporting period toward compliance with the requirements of §§91.853, §91.865 or §91.867. For airplanes on U.S. operations specifications, each operator shall identify the airplanes by type, model, series, and serial number.

(i) Each Stage 2 airplane added or removed from operation or U.S. operations specifications (grouped separately by those airplanes acquired with and without base level);

(ii) Each Stage 2 airplane modified to Stage 3 noise levels (identifying the manufacturer and model of noise abatement retrofit equipment);

(iii) Each Stage 3 airplane on U.S. operations specifications as of the last day of the reporting period; and

(iv) For each Stage 2 airplane transferred or acquired, the name and address of the recipient or transferor; and, if base level was transferred or acquired pursuant to Section 91.863 along with the effective date of each base level transaction, and the type of base level transferred or acquired.

(b) Each operator subject to §91.865 or §91.867 of this chapter shall submit an initial progress report covering the period from January 1, 1990, through December 31, 1991, and provide:

(1) For each operator subject to §91.865:

(i) The date used to establish its base level pursuant to §91.861(a); and

(ii) A list of those Stage 2 airplanes (by type, model, series and serial number) in its base level, including adjustments made pursuant to §91.861 after the date its base level was established.

(2) For each U.S. operator:

(i) A plan to meet the compliance schedules in §91.865 or §91.867 and the final compliance date of §91.853, including the schedule for delivery of replacement Stage 3 airplanes or the installation of noise abatement retrofit equipment; and

(ii) A separate list (by type, model, series, and serial number) of those airplanes included in the operator’s base level, pursuant to §91.861(a)(1)(i) and (ii), under the categories “returned” or “purchased,” along with the date each was added to its operations specifications.

(c) Each operator subject to §91.865 or §91.867 of this chapter shall submit subsequent annual progress reports covering the calendar year preceding the report and including any changes in the information provided in paragraphs (a) and (b) of this section; including the use of any carry-forward credits pursuant to §91.869.

(d) An operator may request, in any report, that specific planning data be considered proprietary.

(e) If an operator’s actions during any reporting period cause it to achieve compliance with §91.853, the report should include a statement to that effect. Further progress reports are not required unless there is any change in the information reported pursuant to paragraph (a) of this section.

(f) For each U.S. operator subject to §91.865, progress reports submitted for calendar years 1994, 1996 and 1998, shall also state how the operator achieved...
§ 91.877 Annual reporting of Hawaiian operations.

(a) Each air carrier or foreign air carrier subject to § 91.865 or § 91.867 of this part that conducts operations between the contiguous United States and the State of Hawaii, between the State of Hawaii and any point outside of the contiguous United States, or between the islands of Hawaii in turnaround service, on or since November 5, 1990, shall include in its annual report the information described in paragraph (c) of this section.

(b) Each air carrier or foreign air carrier not subject to § 91.865 or § 91.867 of this part that conducts operations between the contiguous United States and the State of Hawaii, between the State of Hawaii and any point outside of the contiguous United States, or between the islands of Hawaii in turnaround service, on or since November 5, 1990, shall submit an annual report to the FAA, Office of Environment and Energy, on its compliance with the Hawaiian operations provisions of 49 U.S.C. 47528. Such reports shall be submitted no later than 45 days after the end of a calendar year. All progress reports must provide the information through the end of the calendar year, be certified by the operator as true and complete (under penalty of 18 U.S.C. 1001), and include the following information:

1. The name and address of the air carrier or foreign air carrier;
2. The name, title, and telephone number of the person designated by the air carrier or foreign air carrier to be responsible for ensuring the accuracy of the information in the report; and
3. The information specified in paragraph (c) of this section.

(c) The following information must be included in reports filed pursuant to this section—

1. For operations conducted between the contiguous United States and the State of Hawaii—
   a. The number of Stage 2 airplanes used to conduct such operations as of November 5, 1990;
   b. Any change to that number during the calendar year being reported, including the date of such change;
   c. For an air carrier that provided inter-island turnaround service within the state of Hawaii on November 5, 1990, the number reported under paragraph (c)(2)(i) of this section may include all Stage 2 airplanes with a maximum certificated takeoff weight of more than 75,000 pounds that were owned or leased by the air carrier on November 5, 1990, regardless of whether such airplanes were operated by that air carrier or foreign air carrier on that date.

2. For operations conducted between the State of Hawaii and a point outside the contiguous United States—
   a. The number of Stage 2 airplanes used to conduct such operations as of November 5, 1990;
   b. Any change to that number during the calendar year being reported, including the date of such change.

(d) Reports or amended reports for years predating this regulation are required to be filed concurrently with the next annual report.
§ 91.901 [Reserved]

§ 91.903 Policy and procedures.

(a) The Administrator may issue a certificate of waiver authorizing the operation of aircraft in deviation from any rule listed in this subpart if the Administrator finds that the proposed operation can be safely conducted under the terms of that certificate of waiver.

(b) An application for a certificate of waiver under this part is made on a form and in a manner prescribed by the Administrator and may be submitted to any FAA office.

(c) A certificate of waiver is effective as specified in that certificate of waiver.

[Doc. No. 18334, 54 FR 34325, Aug. 18, 1989]

§ 91.905 List of rules subject to waivers.

Sec.
91.107 Use of safety belts.
91.111 Operating near other aircraft.
91.113 Right-of-way rules: Except water operations.
91.115 Right-of-way rules: Water operations.
91.117 Aircraft speed.
91.119 Minimum safe altitudes: General.
91.121 Altimeter settings.
91.123 Compliance with ATC clearances and instructions.
91.125 ATC light signals.
91.126 Operating on or in the vicinity of an airport in Class G airspace.
91.127 Operating on or in the vicinity of an airport in Class E airspace.
91.129 Operations in Class D airspace.
91.130 Operations in Class C airspace.
91.131 Operations in Class B airspace.
91.133 Restricted and prohibited areas.
91.135 Operations in Class A airspace.
91.137 Temporary flight restrictions.
91.141 Flight restrictions in the proximity of the Presidential and other parties.
91.143 Flight limitation in the proximity of space flight operations.
91.153 VFR flight plan: Information required.
91.155 Basic VFR weather minimums.
91.157 Special VFR weather minimums.
91.159 VFR cruising altitude or flight level.
91.169 IFR flight plan: Information required.
91.173 ATC clearance and flight plan required.
91.175 Takeoff and landing under IFR.

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91.177 Minimum altitudes for IFR operations.
91.179 IFR cruising altitude or flight level.
91.181 Course to be flown.
91.183 IFR radio communications.
91.185 IFR operations: Two-way radio communications failure.
91.187 Operation under IFR in controlled airspace: Malfunction reports.
91.209 Aircraft lights.
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91.335 Flight test areas.
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91.313(e) Restricted category civil aircraft: Operating limitations.
91.515 Flight altitude rules.
91.707 Flights between Mexico or Canada and the United States.
91.713 Operation of civil aircraft of Cuban registry.


§§ 91.907–91.999 [Reserved]

APPENDICES TO PART 91

APPENDIX A TO PART 91—CATEGORY II OPERATIONS: MANUAL, INSTRUMENTS, EQUIPMENT, AND MAINTENANCE

1. Category II Manual

(a) Application for approval. An applicant for approval of a Category II manual or an amendment to an approved Category II manual must submit the proposed manual or amendment to the Flight Standards District Office having jurisdiction of the area in which the applicant is located. If the application requests an evaluation program, it must include the following:

(1) The location of the aircraft and the place where the demonstrations are to be conducted; and

(2) The date the demonstrations are to commence (at least 10 days after filing the application).

(b) Contents. Each Category II manual must contain:

(1) The registration number, make, and model of the aircraft to which it applies;

(2) A maintenance program as specified in section 4 of this appendix; and

(3) The procedures and instructions related to recognition of decision height, use of runway visual range information, approach monitoring, the decision region (the region between the middle marker and the decision height), the maximum permissible deviations of the basic ILS indicator within the decision region, a missed approach, use of...
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airborne low approach equipment, minimum altitude for the use of the autopilot, instrument and equipment failure warning systems, instrument failure, and other procedures and instructions, and limitations that may be found necessary by the Administrator.

2. Required Instruments and Equipment

The instruments and equipment listed in this section must be installed in each aircraft operated in a Category II operation. This section does not require duplication of instruments and equipment required by §91.205 or any other provisions of this chapter.

(a) Group I. (1) Two localizer and glide slope receiving systems. Each system must provide a basic ILS display and each side of the instrument panel must have a basic ILS display. However, a single localizer antenna and a single glide slope antenna may be used.

(2) A communications system that does not affect the operation of at least one of the ILS systems.

(3) A marker beacon receiver that provides distinctive aural and visual indications of the outer and the middle markers.

(4) Two gyroscopic pitch and bank indicating systems.

(5) Two gyroscopic direction indicating systems.

(6) Two airspeed indicators.

(7) Two sensitive altimeters adjustable for barometric pressure, each having a placarded correction for altimeter scale error and for the wheel height of the aircraft. After June 26, 1979, two sensitive altimeters adjustable for barometric pressure, having markings at 20-foot intervals and each having a placarded correction for altimeter scale error and for the wheel height of the aircraft.

(8) Two vertical speed indicators.

(9) A flight control guidance system that consists of either an automatic approach coupler or a flight director system. A flight director system must display computed information as steering command in relation to an ILS localizer and, on the same instrument, either computed information as pitch command in relation to an ILS glide slope or basic ILS glide slope information. An automatic approach coupler must provide at least automatic steering in relation to an ILS localizer. The flight control guidance system may be operated from one of the receiving systems required by subparagraph (1) of this paragraph.

(10) For Category II operations with decision heights below 150 feet either a marker beacon receiver providing aural and visual indications of the inner marker or a radio altimeter.

(b) Group II. (1) Warning systems for immediate detection by the pilot of system faults in items (1), (4), (5), and (9) of Group I and, if installed for use in Category III operations, the radio altimeter and autothrottle system.

(2) Dual controls.

(3) An externally vented static pressure system with an alternate static pressure source.

(4) A windshield wiper or equivalent means of providing adequate cockpit visibility for a safe visual transition by either pilot to touchdown and rollout.

(5) A heat source for each airspeed system pitot tube installed or an equivalent means of preventing malfunctioning due to icing of the pitot system.

3. Instruments and Equipment Approval

(a) General. The instruments and equipment required by section 2 of this appendix must be approved as provided in this section before being used in Category II operations. Before presenting an aircraft for approval of the instruments and equipment, it must be shown that since the beginning of the 12th calendar month before the date of submission

(1) The ILS localizer and glide slope equipment were bench checked according to the manufacturer’s instructions and found to meet those standards specified in RTCA Paper 23-63DO-117 dated March 14, 1963, “Standard Adjustment Criteria for Airborne Localizer and Glide Slope Receivers,” which may be obtained from the RTCA Secretariat, 1425 K St., NW., Washington, DC 20005.

(2) The altimeters and the static pressure systems were tested and inspected in accordance with appendix E to part 43 of this chapter.

and

(3) All other instruments and items of equipment specified in section 2(a) of this appendix that are listed in the proposed maintenance program were bench checked and found to meet the manufacturer’s specifications.

(b) Flight control guidance system. All components of the flight control guidance system must be approved as installed by the evaluation program specified in paragraph (e) of this section if they have not been approved for Category III operations under applicable type or supplemental type certification procedures. In addition, subsequent changes to make, model, or design of the components must be approved under this paragraph. Related systems or devices, such as the autothrottle and computed missed approach guidance system, must be approved in the same manner if they are to be used for Category II operations.

(c) Radio altimeter. A radio altimeter must meet the performance criteria of this paragraph for original approval and after each subsequent alteration.

(1) It must display to the flight crew clearly and positively the wheel height of the main landing gear above the terrain.
(2) It must display wheel height above the terrain to an accuracy of plus or minus 5 feet or 5 percent, whichever is greater, under the following conditions:
   (i) Pitch angles of zero to plus or minus 5 degrees about the mean approach attitude.
   (ii) Roll angles of zero to 20 degrees in either direction.
   (iii) Forward velocities from minimum approach speed up to 200 knots.
   (iv) Sink rates from zero to 15 feet per second at altitudes from 100 to 200 feet.
   (3) Over level ground, it must track the actual altitude of the aircraft without significant lag or oscillation.
   (4) With the aircraft at an altitude of 200 feet or less, any abrupt change in terrain representing no more than 10 percent of the aircraft’s altitude must not cause the altimeter to unlock, and indicator response to such changes must not exceed 0.1 seconds and, in addition, if the system unlocks for greater changes, it must reacquire the signal in less than 1 second.
   (5) Systems that contain a push-to-test feature must test the entire system (with or without an antenna) at a simulated altitude of less than 500 feet.
   (6) The system must provide to the flight crew a positive failure warning display any time there is a loss of power or an absence of ground return signals within the designed range of operating altitudes.
   (d) Other instruments and equipment. All other instruments and items of equipment required by §2 of this appendix must be capable of performing as necessary for Category II operations. Approval is also required after each subsequent alteration to these instruments and items of equipment.
   (e) Evaluation program—(1) Application. Approval by evaluation is requested as a part of the application for approval of the Category II manual.
   (2) Demonstrations. Unless otherwise authorized by the Administrator, the evaluation program for each aircraft requires the demonstrations specified in this paragraph. At least 50 ILS approaches must be flown with at least five approaches on each of three different ILS facilities and no more than one half of the total approaches on any one ILS facility. All approaches shall be flown under instrument conditions to a 100-foot decision height and 90 percent of the total approaches made must be successful. A successful approach is one in which—
      (i) At the 100-foot decision height, the indicated airspeed and heading are satisfactory for a normal flare and landing (speed must be plus or minus 5 knots of programmed airspeed, but may not be less than computed threshold speed if auto throttles are used);
      (ii) The aircraft at the 100-foot decision height, is positioned so that the cockpit is within, and tracking so as to remain within, the lateral confines of the runway extended;
      (iii) Deviation from glide slope after leaving the outer marker does not exceed 50 percent of full-scale deflection as displayed on the ILS indicator;
      (iv) No unusual roughness or excessive attitude changes occur after leaving the middle marker; and
      (v) In the case of an aircraft equipped with an approach coupler, the aircraft is sufficiently in trim when the approach coupler is disconnected at the decision height to allow for the continuation of a normal approach and landing.
   (3) Records. During the evaluation program the following information must be maintained by the applicant for the aircraft with respect to each approach and made available to the Administrator upon request:
      (i) Each deficiency in airborne instruments and equipment that prevented the initiation of an approach.
      (ii) The reasons for discontinuing an approach, including the altitude above the runway at which it was discontinued.
      (iii) Speed control at the 100-foot decision height if auto throttles are used.
      (iv) Trim condition of the aircraft upon disconnecting the auto coupler with respect to continuation to flare and landing.
      (v) Position of the aircraft at the middle marker and at the decision height indicated both on a diagram of the basic ILS display and a diagram of the runway extended to the middle marker. Estimated touchdown point must be indicated on the runway diagram.
      (vi) Compatibility of flight director with the auto coupler, if applicable.
      (vii) Quality of overall system performance.
   (4) Evaluation. A final evaluation of the flight control guidance system is made upon successful completion of the demonstrations. If no hazardous tendencies have been displayed or are otherwise known to exist, the system is approved as installed.

4. Maintenance program

(a) Each maintenance program must contain the following:
   (1) A list of each instrument and item of equipment specified in §2 of this appendix that is installed in the aircraft and approved for Category II operations, including the make and model of those specified in §2(a).
   (2) A schedule that provides for the performance of inspections under subparagraph (5) of this paragraph within 3 calendar months after the date of the previous inspection. The inspection must be performed by a person authorized by part 43 of this chapter, except that each alternate inspection may be replaced by a functional flight check. This functional flight check must be performed by a pilot holding a Category II pilot authorization for the type aircraft checked.
(3) A schedule that provides for the performance of bench checks for each listed instrument and item of equipment that is specified in section 2(a) within 12 calendar months after the date of the previous bench check.

(4) A schedule that provides for the performance of a test and inspection of each static pressure system in accordance with appendix E to part 43 of this chapter within 12 calendar months after the date of the previous test and inspection.

(5) The procedures for the performance of the periodic inspections and functional flight tests to determine the ability of each listed instrument and item of equipment specified in section 2(a) of this appendix to perform as approved for Category II operations including a procedure for recording functional flight checks.

(6) A procedure for assuring that the pilot is informed of all defects in listed instruments and items of equipment.

(7) A procedure for assuring that the condition of each listed instrument and item of equipment upon which maintenance is performed is at least equal to its Category II approval condition before it is returned to service for Category II operations.

(8) A procedure for an entry in the maintenance records required by §43.9 of this chapter that shows the date, airport, and reasons for each discontinued Category II operation because of a malfunction of a listed instrument or item of equipment.

(b) Bench check. A bench check required by this section must comply with this paragraph.

(1) It must be performed by a certificated repair station holding one of the following ratings as appropriate to the equipment checked:

(i) An instrument rating.

(ii) A radio rating.

(iii) A rating issued under subpart D of part 145 of this chapter.

(2) It must consist of removal of an instrument or item of equipment and performance of the following:

(i) A visual inspection for cleanliness, impending failure, and the need for lubrication, repair, or replacement of parts;

(ii) Correction of items found by that visual inspection; and

(iii) Calibration to at least the manufacturer’s specifications unless otherwise specified in the approved Category II manual for the aircraft in which the instrument or item of equipment is installed.

(c) Extensions. After the completion of one maintenance cycle of 12 calendar months, a request to extend the period for checks, tests, and inspections is approved if it is shown that the performance of particular equipment justifies the requested extension.

[Doc. No. 18334, 54 FR 34325, Aug. 18, 1989]

APPENDIX B TO PART 91—AUTHORIZATIONS TO EXCEED MACH 1 (§91.817)

Section 1. Application

(a) An applicant for an authorization to exceed Mach 1 must apply in a form and manner prescribed by the Administrator and must comply with this appendix.

(b) In addition, each application for an authorization to exceed Mach 1 covered by section 2(a) of this appendix must contain any information requested by the Administrator necessary to assist him in determining whether the designation of a particular test area or issuance of a particular authorization is a “major Federal action significantly affecting the quality of the human environment” within the meaning of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), and to assist him in complying with that act and with related Executive Orders, guidelines, and orders prior to such action.

(c) In addition, each application for an authorization to exceed Mach 1 covered by section 2(a) of this appendix must contain—

(1) Information showing that operation at a speed greater than Mach 1 is necessary to accomplish one or more of the purposes specified in section 2(a) of this appendix, including a showing that the purpose of the test cannot be safely or properly accomplished by overocean testing;

(2) A description of the test area proposed by the applicant, including an environmental analysis of that area meeting the requirements of paragraph (b) of this section; and

(3) Conditions and limitations that will ensure that no measurable sonic boom overpressure will reach the surface outside of the designated test area.

(d) An application is denied if the Administrator finds that such action is necessary to protect or enhance the environment.

Section 2. Issuance

(a) For a flight in a designated test area, an authorization to exceed Mach 1 may be issued when the Administrator has taken the environmental protective actions specified in section 1(b) of this appendix and the applicant shows one or more of the following:

(1) The flight is necessary to show compliance with airworthiness requirements.

(2) The flight is necessary to determine the sonic boom characteristics of the airplane or to establish means of reducing or eliminating the effects of sonic boom.

(3) The flight is necessary to demonstrate the conditions and limitations under which speeds greater than a true flight Mach number of 1 will not cause a measurable sonic boom overpressure to reach the surface.

(b) For a flight outside of a designated test area, an authorization to exceed Mach 1 may
be issued if the applicant shows conservatively under paragraph (a)(3) of this section that—
   (1) The flight will not cause a measurable sonic boom overpressure to reach the surface when the aircraft is operated under conditions and limitations demonstrated under paragraph (a)(3) of this section; and
   (2) Those conditions and limitations represent all foreseeable operating conditions.

Section 3. Duration

(a) An authorization to exceed Mach 1 is effective until it expires or is surrendered, or until it is terminated by the Administrator. Such an authorization may be amended or suspended by the Administrator at any time if the Administrator finds that such action is necessary to protect the environment. Within 30 days of notification of amendment, the holder of the authorization must request reconsideration or the amendment becomes final. Within 30 days of notification of suspension, the holder of the authorization must request reconsideration or the authorization is automatically terminated. If reconsideration is requested within the 30-day period, the amendment or suspension continues until the holder shows why the authorization should not be amended or terminated. Upon such showing, the Administrator may terminate or amend the authorization if the Administrator finds that such action is necessary to protect the environment, or he may reinstate the authorization without amendment if he finds that termination or amendment is not necessary to protect the environment.

(b) Findings and actions by the Administrator under this section do not affect any certificate issued under title VI of the Federal Aviation Act of 1958.


Section 1

NAT MNPS airspace is that volume of airspace between FL 285 and FL 420 extending between latitude 27 degrees north and the North Pole, bounded in the east by the eastern boundaries of control areas Santa Maria Oceanic, Shanwick Oceanic, and Reykjavik Oceanic and in the west by the western boundary of Gander Oceanic Control Area, the western boundary of Gander Oceanic Control Area, and the western boundary of New York Oceanic Control Area, excluding the areas west of 60 degrees west and south of 38 degrees 30 minutes north.
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Denver, CO (Denver International Airport)
Detroit, MI (Metropolitan Wayne County Airport)
Honolulu, HI (Honolulu International Airport)
Houston, TX (Houston Intercontinental Airport)
Kansas City, KS (Mid-Continent International Airport)
Las Vegas, NV (McCarran International Airport)
Los Angeles, CA (Los Angeles International Airport)
Memphis, TN (Memphis International Airport)
Miami, FL (Miami International Airport)
Minneapolis, MN (Minneapolis-St. Paul International Airport)
Newark, NJ (Newark International Airport)
New York, NY (John F. Kennedy International Airport)
New York, NY (LaGuardia Airport)
New Orleans, LA (New Orleans International Airport-Moisant Field)
Phoenix, AZ (Phoenix Sky Harbor International Airport)
Pittsburgh, PA (Greater Pittsburgh International Airport)
St. Louis, MO (Lambert-St. Louis International Airport)
Salt Lake City, UT (Salt Lake City International Airport)
San Diego, CA (San Diego International Airport)
San Francisco, CA (San Francisco International Airport)
Seattle, WA (Seattle-Tacoma International Airport)
Tampa, FL (Tampa International Airport)
Washington, DC (Washington National Airport)

Section 2. Airports at which the requirements of §91.215(b)(5)(ii) apply.

Section 3. Locations at which fixed-wing Special VFR operations are prohibited. The Special VFR weather minimums of §91.157 do not apply to the following airports:

Atlanta, GA (The William B. Hartsfield Atlanta International Airport)
Baltimore, MD (Baltimore/Washington International Airport)
Boston, MA (General Edward Lawrence Logan International Airport)
Buffalo, NY (Greater Buffalo International Airport)
Chicago, IL (Chicago-O’Hare International Airport)
Cleveland, OH (Cleveland Hopkins International Airport)
Columbus, OH (Port Columbus International Airport)

Covington, KY (Greater Cincinnati International Airport)
Dallas, TX (Dallas/Fort Worth Regional Airport)
Denver, CO (Denver International Airport)
Detroit, MI (Metropolitan Wayne County Airport)
Honolulu, HI (Honolulu International Airport)
Houston, TX (Houston Intercontinental Airport)
Indianapolis, IN (Indianapolis International Airport)
Los Angeles, CA (Los Angeles International Airport)
Louisville, KY (Standiford Field)
Memphis, TN (Memphis International Airport)
Miami, FL (Miami International Airport)
Minneapolis, MN (Minneapolis-St. Paul International Airport)
Newark, NJ (Newark International Airport)
New York, NY (John F. Kennedy International Airport)
New York, NY (LaGuardia Airport)
New Orleans, LA (New Orleans International Airport-Moisant Field)
Philadelphia, PA (Philadelphia International Airport)
Pittsburgh, PA (Greater Pittsburgh International Airport)
Portland, OR (Portland International Airport)
San Francisco, CA (San Francisco International Airport)
Seattle, WA (Seattle-Tacoma International Airport)
St. Louis, MO (Lambert-St. Louis International Airport)
Tampa, FL (Tampa International Airport)

Section 4. Locations at which solo student pilot activity is not permitted. Pursuant to §91.131(b)(2), solo student pilot operations are not permitted at any of the following airports:

Atlanta, GA (The William B. Hartsfield Atlanta International Airport)
Boston, MA (General Edward Lawrence Logan International Airport)
Chicago, IL (Chicago-O’Hare International Airport)
Dallas, TX (Dallas/Fort Worth International Airport)
Los Angeles, CA (Los Angeles International Airport)
Miami, FL (Miami International Airport)
Newark, NJ (Newark International Airport)
New York, NY (John F. Kennedy International Airport)
New York, NY (LaGuardia Airport)
San Francisco, CA (San Francisco International Airport)
Washington, DC (Washington National Airport)
### APPENDIX E TO PART 91—AIRPLANE FLIGHT RECORDER SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Installed system ± minimum accuracy (to recovered data)</th>
<th>Sampling interval (per second)</th>
<th>Resolution ± read out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Time (From Recorded on Prior to Takeoff)</td>
<td>8 hr minimum</td>
<td>±0.125% per hour</td>
<td>1</td>
<td>1 sec.</td>
</tr>
<tr>
<td>Indicated Airspeed</td>
<td>VSO to VD (KIAS)</td>
<td>±5% or ±10 kts., whichever is greater. Resolution 2 kts. below 175 KIAS.</td>
<td>1</td>
<td>1% ^1</td>
</tr>
<tr>
<td>Altitude</td>
<td>−1,000 ft. to max cert alt. of A/C.</td>
<td>±100 to ±700 ft. (see Table 1, TSO C51-a).</td>
<td>11</td>
<td>25 to 150 ft.</td>
</tr>
<tr>
<td>Magnetic Heading</td>
<td>360°</td>
<td>±3°</td>
<td>1</td>
<td>1°</td>
</tr>
<tr>
<td>Vertical Acceleration</td>
<td>−3g to +4g</td>
<td>±0.2g in addition to ±0.3g maximum datum.</td>
<td>4 (or 1 per second where peaks, ref. to 1g are recorded)</td>
<td>0.003g</td>
</tr>
<tr>
<td>Longitudinal Acceleration</td>
<td>±1.0g</td>
<td>±1.5% max. range excluding datum error of ±5%</td>
<td>2</td>
<td>0.01g</td>
</tr>
<tr>
<td>Pitch Attitude</td>
<td>100% of usable</td>
<td>±2°</td>
<td>1</td>
<td>0.8°</td>
</tr>
<tr>
<td>Roll Attitude</td>
<td>±60° or 100% of usable range, whichever is greater.</td>
<td>±2°</td>
<td>1</td>
<td>0.8°</td>
</tr>
<tr>
<td>Stabilizer Trim Position, or.</td>
<td>Full Range</td>
<td>±3% unless higher uniquely required. 1</td>
<td>1</td>
<td>1% ^3</td>
</tr>
<tr>
<td>Pitch Control Position</td>
<td>Full Range</td>
<td>±3% unless higher uniquely required. 1</td>
<td>1</td>
<td>1% ^3</td>
</tr>
<tr>
<td>Engine Power, Each Engine:</td>
<td>Maximum Range</td>
<td>±5%</td>
<td>1</td>
<td>1% ^3</td>
</tr>
<tr>
<td>Fan or N1 Speed or EPR or Cockpit indications Used for Aircraft Certification OR.</td>
<td>Prop. speed and Torque (Sample Once/Sec as Close together as Practicable).</td>
<td>(prop Speed)</td>
<td>1</td>
<td>1% ^3</td>
</tr>
<tr>
<td>Altitude Rate (need depends on altitude resolution).</td>
<td>±8,000 fpm</td>
<td>±10% Resolution 250 fpm below 12,000 ft. indicated.</td>
<td>1</td>
<td>250 fpm, below 12,000</td>
</tr>
<tr>
<td>Angle of Attack (need depends on altitude resolution).</td>
<td>−20° to 40° or 100% of usable range.</td>
<td>±2°</td>
<td>1</td>
<td>0.8% ^3</td>
</tr>
<tr>
<td>On/Off (Discrete).</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1% ^3</td>
</tr>
<tr>
<td>Each discrete position (U, D, T/O, AAP) OR.</td>
<td>Analogs 0–100% range</td>
<td>±3%</td>
<td>1</td>
<td>1% ^3</td>
</tr>
<tr>
<td>Each discrete position (U, D, T/O, AAP) OR.</td>
<td>Analogs 0–100% range</td>
<td>±3%</td>
<td>1</td>
<td>1% ^3</td>
</tr>
<tr>
<td>Thrust Reverser, Each Engine (Discrete).</td>
<td>Stowed or full reverse</td>
<td></td>
<td>1</td>
<td>1% ^3</td>
</tr>
<tr>
<td>Stowed or out</td>
<td></td>
<td></td>
<td>1</td>
<td>1% ^3</td>
</tr>
</tbody>
</table>

^1 Resolution ± read out.
^3 Resolution ± read out.
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<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Installed system 1 minimum accuracy (to recovered data)</th>
<th>Sampling interval (per second)</th>
<th>Resolution 4 read out</th>
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</thead>
<tbody>
<tr>
<td>Autopilot Engaged (Discrete)</td>
<td>Engaged or Disengaged</td>
<td>1.25% per hour</td>
<td>1 sec.</td>
<td>1 sec.</td>
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<tr>
<td></td>
<td></td>
<td>±0.125% per hour</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>±5% or ±10 kts., whichever is greater.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>1,000 ft. to 20,000 ft.</td>
<td>±100 to ±700 ft. (see Table 1, TSO C51-a).</td>
<td>1</td>
<td>25 to 150 ft.</td>
</tr>
<tr>
<td>Magnetic Heading</td>
<td>±30°</td>
<td>±5°</td>
<td>1</td>
<td>1°</td>
</tr>
<tr>
<td>Vertical Acceleration</td>
<td>±3g to ±6g</td>
<td>±0.2g in addition to ±0.3g maximum datum.</td>
<td>4 (or 1 per second where peaks, ref. to 1g are recorded)</td>
<td>0.05g</td>
</tr>
<tr>
<td>Longitudinal Acceleration</td>
<td>±1.0g</td>
<td>±1.5% max. range excluding datum error of ±5%.</td>
<td>2</td>
<td>0.03g</td>
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<tr>
<td>Pitch Attitude</td>
<td>100% of usable range</td>
<td>±2°</td>
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<td>0.8°</td>
</tr>
<tr>
<td>Roll Attitude</td>
<td>±60° or 100% of usable range, whichever is greater.</td>
<td>±2°</td>
<td>1</td>
<td>0.8°</td>
</tr>
<tr>
<td>Altitude Rate</td>
<td>±8,000 fpm</td>
<td>±10% Resolution 250 fpm below 12,000 ft. indicated.</td>
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<td>250 fpm below 12,000.</td>
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<tr>
<td>Engine Power, Each Engine</td>
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<tr>
<td>Main Rotor Speed</td>
<td>Maximum Range</td>
<td>±5%</td>
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<td>1%</td>
</tr>
<tr>
<td>Free or Power Turbine</td>
<td>Maximum Range</td>
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<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Engine Torque</td>
<td>Maximum Range</td>
<td>±5%</td>
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<td>1%</td>
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<tr>
<td>Flight Control Hydraulic Pressure</td>
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<td></td>
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</tr>
<tr>
<td>Primary (Discrete)</td>
<td>High/Low</td>
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<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Secondary—If applicable (Discrete)</td>
<td>High/Low</td>
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<td>1%</td>
</tr>
<tr>
<td>Radio Transmitter</td>
<td>On/Off</td>
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<td>1%</td>
</tr>
<tr>
<td>Keying (Discrete)</td>
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<tr>
<td>Autopilot Engaged (Discrete)</td>
<td>Engaged or Disengaged</td>
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<td>1%</td>
</tr>
<tr>
<td>SAS Status—Engaged (Discrete)</td>
<td>Engaged or Disengaged</td>
<td></td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>SAS Fault Status (Discrete)</td>
<td>Fault/OK</td>
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<td>1%</td>
</tr>
<tr>
<td>Flight Controls</td>
<td>Collective</td>
<td>Full range</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Pedal Position</td>
<td>Full range</td>
<td>±3%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Lat. Cyclic</td>
<td>Full range</td>
<td>±3%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Long. Cyclic</td>
<td>Full range</td>
<td>±3%</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

1 When data sources are aircraft instruments (except altimeters) of acceptable quality to fly the aircraft, the recording system excluding these sensors (but including all other characteristics of the recording system) shall contribute no more than half of the values in this column.

2 If data from the altitude encoding altimeter (100 ft. resolution) is used, then either one of these parameters should also be recorded. If however, altitude is recorded at a minimum resolution of 25 feet, then these two parameters can be omitted.

3 This column applies to aircraft manufactured after October 11, 1991.

[Doc. No. 18334, 54 FR 34327, Aug. 18, 1989]
APPENDIX G TO PART 91—OPERATIONS IN REDUCED VERTICAL SEPARATION MINIMUM (RVSM) AIRSPACE

Section 1. Definitions

Reduced Vertical Separation Minimum (RVSM) Airspace. Within RVSM airspace, air traffic control (ATC) separates aircraft by a minimum of 1,000 feet vertically between flight level (FL) 290 and FL 410 inclusive. RVSM airspace is special qualification airspace; the operator and the aircraft used by the operator must be approved by the Administrator. Air-traffic control notifies operators of RVSM by providing route planning information. Section 8 of this appendix identifies airspace where RVSM may be applied.

RVSM Group Aircraft. Aircraft within a group of aircraft, approved as a group by the Administrator, in which each of the aircraft satisfy each of the following:

(a) The aircraft have been manufactured to the same design, and have been approved under the same type certificate, amended type certificate, or supplemental type certificate.
(b) The static system of each aircraft is installed in a manner and position that is the same as those of the other aircraft in the group. The same static source error correction is incorporated in each aircraft of the group.
(c) The avionics units installed in each aircraft to meet the minimum RVSM equipment requirements of this appendix are:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Installed system installation accuracy (to recover data)</th>
<th>Sampling interval (per second)</th>
<th>Resolution 3 readout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controllable Stabilator Position</td>
<td>Full range</td>
<td>±3%</td>
<td>2</td>
<td>1%2</td>
</tr>
</tbody>
</table>

1 When data sources are aircraft instruments (except altimeters) of acceptable quality to fly the aircraft the recording system excluding these sensors (but including all other characteristics of the recording system) shall contribute no more than half of the values in this column.
2 Per cent of full range.
3 This column applies to aircraft manufactured after October 11, 1991.

(4) The conformity tests used to ensure that aircraft approved with the data package meet the RVSM aircraft requirements.

(c) Altitude-keeping equipment: All aircraft. To approve an aircraft group or a nongroup aircraft, the Administrator must find that the aircraft meets the following requirements:

(i) The aircraft must be equipped with two operational independent altitude measurement systems.

(ii) The aircraft must be equipped with at least one automatic altitude control system that controls the aircraft altitude—

(A) Within a tolerance band of \( \pm 300 \) feet about the selected altitude when the aircraft is operated in straight and level flight under nonturbulent, nongust conditions; or

(B) Within a tolerance band of \( \pm 130 \) feet about the selected altitude when the aircraft is operated in straight and level flight under nonturbulent, nongust conditions for aircraft for which application for type certification was made on or before April 9, 1997.

(3) The aircraft must be equipped with an altitude alert system that signals an alert when the altitude displayed to the flight crew deviates from the selected altitude by more than:

(i) \( \pm 300 \) feet for aircraft for which application for type certification was made on or before April 9, 1997; or

(ii) \( \pm 200 \) feet for aircraft for which application for type certification is made after April 9, 1997.

(d) Altimetry system error containment: Group aircraft for which application for type certification was made after April 9, 1997. To approve group aircraft for which application for type certification is made after April 9, 1997, the Administrator must find that the altimetry system error (ASE) is contained as follows:

(1) At the point in the full RVSM flight envelope where mean ASE reaches its largest absolute value, the absolute value may not exceed 245 feet.

(2) At the point in the basic RVSM flight envelope where mean ASE plus three standard deviations exceeds 120 feet and/or the absolute value of the mean ASE plus three standard deviations exceeds 200 feet; or from operating in areas of the full RVSM flight envelope where the absolute value of the mean ASE exceeds 120 feet and/or the absolute value of the mean ASE plus three standard deviations exceeds 245 feet.

(e) Altimetry system error containment: Group aircraft for which application for type certification is made after April 9, 1997. To approve group aircraft for which application for type certification is made after April 9, 1997, the Administrator must find that the altimetry system error (ASE) is contained as follows:

(1) At the point in the full RVSM flight envelope where mean ASE reaches its largest absolute value, the absolute value may not exceed 80 feet.

(2) At the point in the full RVSM flight envelope where mean ASE plus three standard deviations reaches its largest absolute value, the absolute value may not exceed 200 feet.

(3) The aircraft must be equipped with an altitude alert system that signals an alert when the altitude displayed to the flight crew deviates from the selected altitude by more than:

(i) \( \pm 300 \) feet for aircraft for which application for type certification was made on or before April 9, 1997; or

(ii) \( \pm 200 \) feet for aircraft for which application for type certification is made after April 9, 1997.

(4) The conformity tests used to ensure that aircraft approved with the data package meet the RVSM aircraft requirements.

(f) Altimetry system error containment: Nongroup aircraft. To approve a nongroup aircraft, the Administrator must find that the altimetry system error (ASE) is contained as follows:

(1) For each condition in the basic RVSM flight envelope, the largest combined absolute value for residual static source error plus the avionics error may not exceed 130 feet.

(2) For each condition in the full RVSM flight envelope, the largest combined absolute value for residual static source error plus the avionics error may not exceed 200 feet.

(g) If the Administrator finds that the applicant's aircraft comply with this section, the Administrator notifies the applicant in writing.

Section 3. Operator Authorization

(a) Authority for an operator to conduct flight in airspace where RVSM is applied is issued in operations specifications or a Letter of Authorization, as appropriate. To issue an RVSM authorization, the Administrator must find that the operator's aircraft have been approved in accordance with Section 2 of this appendix and that the operator complies with this section.

(b) An applicant for authorization to operate within RVSM airspace shall apply in a form and manner prescribed by the Administrator. The application must include the following:

(1) An approved RVSM maintenance program outlining procedures to maintain RVSM aircraft in accordance with the requirements of this appendix. Each program must contain the following:
(i) Periodic inspections, functional flight tests, and maintenance and inspection procedures, with acceptable maintenance practices, for ensuring continued compliance with the RVSM aircraft requirements.

(ii) A quality assurance program for ensuring continuing accuracy and reliability of test equipment used for testing aircraft to determine compliance with the RVSM aircraft requirements.

(iii) Procedures for returning noncompliant aircraft to service.

(2) For an applicant who operates under part 121 or 135, initial and recurring pilot training requirements.

(3) Policies and Procedures. An applicant who operates under part 121 or 135 shall submit RVSM policies and procedures that will enable it to conduct RVSM operations safely.

(c) Validation and Demonstration. In a manner prescribed by the Administrator, the operator must provide evidence that:

(1) It is capable to operate and maintain each aircraft or aircraft group for which it applies for approval to operate in RVSM airspace; and

(2) Each pilot has an adequate knowledge of RVSM requirements, policies, and procedures.

Section 4. RVSM Operations

(a) Each person requesting a clearance to operate within RVSM airspace shall correctly annotate the flight plan filed with air traffic control with the status of the operator and aircraft with regard to RVSM approval. Each operator shall verify RVSM applicability for the flight planned route through the appropriate flight planning information sources.

(b) No person may show, on the flight plan filed with air traffic control, an operator or aircraft as approved for RVSM operations, or operate on a route or in an area where RVSM approval is required, unless:

(1) The operator is authorized by the Administrator to perform such operations; and

(2) The aircraft has been approved and complies with the requirements of Section 2 of this appendix.

Section 5. Deviation Authority Approval

The Administrator may authorize an aircraft operator to deviate from the requirements of §91.706 for a specific flight in RVSM airspace if that operator has not been approved in accordance with Section 3 of this appendix, and if:

(2) The operator submits an appropriate request with the air traffic control center controlling the airspace, (request should be made at least 48 hours in advance of the operation unless prevented by exceptional circumstances); and

(b) At the time of filing the flight plan for that flight, ATC determines that the aircraft may be provided appropriate separation and that the flight will not interfere with, or impose a burden on, the operations of operators who have been approved for RVSM operations in accordance with Section 3 of this appendix.

Section 6. Reporting Altitude-Keeping Errors

Each operator shall report to the Administrator each event in which the operator's aircraft has exhibited the following altitude-keeping performance:

(a) Total vertical error of 300 feet or more;

(b) Altimetry system error of 245 feet or more; or

(c) Assigned altitude deviation of 300 feet or more.

Section 7. Removal or Amendment of Authority

The Administrator may amend operations specifications to revoke or restrict an RVSM authorization, or may revoke or restrict an RVSM letter of authorization, if the Administrator determines that the operator is not complying, or is unable to comply, with this appendix or subpart H of this part. Examples of reasons for amendment, revocation, or restriction include, but are not limited to, an operator's:

(a) Committing one or more altitude-keeping errors in RVSM airspace;

(b) Failing to make an effective and timely response to identify and correct an altitude-keeping error; or

(c) Failing to report an altitude-keeping error.

Section 8. Airspace Designation

RVSM may be applied in the following ICAO Flight Information Regions (FIR’s): New York Oceanic, Gander Oceanic, Sondrestrom FIR, Reykjavik Oceanic, Shanwick Oceanic, and Santa Maria Oceanic. RVSM may be effective in the Minimum Navigation Performance Specification (MNPS) airspace with the NAT. The MNPS airspace within the NAT is defined by the volume of airspace FL 285 and FL 420 extending between latitude 27 degrees north and the North Pole, bounded in the east by the eastern boundaries of control areas Reykjavik Oceanic and Santa Maria Oceanic, and in the west by the western boundaries of control areas Shanwick Oceanic, Gander Oceanic, and New York Oceanic, excluding the areas west of 60 degrees west and south of 38 degrees 30 minutes north.

[Doc. No. 28870, 62 FR 17487, Apr. 9, 1997]
PART 93—SPECIAL AIR TRAFFIC RULES AND AIRPORT TRAFFIC PATTERNS

Subpart A—General

§ 93.1 Applicability.

(a) This part prescribes special airport traffic patterns and airport traffic areas. It also prescribes special air...
§ 93.51 Applicability.

This subpart prescribes the Anchorage, Alaska, Airport traffic area and special traffic patterns for that airport and other airports in the vicinity of Anchorage. It prescribes special air traffic rules for that area and those patterns. In addition, it prescribes rules governing the operation of aircraft, in the vicinity of the airports described herein.

§ 93.53 Description of area.

The Anchorage Airport traffic area is designated as that airspace extending upward from the surface to, but not including, 3,000 feet MSL. It is bounded by a line beginning at Point MacKenzie extending westerly along the bank of Knik Arm to a point intersecting an arc of five-statute-mile radius circle centered on the geographical center of Anchorage International Airport; thence counterclockwise along this arc to its intersection with the west bank of Knik Arm; thence southerly along the west bank of Knik Arm to the point of beginning.

Glenn Highway to its intersection with a line one-half statute mile east of and parallel to Bryant Airport runway 16/34; thence northeastward along this line to its intersection with a point which is lat. 61°17′15″ N., long. 149°37′10″ W.; thence west to lat. 61°17′15″ N., long. 149°42′25″ W.; thence northwest to lat. 61°19′12″ N., long. 149°46′36″ W.; thence via an arc of a five-statute-mile radius circle centered on the geographical center of Elmendorf Air Force Base; thence counterclockwise along this arc to its intersection with the west bank of Knik Arm; thence southerly along the west bank of Knik Arm to the point of beginning. However, it does not include the following:

(a) That airspace at and below 600 feet MSL, north of a line beginning at the intersection of Farrell Road and the northeast boundary of the airport traffic area extending westerly along Farrell Road to the east end of Sixmile Lake; thence along a line bearing on the middle of Lake Lorraine to the boundary of the airport traffic area.

(b) That airspace at and below 600 feet MSL, south of a line beginning at the intersection of the new Seward Highway and Dimond Boulevard extending westerly along Dimond Boulevard to Sand Lake Road thence due west to the boundary of the airport traffic area.

(c) [Reserved]

(d) That airspace described as the “Bryant segment” in §93.55(e), when the Bryant control tower is not in operation.

§ 93.55 Subdivision of area.

The Anchorage Airport traffic area is subdivided as follows:

(a) International segment. That area lying within a line beginning at the International Airport control tower extending northwesterly on a direct line toward the substation to the airport traffic area boundary; thence counterclockwise along the airport traffic area boundary to its intersection with International Airport Road; thence westerly along International Airport Road to the point of beginning.
(b) Merrill segment. That area lying within a line beginning at Point MacKenzie extending directly to the mouth of Fish Creek; thence along Fish Creek to Northern Lights Boulevard; thence direct to the intersection of Tudor Road and the new Seward Highway; thence east and north along the airport traffic area boundary to a point directly east of the intersection of Glenn Highway and Boniface Parkway; thence due west on a direct line through that intersection to Ship Creek; thence along Ship Creek to its mouth; thence on a direct line toward the center of Lake Lorraine to the airport traffic area boundary; thence counterclockwise along the airport traffic area boundary to the point of beginning.

(c) Lake Hood segment. That area lying between the International segment and the Merrill segment.

(d) Elmendorf segment. That area lying within a line beginning at the intersection of the airport traffic area boundary with Loop Road, extending southwesterly along Loop Road to Davis Highway; thence due south to the north boundary of the Merrill segment; thence westward along the north boundary of the Merrill segment to the airport traffic area boundary; thence clockwise along the airport traffic area boundary to the point of beginning.

(e) Bryant segment. That area lying east of the Elmendorf segment.

§ 93.63 General rules: Merrill segment.

(a) No person may pilot an aircraft at an altitude between 600 feet MSL and 2,000 feet MSL in that part of the segment lying north of the midchannel of Knik Arm.

(b) Each person piloting an airplane at a speed of more than 105 knots within the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 1,600 feet MSL until maneuvering for a safe landing requires further descent.

(c) Each person piloting an airplane at a speed of 105 knots or less within the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 900 feet MSL until maneuvering for a safe landing requires further descent.

§ 93.61 General rules: Lake Hood segment.

(a) No person may pilot an aircraft at an altitude between 1,200 feet MSL and 2,000 feet MSL in that part of the segment lying north of the midchannel of Knik Arm.

(b) Each person piloting an airplane within the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 600 feet MSL until maneuvering for a safe landing requires further descent.

§ 93.65 General rules: All segments.

(a) Each person piloting an aircraft to, from or on an airport within the airport traffic area shall operate it according to the rules set forth in this section and § 93.59, § 93.61, § 93.63, § 93.65, or § 93.67, as applicable, unless otherwise authorized or required by ATC.

(b) Each person piloting an airplane shall conform to the flow of traffic shown on the appropriate diagram in appendix A.

(c) Each person piloting a helicopter shall operate it in a manner avoiding the flow of airplanes.

(d) Except as provided in § 93.65(d) and (e), each person piloting an aircraft in the airport traffic area shall operate it only within the designated segment containing the airport of landing or takeoff.

(e) Except as provided in § 93.63(d), each person piloting an aircraft shall maintain two-way radio communications with the control tower serving the segment containing the airport of landing or takeoff.

§ 93.59 General rules: International segment.

(a) No person may pilot an aircraft at an altitude between 1,200 feet MSL and 2,000 feet MSL in that part of the segment lying north of the midchannel of Knik Arm.

(b) Each person piloting an airplane at a speed of more than 105 knots within the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 1,600 feet MSL until maneuvering for a safe landing requires further descent.

(c) Each person piloting an airplane at a speed of 105 knots or less within the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 900 feet MSL until maneuvering for a safe landing requires further descent.

§ 93.57 General rules: All segments.

(a) Each person piloting an aircraft to, from or on an airport within the airport traffic area shall operate it according to the rules set forth in this section and § 93.59, § 93.61, § 93.63, § 93.65, or § 93.67, as applicable, unless otherwise authorized or required by ATC.

(b) Each person piloting an airplane shall conform to the flow of traffic shown on the appropriate diagram in appendix A.

(c) Each person piloting a helicopter shall operate it in a manner avoiding the flow of airplanes.

(d) Except as provided in § 93.65(d) and (e), each person piloting an aircraft in the airport traffic area shall operate it only within the designated segment containing the airport of landing or takeoff.

(e) Except as provided in § 93.63(d), each person piloting an aircraft shall maintain two-way radio communications with the control tower serving the segment containing the airport of landing or takeoff.
§ 93.65  General rules: Elmendorf segment.

(a) Each person piloting a turbine-powered airplane within the segment shall operate it at an altitude of at least 1,700 feet MSL until maneuvering for a safe landing requires further descent.

(b) Each person piloting an airplane (other than turbine powered) at a speed of more than 105 knots within the segment shall operate it at an altitude of at least 1,200 feet MSL until maneuvering for a safe landing requires further descent.

(c) Each person piloting an airplane (other than turbine powered) at a speed of 105 knots or less within the segment shall operate it at an altitude of at least 700 feet MSL until maneuvering for a safe landing requires further descent.

(d) A person landing or taking off an aircraft from Elmendorf Airport may operate it at an altitude between 900 feet MSL and 1,700 feet MSL within that part of the Merrill segment lying north of the midchannel of Knik Arm.

(e) A person landing or taking off an aircraft from Elmendorf Airport may operate it at an altitude between 900 feet MSL and 1,700 feet MSL within that part of the Merrill segment lying north of the midchannel of Knik Arm.

§ 93.67  General rules: Bryant segment.

(a) Each person piloting an airplane within the segment shall operate it at an altitude of at least 1,000 feet MSL until maneuvering for a safe landing requires further descent.

(b) Whenever Bryant control tower is not operating, each person piloting an aircraft to or from the Bryant Airport shall conform to the flow of traffic shown on the appropriate diagram in appendix A of this part, and, while in the traffic pattern, shall operate at an altitude of at least 1,000 feet m.s.l. until maneuvering for a safe landing requires further descent.

(c) Each person piloting an aircraft to or from Lake Campbell or Sixmile Lake Airport shall conform to the flow of traffic for the Lake operations that are shown on the appropriate diagram in appendix A.

§ 93.69  Special requirements, Lake Campbell and Sixmile Lake Airports.

Each person piloting an aircraft to or from Lake Campbell or Sixmile Lake Airport shall conform to the flow of traffic for the Lake operations that are shown on the appropriate diagram in appendix A.
Federal Aviation Administration, DOT

§ 93.117

Latitude 30°42'51" N., Longitude 86°38'02" W.; to
Latitude 30°43'18" N., Longitude 86°27'37" W.; to
Latitude 30°37'01" N., Longitude 86°27'37" W.; to
Latitude 30°37'01" N., Longitude 86°25'30" W.; to
Latitude 30°33'01" N., Longitude 86°25'30" W.; to
Latitude 30°33'01" N., Longitude 86°25'00" W.; to
Latitude 30°25'01" N., Longitude 86°25'00" W.; to
Latitude 30°25'01" N., Longitude 86°38'12" W.; to
Latitude 30°29'02" N., Longitude 86°38'02" W.; to
Latitude 30°29'02" N., Longitude 86°38'02" W.; to
Latitude 30°22'01" N., Longitude 86°08'00" W.; to
Latitude 30°19'16" N., Longitude 85°56'00" W.; to
Latitude 30°11'01" N., Longitude 85°56'00" W.; then 3 NM from and parallel to the shoreline to Latitude 30°19'46" N., Longitude 86°23'45" W.; to the beginning.

[Amdt. 93-70, 59 FR 46154, Sept. 6, 1994]

§ 93.83 Aircraft operations.

(a) North-South Corridor. Unless otherwise authorized by ATC (including the Eglin Radar Control Facility), no person may operate an aircraft in flight within the North-South Corridor designated in §93.81(b)(1) unless—

(1) Before operating within the corridor, that person obtains a clearance from the Eglin Radar Control Facility or an appropriate FAA ATC facility; and

(2) That person maintains two-way radio communication with the Eglin Radar Control Facility or an appropriate FAA ATC facility while within the corridor.

(b) East-West Corridor. Except otherwise authorized by ATC (including the Eglin Radar Control Facility), no person may operate an aircraft in flight within the East-West Corridor designated in §93.81(b)(2) unless—

(1) Before operating within the corridor, that person establishes two-way radio communications with Eglin Radar Control Facility or an appropriate FAA ATC facility and receives an ATC advisory concerning operations being conducted therein; and

(2) That person maintains two-way radio communications with the Eglin Radar Control Facility or an appropriate FAA ATC facility while within the corridor.

[Amdt. 93-70, 59 FR 46155, Sept. 6, 1994]

Subparts G—L [Reserved]

Subpart J—Lorain County Regional Airport Traffic Rule

§ 93.117 Applicability.

This subpart prescribes a special air traffic rule for the Lorain County Regional Airport, Lorain County, OH.

[Doc. No. 8669, 33 FR 11749, Aug. 20, 1968]
§ 93.119 Aircraft operations.

Each person piloting an airplane landing at the Lorain County Regional Airport shall enter the traffic pattern north of the airport and shall execute a right traffic pattern for a landing to the southwest or a left traffic pattern for a landing to the northeast. Each person taking off from the airport shall execute a departure turn to the north as soon as practicable after takeoff.

[Doc. No. 8669, 33 FR 11749, Aug. 20, 1968]

Subpart K—High Density Traffic Airports

§ 93.121 Applicability.

This subpart designates high density traffic airports and prescribes air traffic rules for operating aircraft, other than helicopters, to or from those airports.


§ 93.123 High density traffic airports.

(a) Each of the following airports is designated as a high density traffic airport and, except as provided in § 93.129 and paragraph (b) of this section, or unless otherwise authorized by ATC, is limited to the hourly number of allocated IFR operations (takeoffs and landings) that may be reserved for the specified classes of users for that airport:

<table>
<thead>
<tr>
<th>IFR Operations Per Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIRPORT</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Class of user</th>
<th>LaGuardia</th>
<th>New-</th>
<th>O'Hare</th>
<th>Washington National</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air carriers</td>
<td>46</td>
<td>40</td>
<td>120</td>
<td>37</td>
</tr>
<tr>
<td>Commuters</td>
<td>14</td>
<td>10</td>
<td>25</td>
<td>11</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>10</td>
<td>10</td>
<td>12</td>
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(b) The following exceptions apply to the allocations of reservations prescribed in paragraph (a) of this section.

(1) The allocations of reservations among the several classes of users do not apply from 12 midnight to 6 a.m. local time, but the total hourly limitation remains applicable.

(2) [Reserved]

(3) The allocation of 37 IFR reservations per hour for air carriers except commuters at Washington National Airport does not include charter flights, or other nonscheduled flights of scheduled or supplemental air carriers. These flights may be conducted without regard to the limitation of 37 IFR reservations per hour.

(4) The allocation of IFR reservations for air carriers except commuters at LaGuardia, Newark, O'Hare, and Washington National Airports does not include extra sections of scheduled flights. The allocation of IFR reservations for scheduled commuters at Washington National Airport does not include extra sections of scheduled flights. These flights may be conducted without regard to the limitation upon the hourly IFR reservations at those airports.

(5) Any reservation allocated to, but not taken by, air carrier operations (except commuters) is available for a scheduled commuter operation.

[1] Washington National Airport operations are subject to modifications per Section 93.124.
[2] The hour period in effect at O'Hare begins at 6:45 a.m. and continues in 30-minute increments until 9:15 p.m.
[3] Operations at O'Hare International Airport shall not—
(a) Except as provided in paragraph (c) of the note, exceed 62 for air carriers and 13 for commuters and 5 for “other” during any 30-minute period beginning at 6:45 a.m. and continuing every 30 minutes thereafter.
(b) Except as provided in paragraph (c) of the note, exceed more than 120 for air carriers, 25 for commuters, and 10 for “other” in any two consecutive 30-minute periods.
(c) For the hours beginning at 6:45 a.m., 11:45 a.m., 7:45 p.m. and 8:45 p.m., the hourly limitations shall be 105 for air carriers, 40 for commuters and 10 for “other,” and the 30-minute limitations shall be 55 for air carriers, 20 for commuters and 5 for “other.” For the hour beginning at 3:45 p.m., the hourly limitations shall be 115 for air carriers, 30 for commuters and 10 for “other,” and the 30-minute limitations shall be 60 for air carriers, 15 for commuters and 5 for “other.”
[4] Operations at LaGuardia Airport shall not—
(a) Exceed 26 for air carriers, 7 for commuters and 3 for “other” during any 30-minute period.
(b) Exceed 48 for air carriers, 14 for commuters, and 6 for “other” in any two consecutive 30-minute periods.

<table>
<thead>
<tr>
<th>JOHN F. KENNEDY—Continued</th>
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<tbody>
<tr>
<td>Air carriers</td>
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</tr>
<tr>
<td>1900</td>
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<td>1700</td>
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<td>1800</td>
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[John F. Kennedy]
§ 93.129 Additional operations.

(a) IFR. The operator of an aircraft may take off or land the aircraft under IFR at a designated high density traffic airport without regard to the maximum number of operations allocated for that airport if the operation is not a scheduled operation to or from a high density airport and he obtains a departure or arrival reservation, as appropriate, from ATC. The reservation is granted by ATC whenever the aircraft may be accommodated without significant additional delay to the operations allocated for the airport for which the reservation is requested.

(b) VFR. The operator of an aircraft may take off and land the aircraft under VFR at a designated high density traffic airport without regard to the maximum number of operations allocated for that airport if the operation is not a scheduled operation to or from a high density airport and he obtains a departure or arrival reservation, as appropriate, from ATC. The reservation is granted by ATC whenever the aircraft may be accommodated without significant additional delay to the operations allocated for the airport for which the reservation is requested and the ceiling reported at the airport is at least 1,000 feet and the ground visibility reported at the airport is at least 3 miles.

(c) For the purpose of this section a scheduled operation to or from the high density airport is any operation regularly conducted by an air carrier or commuter between a high density airport and another point regularly served by that operator unless the service is conducted pursuant to irregular charter or hiring of aircraft or is a nonpassenger flight.

(d) An aircraft operator must obtain an IFR reservation in accordance with procedures established by the Administrator. For IFR flights to or from a high density airport, reservations for
§ 93.130 Suspension of allocations.

The Administrator may suspend the effectiveness of any allocation prescribed in §93.123 and the reservation requirements prescribed in §93.125 if he finds such action to be consistent with the efficient use of the airspace. Such suspension may be terminated whenever the Administrator determines that such action is necessary for the efficient use of the airspace.


§ 93.133 Exceptions.

Except as provided in §93.130, the provisions of §§93.123 and 93.125 do not apply to—

(a) The Newark Airport, Newark, NJ;
(b) The Kennedy International Airport, New York, NY, except during the hours from 3 p.m. through 7:59 p.m., local time; and
(c) O'Hare International Airport from 9:15 p.m. to 6:44 a.m., local time.

[Doc. No. 24471, 49 FR 8244, Mar. 6, 1984]

§ 93.151 Applicability.

This subpart prescribes special air traffic rules and communications requirements for persons operating aircraft, under VFR—

(a) To, from, or in the vicinity of the Ketchikan International Airport or Ketchikan Harbor.
(b) Within that airspace below 3,000 feet MSL within the lateral boundary of the surface area of the Ketchikan Class E airspace regardless of whether that airspace is in effect.

[Doc. No. 26653, 56 FR 48094, Sept. 23, 1991, as amended by Amdt. 93-64, 58 FR 32839, June 14, 1993]

§ 93.153 Communications.

(a) When the Ketchikan Flight Service Station is in operation, no person may operate an aircraft within the airspace specified in §93.151, or taxi onto the runway at Ketchikan International Airport, unless that person has established two-way radio communications with the Ketchikan Flight Service Station for the purpose of receiving traffic advisories and continues to monitor the advisory frequency at all times while operating within the specified airspace.

(b) When the Ketchikan Flight Service Station is not in operation, no person may operate an aircraft within the airspace specified in §93.151, or taxi onto the runway at Ketchikan International Airport, unless that person continuously monitors and communicates, as appropriate, on the designated common traffic advisory frequency as follows:

(1) For inbound flights. Announces position and intentions when no less than 10 miles from Ketchikan International Airport, and monitors the designated frequency until clear of the movement area on the airport or Ketchikan Harbor.

(2) For departing flights. Announces position and intentions prior to taxiing onto the active runway on the airport or onto the movement area of Ketchikan Harbor and monitors the designated frequency until outside the airspace described in §93.151 and announces position and intentions upon departing that airspace.

(c) Notwithstanding the provisions of paragraphs (a) and (b) of this section, if two-way radio communications failure occurs in flight, a person may operate an aircraft within the airspace specified in §93.151, and land, if weather conditions are at or above basic VFR weather minimums.

[Doc. No. 26653, 56 FR 48094, Sept. 23, 1991]
§ 93.155 Aircraft operations.

(a) When an advisory is received from the Ketchikan Flight Service Station stating that an aircraft is on final approach to the Ketchikan International Airport, no person may taxi onto the runway of that airport until the approaching aircraft has landed and has cleared the runway.

(b) Unless otherwise authorized by ATC, each person operating a large airplane or a turbine engine powered airplane shall—

1. When approaching to land at the Ketchikan International Airport, maintain an altitude of at least 900 feet MSL until within three miles of the airport; and

2. After takeoff from the Ketchikan International Airport, maintain runway heading until reaching an altitude of 900 feet MSL.

Subparts N-R [Reserved]

Subpart S—Allocation of Commuter and Air Carrier IFR Operations at High Density Traffic Airports

Source: Docket No. 24105, 50 FR 52195, Dec. 20, 1985, unless otherwise noted.

§ 93.211 Applicability.

(a) This subpart prescribes rules applicable to the allocation and withdrawal of IFR operational authority (takeoffs and landings) to individual air carriers and commuter operators at the High Density Traffic Airports identified in subpart K of this part except for Newark Airport.

(b) This subpart also prescribes rules concerning the transfer of allocated IFR operational authority and the use of that authority once allocated.

§ 93.213 Definitions and general provisions.

(a) For purposes of this subpart—

(1) New entrant carrier means a commuter operator or air carrier which does not hold a slot at a particular airport and has never sold or given up a slot at that airport after December 16, 1985.

(2) Slot means the operational authority to conduct one IFR landing or take-off operation each day during a specific hour or 30 minute period at one of the High Density Traffic Airports, as specified in subpart K of this part.

(b) Summer season means the period of time from the first Sunday in April until the last Sunday in October.

(c) Winter season means the period of time from the last Sunday in October until the first Sunday in April.

(d) Limited incumbent carrier means an air carrier or commuter operator that holds or operates fewer than 12 air carrier or commuter slots, in any combination, at a particular airport, not including international slots, Essential Air Service Program slots, or slots between the hours of 2200 and 0659 at Washington National Airport or LaGuardia Airport. However, for the purposes of this paragraph (a)(5), the carrier is considered to hold the number of slots at that airport that the carrier has, since December 16, 1985:

(i) Returned to the FAA;

(ii) Had recalled by the FAA under §93.227(a); or

(iii) Transferred to another party other than by trade for one or more slots at the same airport.

(b) The definitions specified in subpart K of this part also apply to this subpart.

(c) For purposes of this subpart, if an air carrier, commuter operator, or other person has more than a 50-percent ownership or control of one or more other air carriers, commuter operators, or other persons, they shall be considered to be a single air carrier, commuter operator, or person. In addition, if a single company has more than a 50-percent ownership or control of two or more air carriers and/or commuter operators or any combination thereof, those air carriers and/or commuter operators shall be considered to be a single operator. A single operator may be considered to be both an air carrier and commuter carrier for purposes of this subpart.

§ 93.215 Initial allocation of slots.

(a) Each air carrier and commuter operator holding a permanent slot on December 16, 1985, as evidenced by the records of the air carrier and commuter operator scheduling committees, shall be allocated those slots subject to withdrawal under the provisions of this subpart. The Chief Counsel of the FAA shall be the final decisionmaker for initial allocation determinations.

(b) Any permanent slot whose use on December 16, 1985 is divided among different operators, by day of the week, or otherwise, as evidenced by records of the scheduling committees, shall be allocated in conformity with those records. The Chief Counsel of the FAA shall be the final decisionmaker for these determinations.

(c) A carrier may permanently designate a slot it holds at Kennedy International Airport as a seasonal slot, to be held by the carrier only during the corresponding season in future years, if it notifies the FAA (at the address specified in § 93.225(e)), in writing, the preceding winter seasons or by October 15 of the preceding year for summer seasons.

(d) Within 30 days after December 16, 1985, each U.S. air carrier and commuter operator must notify the office specified in § 93.221(a)(1), in writing, of those slots used for operations described in § 93.217(a)(1) on December 16, 1985.

(e) Any slot not held by an operator on December 16, 1985 shall be allocated in accordance with the provisions of § 93.217, 93.219 or 93.225 of this subpart.

§ 93.217 Allocation of slots for international operations and applicable limitations.

(a) Any air carrier or commuter operator having the authority to conduct international operations shall be provided slots for those operations subject to the following conditions and the other provisions of this section:

(1) The slot may be used only for a flight segment in which either the takeoff or landing is at a foreign point. Slots may be obtained and used under this section only for operations at Kennedy and O’Hare airports unless otherwise required by bilateral agreement and only for scheduled service unless the requesting carrier qualifies for the slot on the basis of historic seasonal operations, under § 93.217(a)(5).

(2) Slots used for an operation described in paragraph (a)(1) of this section may not be bought, sold, leased, or otherwise transferred, except that such a slot may be traded to another slot-holder on a one-for-one basis for a slot at the same airport in a different hour or half-hour period if the trade is for the purpose of conducting such an operation in a different hour or half-hour period.

(3) Slots used for operations described in paragraph (a)(1) of this section must be returned to the FAA if the slot will not be used for such operations for more than a 2-week period.

(4) Each air carrier or commuter operator having a slot that is used for operations described in paragraph (a)(1) of § 93.217 must notify the office specified in § 93.221(a)(1) by May 15 for operations to be conducted during the following winter season and by October 15 for the following summer season. For operations during the 1986 summer season, requests under this paragraph must have been submitted to the FAA on or before February 1, 1986. Each carrier requesting a slot under this paragraph must submit its entire international schedule at the relevant airport for the
(6) Except as provided in paragraph (a)(10) of this section, additional slots shall be allocated at O'Hare Airport for international scheduled air carrier and commuter operations (beyond those slots allocated under §93.215 and §93.217(a)(5)) if a request is submitted to the office specified in §93.221(a)(1) by May 15 for operations to commence during the following winter season and by October 15 for operations to commence during the following summer season. These slots will be allocated at the time requested unless a slot is available within one hour of the requested time, in which case the unallocated slot will be used to satisfy the request.

(7) If required by bilateral agreement, additional slots shall be allocated at LaGuardia Airport for international scheduled passenger operations within the hour requested.

(8) To the extent vacant slots are available, additional slots during the high-density hours shall be allocated at Kennedy Airport for new international scheduled air carrier and commuter operations (beyond those operations for which slots have been allocated under §§93.215 and 93.217(a)(5)), if a request is submitted to the office specified in §93.221(a)(1) by May 15 for operations to commence during the following winter season and by October 15 for operations to commence during the following summer season. In addition, slots may be withdrawn from domestic operations for operations at Kennedy Airport under this paragraph if required by international obligations.

(9) In determining the hour in which a slot request under §§93.217(a)(6) and 93.217(a)(8) will be granted, the following will be taken into consideration, among other things:

(i) The availability of vacant slot times;

(ii) International obligations;

(iii) Airport terminal capacity, including facilities and personnel of the U.S. Customs Service and the U.S. Immigration and Naturalization Service;

(iv) The extent and regularity of intended use of a slot; and

(v) Schedule constraints of carriers requesting slots.

(10) At O'Hare Airport, a slot will not be allocated under this section to a carrier holding or operating 100 or more permanent slots on the previous May 15 for a winter season or October 15 for a summer season unless:

(i) Allocation of the slot does not result in a total allocation to that carrier under this section that exceeds the number of slots allocated to and scheduled by that carrier under this section on February 23, 1990, and does not exceed by more than 2 the number of slots allocated to and scheduled by that carrier during any half hour of that day, or

(ii) Notwithstanding the number of slots allocated under paragraph (a)(10)(i) of this section, a slot is available for allocation without withdrawal of a permanent slot from any carrier.

(b) If a slot allocated under §93.215 was scheduled for an operation described in paragraph (a)(1) of this section on December 16, 1995, its use shall be subject to the requirements of paragraphs (a)(1) through (a)(4) of this section. The requirements also apply to slots used for international operations at LaGuardia Airport.

(c) If a slot is offered to a carrier in other than the hour requested, the carrier shall have 14 days after the date of the offer to accept the newly offered slot. Acceptance must be in writing and sent to the office specified in §93.221(a)(1) and must repeat the certified statements required by paragraph (e) of this section.

(d) The Office of the Secretary of Transportation reserves the right not to apply the provisions of this section, concerning the allocation of slots, to any foreign air carrier or commuter operator of a country that provides slots to U.S. air carriers and commuter operators on a basis more restrictive than provided by this subpart. Decisions not to apply the provisions of this section will be made by the Office of the Secretary of Transportation.

(e) Each request for slots under this section shall state the airport, days of the week and time of the day of the desired slots and the period of time the slots are to be used. Each request shall identify whether the slot is requested
§ 93.219 Allocation of slots for essential air service operations and applicable limitations.

Whenever the Office of the Secretary of Transportation determines that slots are needed for operations to or from a High Density Traffic Airport under the Department of Transportation's Essential Air Service (EAS) Program, those slots shall be provided to the designated air carrier or commuter operator subject to the following limitations:

(a) Slots obtained under this section may not be bought, sold, leased or otherwise transferred, except that such slots may be traded for other slots on a one-for-one basis at the same airport.

(b) Any slot obtained under this section must be returned to the FAA if it will not be used for EAS purposes for more than a 2-week period. A slot returned under this paragraph may be re-allocated to the operator which returned it upon request to the FAA office specified in §93.221(a)(1) if that slot has not been reallocated to an operator to provide substitute essential air service.

(c) Slots shall be allocated for EAS purposes in a time period within 90 minutes of the time period requested.

(d) The Department will not honor requests for slots for EAS purposes to a point if the requesting carrier has previously traded away or sold slots it had used or obtained for use in providing essential air service to that point.

(e) Slots obtained under Civil Aeronautics Board Order No. 84-11-40 shall be considered to have been obtained under this section.

§ 93.221 Transfer of slots.

(a) Except as otherwise provided in this subpart, effective April 1, 1986, slots may be bought, sold or leased for any consideration and any time period and they may be traded in any combination for slots at the same airport or any other high density traffic airport. Transfers, including leases, shall comply with the following conditions:

(1) Requests for confirmation must be submitted in writing to Slot Administration Office, AGC-230, Office of the Chief Counsel, Federal Aviation Administration, 800 Independence Ave., SW., Washington, DC 20591, in a format to be prescribed by the Administrator. Requests will provide the names of the transferor and recipient; business address and telephone number of the persons representing the transferor and recipient; whether the slot is to be used for an arrival or departure; the date the slot was acquired by the transferor; the section of this subpart under which the slot was allocated to the transferor; whether the slot has been used by the transferor for international or essential air service operations; and whether the slot will be used by the recipient for international or essential air service operations. After withdrawal priorities have been established under §93.223 of this part, the requests must include the slot designations of the transferred slots as described in §93.223(b)(5).

(2) The slot transferred must come from the transferor's then-current FAA-approved base.

(3) Written evidence of each transferor's consent to the transfer must be provided to the FAA.

(4) The recipient of a transferred slot may not use the slot until written confirmation has been received from the FAA.

(5)(i) Until a slot obtained by a new entrant or limited incumbent carrier in a lottery held under §93.225 after June 1, 1991, has been used by the carrier that obtained it for a continuous 24-month period after the lottery in accordance with §93.227(a), that slot may be transferred only by trade for one or more slots at the same airport or to other new entrant or limited incumbent carriers under §93.221(a)(5)(iii). This transfer restriction shall apply to
the same extent to any slot or slots acquired by trading the slot obtained in a lottery. To remove the transfer restriction, documentation of 24 months' continuous use must be submitted to the FAA Office of the Chief Counsel.

(ii) Failure to use a slot acquired by trading a slot obtained in a lottery for a continuous 24-month period after the lottery, shall void all trades involving the lottery slot, which shall be returned to the FAA. All use of the lottery slot shall be counted toward fulfilling the minimum use requirements under §93.227(a) applicable to the slot or slots for which the lottery slot was traded, including subsequent trades.

(iii) Slots obtained by new entrant or limited incumbent carriers in a lottery may be sold, leased, or otherwise transferred to another entrant or limited incumbent carrier after a minimum of 60 days of use by the obtaining carrier. The transfer restrictions of §93.221(a)(5)(i) shall continue to apply to the slot until documentation of 24 months' continuous use has been submitted and the transfer restriction removed.

(6) The Office of the Secretary of Transportation must determine that the transfer will not be injurious to the essential air service program.

(b) A record of each slot transfer shall be kept on file by the office specified in paragraph (a)(1) of this section and will be made available to the public upon request.

(c) Any person may buy or sell slots and any air carrier or commuter may use them. Notwithstanding §93.123, air carrier slots may be used with aircraft of the kind described in §93.123(c)(1) or (c)(2) but commuter slots may only be used with aircraft of the kind described in §93.0123(c)(2).

(d) Air carriers and commuter operators considered to be a single operator under the provisions of §93.213(c) of this subpart but operating under separate names shall report transfers of slots between them.

(e) Notwithstanding §93.123(c)(2) of this part, a commuter slot at O'Hare International Airport may be used with an aircraft described in §93.123(c)(1) of this part on the following conditions:

1. Air carrier aircraft that may be operated under this paragraph are limited to aircraft:
   (i) Having an actual seating configuration of 110 or fewer passengers; and
   (ii) Having a maximum certificated takeoff weight of less than 126,000 pounds.

2. No more than 50 percent of the total number of commuter slots held by a slot holder at O'Hare International Airport may be used with aircraft described in paragraph (e)(1) of this section.

3. An air carrier or commuter operator planning to operate an aircraft described in paragraph (e)(1) of this section in a commuter slot shall notify ATC at least 75 days in advance of the planned start date of such operation. The notice shall include the slot number, proposed time of operation, aircraft type, aircraft series, actual aircraft seating configuration, and planned start date. ATC will approve or disapprove the proposed operation no later than 45 days prior to the planned start date. If an operator does not initiate operation of a commuter slot under this section within 30 days of the planned start date first submitted to the FAA, the ATC approval for that operation will expire. That operator may file a new or revised notice for the same half-hour slot time.

4. An operation may not be conducted under paragraph (e)(1) of this section unless a gate is available for that operation without planned waiting time.

5. For the purposes of this paragraph (e), notice to ATC shall be submitted in writing to: Director, Air Traffic System Management, ATM-1, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591.

§93.223 Slot withdrawal.

(a) Slots do not represent a property right but represent an operating privilege subject to absolute FAA control. Slots may be withdrawn at any time to
§ 93.224 Return of slots.

(a) Whenever a slot is required to be returned under this subpart, the holder must notify the office specified in §93.221(a)(1) in writing of the date after which the slot will not be used.

(b) Slots may be voluntarily returned for use by other operators by notifying the office specified in §93.221(a)(1) in writing.

§ 93.225 Lottery of available slots.

(a) Whenever the FAA determines that sufficient slots have become available for distribution for purposes other than international or essential air service operations, but generally not more than twice a year, they shall be allocated in accordance with the provisions of this section.

(b) A random lottery shall be held to determine the order of slot selection.
§ 93.226 Allocation of slots in low-demand periods.

(a) If there are available slots in the following time periods and there are no pending requests for international or EAS operations at these times, FAA will allocate slots upon request on a first-come, first-served basis, as set forth in this section:

(1) Any period for which a slot is available less than 5 days per week.
(2) Any time period for which a slot is available for less than a full season.

(3) For LaGuardia and Washington National Airports:

(i) 6:00 a.m. - 6:59 a.m.
(ii) 10:00 p.m. - midnight.

(b) Slots will be allocated only to operators with the economic and operating authority and aircraft required to use the slots.

(c) Slot allocation lotteries shall be held on an airport-by-airport basis with separate lotteries for air carrier and commuter operator slots. The slots to be allocated in each lottery will be each unallocated slot not necessary for international or Essential Air Service Program operations, including any slot created by an increase in the operating limits set forth in §93.123(a).

(d) The FAA shall publish a notice in the FEDERAL REGISTER announcing any lottery dates. The notice may include special procedures to be in effect for the lotteries.

(e) Participation in a lottery is open to each U.S. air carrier or commuter operator operating at the airport and providing scheduled passenger service at the airport. Any U.S. carrier that is not operating scheduled service at the airport and has not failed to operate slots obtained in the previous lottery, or slots traded for those obtained by lottery, but wishes to initiate scheduled passenger service before 5:00 a.m. or after 11:00 p.m. on any day, shall be included in the lottery if the operator notifies, in writing, the Slot Administration Office, AGC-230, Office of the Chief Counsel, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591. The notification must be received 15 days prior to the lottery date and state whether there is any common ownership or control of, by, or with any other air carrier or commuter operator as defined in §93.213(c). New entrant and limited incumbent carriers will be permitted to complete their selections before participation by other incumbent carriers is initiated.

(f) At the lottery, each operator must make its selection within 5 minutes after being called or it shall lose its turn. If capacity still remains after each operator has had an opportunity to select slots, the allocation sequence will be repeated in the same order. An operator may select any two slots available at the airport during each sequence, except that new entrant carriers may select four slots, if available, in the first sequence.

(g) To select slots during a slot lottery session, a carrier must have appropriate economic authority for scheduled passenger service under Title IV of the Federal Aviation Act of 1958, as amended (49 U.S.C. App. 1371 et seq.), and must hold FAA operating authority under part 121 or part 135 of this chapter as appropriate for the slots the operator seeks to select.

(h) During the first selection sequence, 25 percent of the slots available but no less than two slots shall be reserved for selection by new entrant carriers. If new entrant carriers do not select all of the slots set aside for new entrant carriers, limited incumbent carriers may select the remaining slots. If every participating new entrant carrier and limited incumbent carrier has ceased selection of available slots or has obtained 12 slots at that airport, other incumbent carriers may participate in selecting the remaining slots; however, slots selected by non-limited incumbent carriers will be allocated only until the date of the next lottery.

(i) Slots obtained under this section shall retain their withdrawal priority as established under §93.223. If the slot is newly created, a withdrawal priority shall be assigned. That priority number shall be higher than any other slot assigned a withdrawal number previously.

§ 93.227 Slot use and loss.

(a) Except as provided in paragraphs (b), (c), (d), (g), and (l) of this section, any slot not utilized 80 percent of the time over a 2-month period shall be recalled by the FAA.

(b) Paragraph (a) of this section does not apply to slots obtained under § 93.225 of this part during:

(1) The first 90 days after they are allocated to a new entrant carrier; or

(2) The first 60 days after they are allocated to a limited incumbent or other incumbent carrier.

(c) Paragraph (a) of this section does not apply to slots of an operator forced by a strike to cease operations using those slots.

(d) In the case of a carrier that files for protection under the Federal bankruptcy laws and has not received a Notice of Withdrawal from the FAA for the subject slot or slots, paragraph (a) of this section does not apply:

(1) During a period after the initial petition in bankruptcy, to any slot held or operated by that carrier, for:

(i) 60 days after the carrier files the initial petition in bankruptcy; and

(ii) 30 days after the carrier, in anticipation of transferring slots, submits information to a Federal government agency in connection with a statutory antitrust, economic impact, or similar review of the transfer, provided that the information is submitted more than 30 days after filing the initial petition in bankruptcy, and provided further that any slot to be transferred has not become subject to withdrawal under any other provision of this § 93.227; and

(2) During a period after a carrier ceases operations at an airport, to any slot held or operated by that carrier at that airport, for:

(i) 30 days after the carrier ceases operations at that airport, provided that the slot has not become subject to withdrawal under any other provision of this § 93.227; and

(ii) 30 days after the parties to a proposed transfer of any such slot comply with requests for additional information by a Federal government agency in connection with an antitrust, economic impact, or similar investigation of the transfer, provided that—

(A) The original notice of the transfer is filed with the Federal agency within 30 days after the carrier ceases operation at the airport;

(B) The request for additional information is made within 10 days of the filing of the notice by the carrier;

(C) The carrier submits the additional information to the Federal agency within 15 days of the request by such agency; and

(D) Any slot to be transferred has not become subject to withdrawal under any other provision of this § 93.227.

(e) Persons having slots withdrawn pursuant to paragraph (a) of this section must cease all use of those slots upon receipt of notice from the FAA.

(f) Persons holding slots but not using them pursuant to the provisions of paragraphs (b), (c), and (d) may lease those slots for use by others. A slot obtained in a lottery may not be leased after the expiration of the applicable time period specified in paragraph (b) of this section unless it has been operated for a 2-month period at least 65 percent of the time by the operator which obtained it in the lottery.

(g) This section does not apply to slots used for the operations described in § 93.217(a)(1) except that a U.S. air carrier or commuter operator required to file a report under paragraph (i) of this section shall include all slots operated at the airport, including slots described in § 93.217(a)(1).

(h) Within 30 days after an operator files for protection under the Federal bankruptcy laws, the FAA shall recall any slots of that operator, if—(1) the slots were formerly used for essential air service and (2) the Office of the Secretary of Transportation determines...
§ 93.301 Applicability.

This subpart prescribes special operating rules for all persons operating aircraft in the following airspace, designated as the Grand Canyon National Park Special Flight Rules Area: That airspace extending from the surface up to but not including 18,000 feet MSL within an area bounded by a line beginning at Lat. 35°55′12″ N., Long. 112°04′05″ W.; east to Lat. 35°55′38″ N., Long. 111°42′12″ W.; north to Lat. 36°16′47″ N., Long. 111°42′17″ W.; to Lat. 36°24′40″ N., Long. 111°47′45″ W.; to Lat. 36°52′23″ N., Long. 111°33′10″ W.; west-northwest to Lat. 36°53′37″ N., Long. 111°38′29″ W.; southwest to Lat. 36°35′02″ N., Long. 111°53′28″ W.; to Lat. 36°21′30″ N., Long. 112°00′03″ W.; west-northwest to Lat. 36°30′30″ N., Long. 112°35′59″ W.; southwest to Lat. 36°24′46″ N., Long. 112°51′10″ W.; thence west along the boundary of Grand Canyon National Park (GCNP) to Lat. 36°14′08″ N., Long. 113°10′07″ W.; west-southwest to Lat. 36°09′50″ N.,
§ 93.303 Definitions.

For the purposes of this subpart:

(a) Flight Standards District Office means the FAA Flight Standards District Office with jurisdiction for the geographical area containing the Grand Canyon.

(b) Park means Grand Canyon National Park.

(c) Special Flight Rules Area means the Grand Canyon National Park Special Flight Rules Area.

§ 93.305 Flight-free zones and flight corridors.

Except in an emergency or if otherwise necessary for safety of flight, or unless otherwise authorized by the Flight Standards District Office for a purpose listed in §93.309, no person may operate an aircraft in the Special Flight Rules Area within the following flight-free zones:

(a) Desert View Flight-free Zone. That airspace extending from the surface up to but not including 14,500 feet MSL within an area bounded by a line beginning at Lat. 35°59'58" N., Long. 111°52'47" W.; thence east and north along the GCNP boundary to Lat. 36°14'05" N., Long. 111°48'34" W.; southwest to Lat. 36°12'06" N., Long. 111°51'14" W.; to the point of origin; but not including the airspace at and above 10,500 feet MSL within 1 nautical mile of the western boundary of the zone. The corridor to the west, between the Desert View and Toroweap/Shinumo Flight-free Zones, is designated the "Zuni Point Corridor." This corridor is 2 nautical miles wide for commercial sightseeing flights and 4 nautical miles wide for transient and general aviation operations.

(b) Bright Angel Flight-free Zone. That airspace extending from the surface up to but not including 14,500 feet MSL within an area bounded by a line beginning at Lat. 35°58'09" N., Long. 113°50'16" W.; to Lat. 36°02'16" N., Long. 113°48'08" W.; thence southeast along the boundary of GCNP to Lat. 35°58'09" N., Long. 113°45'04" W.; southwest to Lat. 35°54'48" N., Long. 113°50'24" W.; southeast to Lat. 35°41'01" N., Long. 113°35'27" W.; thence clockwise via the 4.2-nautical mile radius of the Peach Springs VORTAC to Lat. 35°28'53" N., Long. 113°27'49" W.; northeast to Lat. 35°42'58" N., Long. 113°10'57" W.; north to Lat. 35°57'51" N., Long. 113°11'06" W.; east to Lat. 35°57'44" N., Long. 112°14'04" W.; thence clockwise via the 4.3-nautical mile radius of the Grand Canyon National Park Airport reference point (Lat. 35°57'08" N., Long. 112°08'49" W.) to the point of origin.


§ 93.303 Definitions.

For the purposes of this subpart:

(a) Flight Standards District Office means the FAA Flight Standards District Office with jurisdiction for the geographical area containing the Grand Canyon.

(b) Park means Grand Canyon National Park.

(c) Special Flight Rules Area means the Grand Canyon National Park Special Flight Rules Area.
§ 93.307 Minimum flight altitudes.

Except in an emergency, or if otherwise necessary for safety of flight, or unless otherwise authorized by the Flight Standards District Office for a purpose listed in 93.309, no person may operate an aircraft in the Special Flight Rules Area at an altitude lower than the following:

(a) Minimum sector altitudes—(1) Commercial sightseeing flights—(i) Marble Canyon Sector. Lees Ferry to Boundary Ridge: 6,000 feet MSL.

(ii) Supai Sector. Boundary Ridge to Supai Point: 7,500 feet MSL.

(iii) Diamond Creek Sector. Supai Point to Diamond Creek: 6,500 feet MSL.

(iv) Pearce Ferry Sector. Diamond Creek to the Grand Wash Cliffs: 5,000 feet MSL.

(b) Minimum corridor altitudes—(1) Commercial sightseeing flights—(i) Zuni Point Corridors. 7,500 feet MSL.

(ii) Dragon Corridor. 7,500 feet MSL.

(iii) Tuckup Corridor. 10,500 feet MSL.


§ 93.309 General operating procedures.

Except in an emergency, no person may operate an aircraft in the Special Flight Rules Area unless the operation is conducted in accordance with the following procedures. (Note: The following procedures do not relieve the pilot from see-and-avoid responsibility or compliance with the minimum safe altitude requirements specified in § 93.119 of this chapter):

(a) Unless necessary to maintain a safe distance from other aircraft or terrain, remain clear of the flight-free zones described in § 93.305;

(b) Unless necessary to maintain a safe distance from other aircraft or terrain, proceed through the Zuni Point, Dragon, and Tuckup Flight Corridors.
§ 93.311 Minimum terrain clearance.

Except in an emergency, when necessary for takeoff or landing, or unless otherwise authorized by the Flight Standards District Office for a purpose described in § 93.305 at the following altitudes unless otherwise authorized in writing by the Flight Standards District Office:

(1) Northbound. 11,500 or 13,500 feet MSL.
(2) Southbound. 10,500 or 12,500 feet MSL.

(c) For operation in the flight-free zones described in § 93.305, or flight below the altitudes listed in § 93.307, is authorized in writing by the Flight Standards District Office and is conducted in accordance with the conditions contained in that authorization. Normally authorization will be granted for operation in the areas described in § 93.305 or below the altitudes listed in § 93.307 only for operations of aircraft necessary for law enforcement, firefighting, emergency medical treatment/evacuation of persons in the vicinity of the Park; for support of Park maintenance or activities; or for aerial access to and maintenance of other property located within the Special Flight Rules Area. Authorization may be issued on a continuing basis;

(d) Is conducted in accordance with a specific authorization to operate in that airspace incorporated in the operator's operations specifications and approved by the Flight Standards District Office in accordance with the provisions of this subpart;

(e) Is a search and rescue mission directed by the U.S. Air Force Rescue Coordination Center;

(f) Is conducted within 3 nautical miles of Grand Canyon Bar Ten Airstrip, Pearce Ferry Airstrip, Cliff Dwellers Airstrip, or Marble Canyon Airstrip at an altitude less than 3,000 feet above airport elevation, for the purpose of landing at or taking off from that facility; or

(g) Is conducted under an instrument flight rules (IFR) clearance and the pilot is acting in accordance with ATC instructions. An IFR flight plan may not be filed on a route or at an altitude that would require operation in an area described in § 93.305.

§ 93.313 Communications.

Except when in contact with the Grand Canyon National Park Airport Traffic Control Tower during arrival or departure or on a search and rescue mission directed by the U.S. Air Force Rescue Coordination Center, no person may operate an aircraft in the Special Flight Rules Area unless he monitors the appropriate frequency continuously while in that airspace.

§ 93.315 Commercial sightseeing flight operations.

(a) Non-stop sightseeing flights that begin and end at the same airport, are conducted within a 25-statute-mile radius of that airport, and operate in or through the Special Flight Rules Area during any portion of the flight are governed by the provisions of part 119, SFAR 38-2 of parts 121 and 135 of this chapter, part 121, and part 135 of this chapter, as applicable.

(b) No person holding or required to hold an air carrier certificate or an operating certificate under SFAR No. 38-2 or part 119 of this chapter may operate an aircraft having a passenger-seat configuration of 30 or fewer seats, excluding each crewmember seat, and a payload capacity of 7,500 or less pounds, in the Special Flight Rules Area except as authorized by the applicable operations specifications.

§ 93.316 Commercial sightseeing limitations.

(a) Unless otherwise authorized by the Flight Standards District Office, no person shall conduct commercial sightseeing operations in the Dragon and Zuni Corridors during the following fixed flight-free periods:

(1) Summer season (May 1-September 30)—6 p.m. to 8 a.m. daily; and
(2) Winter season (October 1-April 30)—5 p.m. to 9 a.m. daily.

(b) No person may operate more commercial sightseeing aircraft in the Special Flight Rules Area than the highest number of aircraft that appeared on the certificate holder's operations
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§ 93.317 Commercial sightseeing flight reporting requirements.

Each certificate holder conducting commercial sightseeing flights within the Special Flight Rules Area shall submit in writing, within 30 days after April 30, August 31, and December 31, of each year, to the Flight Standards District Office the following information for each operation within the Special Flight Rules Area for the prior 4-month period:

(a) Identification number (registration number) of each aircraft;
(b) Departure airport;
(c) Departure date and time; and
(d) Route(s) flown.

These reporting requirements continue through May 31, 2002.
APPENDIX A

1. ANCHORAGE AIRPORT TRAFFIC AREA: TRAFFIC PATTERNS
PART 95—IFR ALTITUDES

Subpart A—General

Sec. 95.1 Applicability.
95.3 Symbols.

Subpart B—Designated Mountainous Areas

95.11 General.
95.13 Eastern United States Mountainous Area.
95.15 Western United States Mountainous Area.
§ 95.1 Applicability.

(a) This part prescribes altitudes governing the operation of aircraft under IFR on Federal airways, jet routes, area navigation low or high routes, or other direct routes for which a MEA is designated in this part. In addition, it designates mountainous areas and changeover points.

(b) The MAA is the highest altitude on a Federal airway, jet route, area navigation low or high route, or other direct route for which a MEA is designated in this part at which adequate reception of navigation aid signals is assured.

(c) The MCA applies to the operation of an aircraft proceeding to a higher minimum en route altitude when crossing specified radio fixes.

(d) The MEA prescribed for a Federal airway or segment thereof, area navigation low or high route, or other direct route, applies to the entire width of the airway, segment or route between the radio fixes defining the airway, segment or route. An MEA prescribed for an off-airway route or route segment applies to the airspace five statute miles on each side of a direct course between radio fixes defining that route or route segment.

(e) The MOCA applies to the operation of an aircraft within 25 statute miles of the VOR station concerned. The MOCA assures obstruction clearance between the fixes specified but adequate reception of navigational signals is assured only within 25 miles of the VOR station concerned.

(f) The MRA is the lowest altitude at which the intersection can be determined.

(g) The COP applies to operation of an aircraft along a Federal airway, jet route, area navigation low or high route, or other direct route for which a MEA is designated in this part. It is the most appropriate point for transfer of the airborne navigation reference between the facility or way point abate the aircraft and the next appropriate facility or way point along the Federal airway, jet route, area navigation low or high route, or other direct route that provides:

1. Continuous reception between facilities; and
2. A common source of azimuth guidance for all aircraft operating along the same segment of the Federal airway, jet route, area navigation low or high route, or other direct route.


§ 95.3 Symbols.

For the purposes of this part—

(a) COP means changeover point.

(b) L means compass locator;

(c) LF/MF means low frequency, medium frequency;

(d) LFR means low frequency radio range;

(e) VOR-E means VOR and distance measuring equipment; and

(f) Z means a very high frequency location marker.


Subpart B—Designated Mountainous Areas

§ 95.11 General.

The areas described in this subpart are designated mountainous areas.

[Doc. No. 1580, 28 FR 6718, June 29, 1963]

§ 95.13 Eastern United States Mountainous Area.

All of the following area excluding those portions specified in the exceptions.

(a) Area.
§ 95.15 Western United States Mountainous Area.

All of the following area excluding those portions specified in the exceptions:

(a) Area. From the Pacific coastline of the United States, eastward along the Canadian and Mexican borders, to the following coordinates:

Beginning at latitude 47°10' N., longitude 67°55' W.; thence west and south along the Canadian Border to latitude 45°00' N., longitude 74°15' W.; thence to latitude 44°20' N., longitude 79°37' W.; thence to latitude 43°06' N., longitude 75°30' W.; thence to latitude 42°57' N., longitude 77°30' W.; thence to latitude 42°52' N., longitude 78°42' W.; thence to latitude 42°26' N., longitude 79°13' W.; thence to latitude 42°05' N., longitude 80°00' W.; thence to latitude 40°50' N., longitude 80°00' W.; thence to latitude 40°26' N., longitude 79°54' W.; thence to latitude 39°25' N., longitude 81°46' W.; thence to latitude 38°00' N., longitude 88°00' W.; thence to latitude 33°37' N., longitude 88°45' W.; thence to latitude 32°30' N., longitude 86°25' W.; thence to latitude 33°22' N., longitude 85°00' W.; thence to latitude 36°35' N., longitude 79°20' W.; thence to latitude 40°11' N., longitude 76°24' W.; thence to latitude 41°24' N., longitude 74°30' W.; thence to latitude 41°43' N., longitude 72°40' W.; thence to latitude 42°13' N., longitude 72°44' W.; thence to latitude 43°12' N., longitude 71°30' W.; thence to latitude 43°45' N., longitude 70°30' W.; thence to latitude 45°00' N., longitude 69°30' W.; thence to latitude 47°10' N., longitude 67°55' W., point of beginning.

(b) Exceptions. The area bounded by the following coordinates:

Beginning at latitude 45°00' N., longitude 73°26' W.; thence to latitude 44°32' N., longitude 73°00' W.; thence to latitude 43°51' N., longitude 73°41' W.; thence to latitude 41°38' N., longitude 73°46' W.; thence to latitude 41°16' N., longitude 73°50' W.; thence to latitude 41°17' N., longitude 74°00' W.; thence to latitude 41°25' N., longitude 73°58' W.; thence to latitude 41°26' N., longitude 74°01' W.; thence to latitude 41°37' N., longitude 73°58' W.; thence to latitude 42°41' N., longitude 73°55' W.; thence to latitude 43°02' N., longitude 76°15' W.; thence to latitude 43°17' N., longitude 75°21' W.; thence to latitude 42°59' N., longitude 74°43' W.; thence to latitude 42°52' N., longitude 73°53' W.; thence to latitude 44°30' N., longitude 73°18' W.; thence to latitude 45°00' N., longitude 73°38' W.; thence to latitude 45°00' N., longitude 73°20' W., point of beginning.

(2) Beginning at latitude 61°50' N., longitude 151°12' W.; thence to latitude 61°24' N., longitude 150°28' W.; thence to latitude 59°40' N., longitude 152°23' W.; thence to latitude 59°33' N., longitude 151°28' W.; thence to latitude 60°31' N., longitude 150°43' W.; thence to latitude 61°13' N., longitude 149°30' W.; thence to latitude 61°37' N., longitude 149°15' W.; thence to latitude 61°44' N., longitude 149°48' W.; thence to latitude 62°23' N., longitude 149°54' W.; thence to latitude 62°14' W.; thence to latitude 61°50' N., longitude 151°12' W., point of beginning.

(3) Beginning at latitude 58°56' N., longitude 156°38' W.; thence to latitude 58°47' N., longitude 156°27' W.; thence to latitude 56°43'
§ 95.19

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The following islands of the State of Hawaii: Kauai, Oahu, Molokai, Lanai, Kehoolawe, Maui, and Hawaii.

N., longitude 158°39′ W.; thence to latitude 56°50′ N., longitude 159°00′ W.; thence along the shore line to latitude 58°56′ N., longitude 159°38′ W., point of beginning.

(4) Beginning at latitude 61°47′ N., longitude 159°40′ W.; thence to latitude 61°34′ N., longitude 159°15′ W.; thence to latitude 60°32′ N., longitude 161°42′ W.; thence to latitude 60°45′ N., longitude 162°06′ W.; thence to latitude 61°47′ N., longitude 159°40′ W., point of beginning.

(5) Beginning at a point where latitude 39°30′ intersects the northwest coast of Alaska and eastward along the 69°30′ parallel to the 150° Meridian; thence northward along the 150° Meridian to 69°50′ north latitude; thence eastward along the 69°50′ parallel to a point where 69°50′ intersects the northeast coastline of Alaska; thence westward along the northern coastline of Alaska to the intersection of latitude 69°30′, point of beginning.

§ 95.21 Puerto Rico Mountainous Area.

The area bounded by the following coordinates:

Beginning at latitude 18°22' N., longitude 66°58' W., thence to latitude 18°19' N., longitude 66°06' W.; thence to latitude 18°20' N., longitude 65°50' W.; thence to latitude 18°20' N., longitude 65°42' W.; thence to latitude 18°03' N., longitude 66°52' W.; thence to latitude 18°02' N., longitude 66°51' W.; thence to latitude 17°59' N., longitude 65°55' W.; thence to latitude 18°05' N., longitude 66°57' W.; thence to latitude 18°11' N., longitude 67°07' W.; thence to latitude 18°22' N., longitude 66°58' W.; the point of beginning.
Designated Mountainous Area

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Subpart C—En Route IFR Altitudes Over Particular Routes and Intersections

EDITORIAL NOTE: The prescribed IFR altitudes for flights over particular routes and intersections in this subpart were formerly carried as §§610.11 through 610.6887 of this title and were transferred to part 95 as §§95.41 through 95.6887, respectively, but are not carried in the Code of Federal Regulations. For F EDERAL REGISTER citations affecting these routes, see the List of C F R Sections Affected in the Finding Aids section of this volume.

§ 95.31 General.

This subpart prescribes IFR altitudes for flights along particular routes or route segments and over additional intersections not listed as a part of a route or route segment.

[Doc. No. 1580, 28 FR 6719, June 29, 1963]

Subpart D—Changeover Points

EDITORIAL NOTE: The prescribed COP’s for Federal airways, jet routes, or other direct routes for which an MEA is designated in this part are not carried in the Code of Federal Regulations. For Federal Register citations affecting these routes see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 95.8001 General.

This subpart prescribes COP’s for Federal airways, jet routes, area navigation routes, or other direct routes for which an MEA is designated in this part. Unless otherwise specified the COP is midway between the navigation facilities or way points for straight route segments, or at the intersection of radials or courses forming a dogleg in the case of dogleg route segments.

[Doc. No. 10580, 35 FR 14610, Sept. 18, 1970]

PART 97—STANDARD INSTRUMENT APPROACH PROCEDURES

Subpart A—General

Sec. 97.1 Applicability.
97.3 Symbols and terms used in procedures.
97.5 Bearings; courses; headings; radials; miles.
§ 97.3 14 CFR Ch. I (1–1–99 Edition)

(2) Initial approach altitude means the altitude (or altitudes, in High Altitude Procedures) prescribed for the initial approach segment of an instrument approach.

(3) Intermediate approach is the segment between the intermediate fix or point and the final approach fix.

(4) Final approach is the segment between the final approach fix or point and the runway, airport, or missed-approach point.

(5) Missed approach is the segment between the missed-approach point, or point of arrival at decision height, and the missed-approach fix at the prescribed altitude.

(d) C means circling landing minimum, a statement of ceiling and visibility values, or minimum descent altitude and visibility, required for the circle-to-land maneuver.

(d–1) Copter procedures means helicopter procedures, with applicable minimums as prescribed in §97.35 of this part. Helicopters may also use other procedures prescribed in Subpart C of this part and may use the Category A minimum descent altitude (MDA) or decision height (DH). The required visibility minimum may be reduced to one-half the published visibility minimum for Category A aircraft, but in no case may it be reduced to less than one-quarter mile or 1,200 feet RVR.

(e) Ceiling minimum means the minimum ceiling, expressed in feet above the surface of the airport, required for takeoff or required for designating an airport as an alternate airport.

(f) D means day.

(g) FAF means final approach fix.

(h) HAA means height above airport.

(h–1) HAL means height above a designated helicopter landing area used for helicopter instrument approach procedures.

(i) HAT means height above touchdown.

(j) MAP means missed approach point.

(k) More than 65 knots means an aircraft that has a stalling speed of more than 65 knots (as established in an approved flight manual) at maximum certified landing weight with full flaps, landing gear extended, and power off.

(l) MSA means minimum safe altitude, an emergency altitude expressed in feet above mean sea level, which provides 1,000 feet clearance over all obstructions in that sector within 25 miles of the facility on which the procedure is based (LOM in ILS procedures).

(m) N means night.

(n) NA means not authorized.

(o) NOPT means no procedure turn required (altitude prescribed applies only if procedure turn is not executed).

(o–1) Point in space approach means a helicopter instrument approach procedure to a missed approach point that is more than 2,600 feet from an associated helicopter landing area.

(p) Procedure turn means the maneuver prescribed when it is necessary to reverse direction to establish the aircraft on an intermediate or final approach course. The outbound course, direction of turn, distance within which the turn must be completed, and minimum altitude are specified in the procedure. However, the point at which the turn may be commenced, and the type and rate of turn, is left to the discretion of the pilot.

(q) RA means radio altimeter setting height.

(r) RVV means runway visibility value.

(s) S means straight-in landing minimum, a statement of ceiling and visibility, minimum descent altitude and visibility, or decision height and visibility, required for a straight-in landing on a specified runway. The number appearing with the S indicates the runway to which the minimum applies. If a straight-in minimum is not prescribed in the procedure, the circling minimum specified applies to a straight-in landing.

(t) Shuttle means a shuttle, or race-track-type, pattern with 2-minute legs prescribed in lieu of a procedure turn.

(u) 65 knots or less means an aircraft that has a stalling speed of 65 knots or less (as established in an approved flight manual) at maximum certified landing weight with full flaps, landing gear extended, and power off.

(v) T means takeoff minimum.

(w) TDZ means touchdown zone.

(x) Visibility minimum means the minimum visibility specified for approach,
or landing, or takeoff, expressed in statute miles, or in feet where RVR is reported.

(Secs. 307(c), 313(a), 601, Federal Aviation Act of 1958, as amended (49 U.S.C. 1348(c), 1354(a), 1421); sec. 6(c), Department of Transportation Act (49 U.S.C. 1665(c)))


§ 97.20 General.

This subpart prescribes standard instrument approach procedures based on the criteria contained in the U.S. Standard for Terminal Instrument Approach Procedures (TERPs). The standard instrument approach procedures adopted by the FAA and described on FAA Form 3139 are incorporated into this part and made a part hereof as provided in 5 U.S.C. 552(a)(1) and pursuant to 1 CFR part 20. The incorporated standard instrument approach procedures are available for examination at the Rules Docket and at the National Flight Data Center, Federal Aviation Administration, 800 Independence Avenue S.W., Washington, DC 20590. Copies of SIAPs adopted in a particular FAA Region are also available for examination at the headquarters of that Region. Moreover, copies of SIAPs originating in a particular Flight Inspection District Office are available for examination at that office. Based on the information contained on FAA Form 3139, standard instrument approach procedures are portrayed on charts prepared for the use of pilots by the U.S. Coast and Geodetic Survey and other publishers of aeronautical charts.

[Doc. No. 9748, 35 FR 5609, Apr. 7, 1970]
PART 99—SECURITY CONTROL OF AIR TRAFFIC

Subpart A—General

§ 99.1 Applicability.

(a) This subpart prescribes rules for operating civil aircraft in a defense area, or into, within, or out of the United States through an Air Defense Identification Zone (ADIZ), designated in subpart B.

(b) Except for §§ 99.7 and 99.12, this subpart does not apply to the operation of any aircraft—

(1) Within the 48 contiguous States and the District of Columbia, or within the State of Alaska, on a flight which remains within 10 nautical miles of the point of departure;

(2) Operating at true airspeed of less than 180 knots in the Hawaii ADIZ or over any island, or within 3 nautical miles of the coastline of any island, in the Hawaii ADIZ;

(3) Operating at true airspeed of less than 180 knots in the Alaska ADIZ while the pilot maintains a continuous listening watch on the appropriate frequency; or

(4) Operating at true airspeed of less than 180 knots in the Guam ADIZ.

(c) Except as provided in § 99.7, the radio and position reporting requirements of this subpart do not apply to the operation of an aircraft within the 48 contiguous States and the District of Columbia, or within the State of Alaska, if that aircraft does not have two-way radio and is operated in accordance with a filed DVFR flight plan containing the time and point of ADIZ penetration and that aircraft departs within 5 minutes of the estimated departure time contained in the flight plan.

(d) An FAA ATC center may exempt the following operations from this subpart (except § 99.7), on a local basis only, with the concurrence of the military commanders concerned:

(1) Aircraft operations that are conducted wholly within the boundaries of an ADIZ and are not currently significant to the air defense system.

(2) Aircraft operations conducted in accordance with special procedures prescribed by the military authorities concerned.


§ 99.3 General.

(a) The Air Defense Identification Zone (ADIZ) is an area of airspace over land or water in which the ready identification, location, and control of civil aircraft is required in the interest of national security.

(b) Unless designated as an ADIZ, a Defense Area is any airspace of the United States in which the control of aircraft is required for reasons of national security.

(c) For the purposes of this part, a Defense Visual Flight Rules (DVFR) flight is a flight within an ADIZ conducted under the visual flight rules in part 91.
§ 99.5 Emergency situations.
In an emergency that requires immediate decision and action for the safety of the flight, the pilot in command of an aircraft may deviate from the rules in this part to the extent required by that emergency. He shall report the reasons for the deviation to the communications facility where flight plans or position reports are normally filed (referred to in this part as “an appropriate aeronautical facility”) as soon as possible.

§ 99.7 Special security instructions.
Each person operating an aircraft in an ADIZ or Defense Area shall, in addition to the applicable rules of this part, comply with special security instructions issued by the Administrator in the interest of national security and that are consistent with appropriate agreements between the FAA and the Department of Defense.

§ 99.9 Radio requirements.
Except as provided in § 99.1(c), no person may operate an aircraft in an ADIZ unless the aircraft has a functioning two-way radio.

§ 99.11 ADIZ flight plan requirements.
(a) Unless otherwise authorized by ATC, no person may operate an aircraft into, within, or across an ADIZ unless that person has filed a flight plan with an appropriate aeronautical facility.
(b) Unless ATC authorizes an abbreviated flight plan:
(1) A flight plan for IFR flight must contain the information specified in § 91.153(a) (1) through (6).
(2) A flight plan for VFR flight must contain the information specified in § 91.153(a) (1) through (6).
(3) If airport of departure is within the Alaskan ADIZ and there is no facility for filing a flight plan then:
(i) Immediately after takeoff or when within range of an appropriate aeronautical facility, comply with provisions of paragraph (b)(1) or (b)(2) as appropriate.
(ii) Proceed according to the instructions issued by the appropriate aeronautical facility.
(c) The pilot shall designate a flight plan for VFR as a DVFR flight plan.

§ 99.12 Transponder-on requirements.
(a) Aircraft transponder-on operation. Each person operating an aircraft into or out of the United States into, within, or across an ADIZ designated in subpart B of this part, if that aircraft is equipped with an operable radar beacon transponder, shall operate the transponder, including altitude encoding equipment if installed, and shall reply on the appropriate code or as assigned by ATC.
(b) ATC transponder equipment and use. Effective September 7, 1990, unless otherwise authorized by ATC, no person may operate a civil aircraft into or out of the United States into, within, or across the contiguous U.S. ADIZ designated in subpart B of this part unless that aircraft is equipped with a coded radar beacon transponder.
(c) ATC transponder and altitude reporting equipment and use. Effective December 30, 1990, unless otherwise authorized by ATC, no person may operate a civil aircraft into or out of the contiguous U.S. ADIZ unless that aircraft is equipped with a coded radar beacon transponder and automatic pressure altitude reporting equipment having altitude reporting capability that automatically replies to interrogations by transmitting pressure altitude information in 100-foot increments.
(d) Paragraphs (b) and (c) of this section do not apply to the operation of an aircraft which was not originally certificated with an engine-driven electrical system and which has not subsequently been certificated with such a system installed, a balloon, or a glider.

§ 99.15 Arrival or completion notice.
The pilot in command of an aircraft for which a flight plan has been filed shall file an arrival or completion notice with an appropriate aeronautical
§ 99.17 Position reports; aircraft operating in or penetrating an ADIZ; IFR.

The pilot of an aircraft operating in or penetrating an ADIZ under IFR—
(a) In controlled airspace, shall make the position reports required in §91.183; and
(b) In uncontrolled airspace, shall make the position reports required in §99.19.


§ 99.19 Position reports; aircraft operating in or penetrating an ADIZ; DVFR.

No pilot may operate an aircraft penetrating an ADIZ under DVFR unless—
(a) That pilot reports to an appropriate aeronautical facility before penetration: The time, position, and altitude at which the aircraft passed the last reporting point before penetration and the estimated time of arrival over the next appropriate reporting point along the flight route;
(b) If there is no appropriate reporting point along the flight route, that pilot reports at least 15 minutes before penetration: The estimated time, position, and altitude at which he will penetrate; or
(c) If the airport departure is within an ADIZ or so close to the ADIZ boundary that it prevents his complying with paragraphs (a) or (b) of this section, that pilot has reported immediately after taking off: the time of departure, altitude, and estimated time of arrival over the first reporting point along the flight route.

§ 99.21 Position reports; aircraft entering the United States through an ADIZ; United States aircraft.

The pilot of an aircraft entering the United States through an ADIZ shall make the reports required in §99.17 or 99.19 to an appropriate aeronautical facility.

§ 99.23 Position reports; aircraft entering the United States through an ADIZ; foreign aircraft.

In addition to other reports as ATC may require, no pilot in command of a foreign civil aircraft may enter the U.S. through an ADIZ unless that pilot makes the reports required in §99.17 or 99.19 or reports the position of the aircraft when it is not less than one hour and not more than 2 hours average direct cruising distance from the United States.


§ 99.27 Deviation from flight plans and ATC clearances and instructions.

(a) No pilot may deviate from the provisions of an ATC clearance or ATC instruction except in accordance with §91.123 of this chapter.

(b) No pilot may deviate from the filed IFR flight plan when operating an aircraft in uncontrolled airspace unless that pilot notifies an appropriate aeronautical facility before deviating.

(c) No pilot may deviate from the filed DVFR flight plan unless that pilot notifies an appropriate aeronautical facility before deviating.


§ 99.29 Radio failure; DVFR.

If the pilot operating an aircraft under DVFR in an ADIZ cannot maintain two-way radio communications, the pilot may proceed in accordance with original DVFR flight plan or land as soon as practicable. The pilot shall report the radio failure to an appropriate aeronautical facility as soon as possible.

§ 99.31 Radio failure; IFR.

If a pilot operating an aircraft under IFR in an ADIZ cannot maintain two-way radio communications, the pilot shall proceed in accordance with §91.185 of this chapter.

Subpart B—Designated Air Defense Identification Zones

§ 99.41 General.

The airspace above the areas described in this subpart is established as an ADIZ Defense Area. The lines between points described in this subpart are great circles except that the lines joining adjacent points on the same parallel of latitude are rhumb lines.

§ 99.42 Contiguous U.S. ADIZ.

(a) The area bounded by a line from 26°00' N, 96°35' W; 26°00' N, 95°00' W; 26°30' N, 95°00' W; then along 26°30' N to 26°30' N, 84°00' W; 24°00' N, 83°00' W; 24°00' N, 80°00' W; 24°00' N, 79°25' W; 25°40' N, 79°25' W; 27°30' N, 78°50' W; 30°45' N, 74°00' W; 39°30' N, 63°45' W; 43°00' N, 65°48' W; 41°15' N, 69°30' W; 40°32' N, 72°15' W; 39°55' N, 73°00' W; 39°36' N, 73°30' W; 39°30' N, 73°45' W; 37°00' N, 75°30' W; 36°10' N, 75°10' W; 35°10' N, 75°10' W; 32°01' N, 80°32' W; 30°50' N, 80°54' W; 30°05' N, 81°07' W; 27°59' N, 79°23' W; 24°49' N, 80°00' W; 24°49' N, 80°55' W; 25°10' N, 81°12' W; then along a line 3 nautical miles from the shoreline to 25°45' N, 81°27' W; 25°45' N, 82°07' W; 28°55' N, 83°30' W; 29°20' N, 85°00' W; 30°00' N, 86°00' W; 30°00' N, 88°30' W; 29°00' N, 89°00' W; 28°45' N, 90°00' W; 29°26' N, 94°00' W; 28°42' N, 95°17' W; 28°05' N, 96°30' W; 26°25' N, 96°30' W; 26°00' N, 96°35' W; 25°58' N, to 97°07' W.

(b) The area bounded by a line from 32°32'03" N, 117°07'25" W; 32°30' N, 117°20' W; 32°00' N, 118°24' W; 30°45' N, 120°50' W; 29°00' N, 124°00' W; 37°42' N, 130°40' W; 48°20' N, 132°00' W; 48°20' N, 128°00' W; 48°30' N, 125°00' W; 48°29'38" N, 124°43'35" W; 48°00' N, 125°15' W; 46°15' N, 124°30' W; 43°00' N, 124°40' W; 40°00' N, 124°35' W; 38°50' N, 124°00' W; 34°50' N, 121°10' W; 34°00' N, 120°30' W; 32°00' N, 118°24' W; 32°30' N, 117°20' W; 32°32'03" N, to 117°07'25" W; and

(c) A line extending from 32°32'03" N, 117°07'25" W; eastward along the United States-Mexico Border to 25°58'00" N, 97°07'00" W.


§ 99.43 Alaska ADIZ.

The area bounded by a line 54°00' N, 136°00' W; 56°57' N, 144°00' W; 57°00' N, 145°00' W; 53°00' N, 158°00' W; 50°00' N, 169°00' W; 50°00' N, 180°00' W; 50°00' N, 170°00' E; 53°00' N, 170°00' E; 60°00' N, 180°00' W; 65°00' N, 169°00' W; then along 169°00' W to 75°00' N, 169°00' W; then along the 75°00' N parallel to 75°00' N; 141°00' W to 69°50' N, 141°00' W; 71°18' N, 156°44' W; 69°52' N, 163°00' W; then south along 163°00' W to 54°00' N, 163°00' W; 56°30' N, 154°00' W; 59°20' N, 146°00' W; 59°30' N, 140°00' W; 57°00' N, 136°00' W; 54°35' N, 133°00' W; to point of beginning.


§ 99.45 Guam ADIZ.

(a) Inner boundary. From a point 13°52'07" N, 143°59'16" E, counterclockwise along the 50-nautical-mile radius arc of the NI'MITZ VORTAC (located at 13°27'11" N, 144°43'51" E); to a point 13°02'08" N, 145°28'17" E; then to a point 14°49'07" N, 146°13'58" E; counterclockwise along the 35-nautical-mile radius arc of the SAIPAN NDB (located at 15°06'46" N, 145°42'42" E); to a point 15°24'21" N, 145°11'21" E; then to the point of origin.

(b) Outer boundary. The area bounded by a circle with a radius of 250 NM centered at latitude 13°32'41" N, longitude 144°50'30" E.

[Doc. No. 25113, 53 FR 34043, Sept. 2, 1988]

§ 99.47 Hawaii ADIZ.

(a) Outer boundary. The area included in the irregular octagonal figure formed by a line connecting 26°30' N, 156°00' W; 26°30' N, 161°00' W; 24°00' N, 164°00' W; 20°00' N, 164°00' W; 17°00' N, 160°00' W; 16°00' N, 156°00' W; 20°00' N, 153°00' W; 22°00' N, 153°00' W; to point of beginning.

(b) Inner boundary. The inner boundary to follow a line connecting 22°30' N, 157°00' W; 22°30' N, 160°00' W; 22°00' N, 161°00' W; 21°00' N, 161°00' W; 20°00' N, 160°00' W; 20°00' N, 156°30' W; 21°00' N, 155°30' W; to point of beginning.

[Doc. No. 25113, 53 FR 34043, Sept. 2, 1988]

§ 99.49 Defense Area.

All airspace of the United States is designated as Defense Area except that airspace already designated as Air Defense Identification Zone.
PART 101—MOORED BALLOONS, KITES, UNMANNED ROCKETS AND UNMANNED FREE BALLOONS

Subpart A—General

Sec. 101.1 Applicability.
101.3 Waivers.
101.5 Operations in prohibited or restricted areas.
101.7 Hazardous operations.

Subpart B—Moored Balloons and Kites

101.11 Applicability.
101.13 Operating limitations.
101.15 Notice requirements.
101.17 Lighting and marking requirements.
101.19 Rapid deflation device.

Subpart C—Unmanned Rockets

101.21 Applicability.
101.22 Special provisions for large model rockets.
101.25 Notice requirements.

Subpart D—Unmanned Free Balloons

101.31 Applicability.
101.33 Operating limitations.
101.35 Equipment and marking requirements.
101.37 Notice requirements.
101.39 Balloon position reports.

AUTHORITY: 49 U.S.C. 106(g), 40103, 40113-40114, 4013-40114, 45302, 44502, 44514, 44701-44702, 44721, 46308.

Subpart A—General

§ 101.1 Applicability.

(a) This part prescribes rules governing the operation in the United States, of the following:

(1) Except as provided for in §101.7, any balloon that is moored to the surface of the earth or an object thereon and that has a diameter of more than 6 feet or a gas capacity of more than 115 cubic feet.

(2) Except as provided for in §101.7, any kite that weighs more than 5 pounds and is intended to be flown at the end of a rope or cable.

(3) Any unmanned rocket except:

(i) Aerial firework displays; and,

(ii) Model rockets:

(a) Using not more than four ounces of propellant;

(b) Using a slow-burning propellant;

(c) Made of paper, wood, or breakable plastic, containing no substantial metal parts and weighing not more than 16 ounces, including the propellant; and

(d) Operated in a manner that does not create a hazard to persons, property, or other aircraft.

(4) Except as provided for in §101.7, any unmanned free balloon that—

(i) Carries a payload package that weighs more than four pounds and has a weight/size ratio of more than three ounces per square inch on any surface of the package, determined by dividing the total weight in ounces of the payload package by the area in square inches of its smallest surface;

(ii) Carries a payload package that weighs more than six pounds;

(iii) Carries a payload, of two or more packages, that weighs more than 12 pounds; or

(iv) Uses a rope or other device for suspension of the payload that requires an impact force of more than 50 pounds to separate the suspended payload from the balloon.

(b) For the purposes of this part, a gyroglider attached to a vehicle on the surface of the earth is considered to be a kite.


§ 101.3 Waivers.

No person may conduct operations that require a deviation from this part except under a certificate of waiver issued by the Administrator.

[Doc. No. 1580, 28 FR 6721, June 29, 1963]

§ 101.5 Operations in prohibited or restricted areas.

No person may operate a moored balloon, kite, unmanned rocket, or unmanned free balloon in a prohibited or restricted area unless he has permission from the using or controlling agency, as appropriate.

[Doc. No. 1457, 29 FR 46, Jan. 3, 1964]
§ 101.7 Hazardous operations.
(a) No person may operate any moored balloon, kite, unmanned rocket, or unmanned free balloon in a manner that creates a hazard to other persons, or their property.
(b) No person operating any moored balloon, kite, unmanned rocket, or unmanned free balloon may allow an object to be dropped therefrom, if such action creates a hazard to other persons or their property.

(Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))

[Doc. No. 12800, 39 FR 22252, June 21, 1974]

§ 101.11 Applicability.
This subpart applies to the operation of moored balloons and kites. However, a person operating a moored balloon or kite within a restricted area must comply only with §101.19 and with additional limitations imposed by the using or controlling agency, as appropriate.

§ 101.13 Operating limitations.
(a) Except as provided in paragraph (b) of this section, no person may operate a moored balloon or kite—
(1) Less than 500 feet from the base of any cloud;
(2) More than 500 feet above the surface of the earth;
(3) From an area where the ground visibility is less than three miles; or
(4) Within five miles of the boundary of any airport.
(b) Paragraph (a) of this section does not apply to the operation of a balloon or kite below the top of any structure and within 250 feet of it, if that shielded operation does not obscure any lighting on the structure.

§ 101.15 Notice requirements.
No person may operate an unshielded moored balloon or kite more than 150 feet above the surface of the earth unless, at least 24 hours before beginning the operation, he gives the following information to the FAA ATC facility that is nearest to the place of intended operation:
(a) The names and addresses of the owners and operators.
(b) The size of the balloon or the size and weight of the kite.
(c) The location of the operation.
(d) The height above the surface of the earth at which the balloon or kite is to be operated.
(e) The date, time, and duration of the operation.

§ 101.17 Lighting and marking requirements.
(a) No person may operate a moored balloon or kite between sunset and sunrise unless the balloon or kite, and its mooring lines, are lighted so as to give a visual warning equal to that required for obstructions to air navigation in the FAA publication “Obstruction Marking and Lighting”.
(b) No person may operate a moored balloon or kite between sunrise and sunset unless its mooring lines have colored pennants or streamers attached at not more than 50 foot intervals beginning at 150 feet above the surface of the earth and visible for at least one mile.

(Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))


§ 101.19 Rapid deflation device.
No person may operate a moored balloon unless it has a device that will automatically and rapidly deflate the balloon if it escapes from its moorings. If the device does not function properly, the operator shall immediately notify the nearest ATC facility of the location and time of the escape and the estimated flight path of the balloon.

Subpart C—Unmanned Rockets

§ 101.21 Applicability.
This subpart applies to the operation of unmanned rockets. However, a person operating an unmanned rocket within a restricted area must comply only with §101.23(g) and with additional
§ 101.22 Special provisions for large model rockets.

Persons operating model rockets that use not more than 125 grams of propellant; that are made of paper, wood, or breakable plastic; that contain no substantial metal parts, and that weigh not more than 1,500 grams, including the propellant, need not comply with §101.23 (b), (c), (g), and (h), provided:

(a) That person complies with all provisions of §101.25; and

(b) The operation is not conducted within 5 miles of an airport runway or other landing area unless the information required in §101.25 is also provided to the manager of that airport.


§ 101.23 Operating limitations.

No person may operate an unmanned rocket—

(a) In a manner that creates a collision hazard with other aircraft;

(b) In controlled airspace;

(c) Within five miles of the boundary of any airport;

(d) At any altitude where clouds or obscuring phenomena of more than five-tenths coverage prevails;

(e) At any altitude where the horizontal visibility is less than five miles;

(f) Into any cloud;

(g) Within 1,500 feet of any person or property that is not associated with the operations; or

(h) Between sunset and sunrise.

(Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))


§ 101.25 Notice requirements.

No person may operate an unmanned rocket unless that person gives the following information to the FAA ATC facility nearest to the place of intended operation no less than 24 hours prior to and no more than 48 hours prior to beginning the operation:

(a) The names and addresses of the operators; except when there are multiple participants at a single event, the name and address of the person so designated as the event launch coordinator, whose duties include coordination of the required launch data estimates and coordinating the launch event;

(b) The estimated number of rockets to be operated;

(c) The estimated size and the estimated weight of each rocket; and

(d) The estimated highest altitude or flight level to which each rocket will be operated.

(e) The location of the operation.

(f) The date, time, and duration of the operation.

(g) Any other pertinent information requested by the ATC facility.


Subpart D—Unmanned Free Balloons

SOURCE: Docket No. 1457, 29 FR 47, Jan. 3, 1964, unless otherwise noted.

§ 101.31 Applicability.

This subpart applies to the operation of unmanned free balloons. However, a person operating an unmanned free balloon within a restricted area must comply only with §101.33 (d) and (e) and with any additional limitations that are imposed by the using or controlling agency, as appropriate.

§ 101.33 Operating limitations.

No person may operate an unmanned free balloon—

(a) Unless otherwise authorized by ATC, below 2,000 feet above the surface within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport;

(b) At any altitude where there are clouds or obscuring phenomena of more than five-tenths coverage;

(c) At any altitude below 60,000 feet standard pressure altitude where the horizontal visibility is less than five miles;

(d) During the first 1,000 feet of ascent, over a congested area of a city, town, or settlement or an open-air assembly of persons not associated with the operation; or
§ 101.37 Notice requirements.

(a) Prelaunch notice: Except as provided in paragraph (b) of this section, no person may operate an unmanned free balloon unless, within 6 to 24 hours before beginning the operation, he gives the following information to the FAA ATC facility that is nearest to the place of intended operation:

(1) The balloon identification.
(2) The estimated date and time of launching, amended as necessary to remain within plus or minus 30 minutes.
(3) The location of the launching site.
(4) The cruising altitude.
(5) The forecast trajectory and estimated time to cruising altitude or 60,000 feet standard pressure altitude, whichever is lower.
(6) The length and diameter of the balloon, length of the suspension device, weight of the payload, and length of the trailing antenna.
(7) The duration of flight.
(8) The forecast time and location of impact with the surface of the earth.

(b) For solar or cosmic disturbance investigations involving a critical time element, the information in paragraph (a) of this section shall be given within 30 minutes to 24 hours before beginning the operation.

(c) Cancellation notice: If the operation is canceled, the person who intended to conduct the operation shall immediately notify the nearest FAA ATC facility.

(d) Launch notice: Each person operating an unmanned free balloon shall notify the nearest FAA or military ATC facility of the launch time immediately after the balloon is launched.
§ 101.39 Balloon position reports.

(a) Each person operating an unmanned free balloon shall:

(1) Unless ATC requires otherwise, monitor the course of the balloon and record its position at least every two hours; and

(2) Forward any balloon position reports requested by ATC.

(b) One hour before beginning descent, each person operating an unmanned free balloon shall forward to the nearest FAA ATC facility the following information regarding the balloon:

(1) The current geographical position.

(2) The altitude.

(3) The forecast time of penetration of 60,000 feet standard pressure altitude (if applicable).

(4) The forecast trajectory for the balance of the flight.

(5) The forecast time and location of impact with the surface of the earth.

(c) If a balloon position report is not recorded for any two-hour period of flight, the person operating an unmanned free balloon shall immediately notify the nearest FAA ATC facility. The notice shall include the last recorded position and any revision of the forecast trajectory. The nearest FAA ATC facility shall be notified immediately when tracking of the balloon is re-established.

(d) Each person operating an unmanned free balloon shall notify the nearest FAA ATC facility when the operation is ended.

PART 103—ULTRALIGHT VEHICLES

Subpart A—General

Sec. 103.1 Applicability.
103.3 Inspection requirements.
103.5 Waivers.
103.7 Certification and registration.

Subpart B—Operating Rules

103.9 Hazardous operations.
103.11 Daylight operations.
103.13 Operation near aircraft; right-of-way rules.
103.15 Operations over congested areas.
103.17 Operations in certain airspace.
103.19 Operations in prohibited or restricted areas.

103.20 Flight restrictions in the proximity of certain areas designated by notice to airmen.

103.21 Visual reference with the surface.
103.23 Flight visibility and cloud clearance requirements.

Authority: 49 U.S.C. 106(g), 40103-40104, 40113, 44701.

Source: Docket No. 21631, 47 FR 38776, Sept. 2, 1982, unless otherwise noted.

Subpart A—General

§ 103.1 Applicability.

This part prescribes rules governing the operation of ultralight vehicles in the United States. For the purposes of this part, an ultralight vehicle is a vehicle that:

(a) Is used or intended to be used for manned operation in the air by a single occupant;

(b) Is used or intended to be used for recreation or sport purposes only;

(c) Does not have any U.S. or foreign airworthiness certificate; and

(d) If unpowered, weighs less than 155 pounds; or

(e) If powered:

(1) Weighs less than 254 pounds empty weight, excluding floats and safety devices which are intended for deployment in a potentially catastrophic situation;

(2) Has a fuel capacity not exceeding 5 U.S. gallons;

(3) Is not capable of more than 55 knots calibrated airspeed at full power in level flight; and

(4) Has a power-off stall speed which does not exceed 24 knots calibrated airspeed.

§ 103.3 Inspection requirements.

(a) Any person operating an ultralight vehicle under this part shall, upon request, allow the Administrator, or his designee, to inspect the vehicle to determine the applicability of this part.

(b) The pilot or operator of an ultralight vehicle must, upon request of the Administrator, furnish satisfactory evidence that the vehicle is subject only to the provisions of this part.

§ 103.5 Waivers.

No person may conduct operations that require a deviation from this part
§ 103.23 Flight visibility and cloud clearance requirements.

(a) Notwithstanding any other section pertaining to certification of aircraft or their parts or equipment, ultralight vehicles and their component parts and equipment are not required to meet the airworthiness certification standards specified for aircraft or to have certificates of airworthiness.

(b) Notwithstanding any other section pertaining to airman certification, operators of ultralight vehicles are not required to meet any aeronautical knowledge, age, or experience requirements to operate those vehicles or to have airman or medical certificates.

(c) Notwithstanding any other section pertaining to registration and marking of aircraft, ultralight vehicles are not required to be registered or to bear markings of any type.

Subpart B—Operating Rules

§ 103.9 Hazardous operations.

(a) No person may operate any ultralight vehicle in a manner that creates a hazard to other persons or property.

(b) No person may allow an object to be dropped from an ultralight vehicle if such action creates a hazard to other persons or property.

§ 103.11 Daylight operations.

(a) No person may operate an ultralight vehicle except between the hours of sunrise and sunset.

(b) Notwithstanding paragraph (a) of this section, ultralight vehicles may be operated during the twilight periods 30 minutes before official sunrise and 30 minutes after official sunset or, in Alaska, during the period of civil twilight as defined in the Air Almanac, if:

(1) The vehicle is equipped with an operating anticollision light visible for at least 3 statute miles; and

(2) All operations are conducted in uncontrolled airspace.

§ 103.13 Operation near aircraft; right-of-way rules.

(a) Each person operating an ultralight vehicle shall maintain vigilance so as to see and avoid aircraft and shall yield the right-of-way to all aircraft.

(b) No person may operate an ultralight vehicle in a manner that creates a collision hazard with respect to any aircraft.

(c) Powered ultralights shall yield the right-of-way to unpowered ultralights.

§ 103.15 Operations over congested areas.

No person may operate an ultralight vehicle over any congested area of a city, town, or settlement, or over any open air assembly of persons.

§ 103.17 Operations in certain airspace.

No person may operate an ultralight vehicle within Class A, Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless that person has prior authorization from the ATC facility having jurisdiction over that airspace.

§ 103.19 Operations in prohibited or restricted areas.

No person may operate an ultralight vehicle in prohibited or restricted areas unless that person has permission from the using or controlling agency, as appropriate.

§ 103.20 Flight restrictions in the proximity of certain areas designated by notice to airmen.

No person may operate an ultralight vehicle in areas designated in a Notice to Airmen under § 91.143 or § 91.141 of this chapter, unless authorized by ATC.

§ 103.21 Visual reference with the surface.

No person may operate an ultralight vehicle except by visual reference with the surface.

§ 103.23 Flight visibility and cloud clearance requirements.

No person may operate an ultralight vehicle when the flight visibility or distance from clouds is less than that
in the table found below. All operations in Class A, Class B, Class C, and Class D airspace or Class E airspace designated for an airport must receive prior ATC authorization as required in § 103.17 of this part.

<table>
<thead>
<tr>
<th>Airspace</th>
<th>Flight visibility</th>
<th>Distance from clouds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A</td>
<td>Not applicable</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>Class B</td>
<td>3 statute miles</td>
<td>Clear of Clouds.</td>
</tr>
<tr>
<td>Class C</td>
<td>3 statute miles</td>
<td>500 feet below.</td>
</tr>
<tr>
<td>Class D</td>
<td>3 statute miles</td>
<td>1,000 feet above.</td>
</tr>
<tr>
<td>Class E:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than</td>
<td>3 statute miles</td>
<td>500 feet below.</td>
</tr>
<tr>
<td>10,000 feet</td>
<td>1,000 feet above.</td>
<td></td>
</tr>
<tr>
<td>MSL.</td>
<td>2,000 feet hori-</td>
<td></td>
</tr>
<tr>
<td>At or above</td>
<td>5 statute miles</td>
<td>1,000 feet below.</td>
</tr>
<tr>
<td>10,000 feet</td>
<td>1,000 feet above.</td>
<td></td>
</tr>
<tr>
<td>MSL.</td>
<td>1 statute mile</td>
<td>Clear of clouds.</td>
</tr>
<tr>
<td>Class G:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,200 feet</td>
<td>1 statute mile</td>
<td>500 feet below.</td>
</tr>
<tr>
<td>or less above</td>
<td>1,000 feet above.</td>
<td></td>
</tr>
<tr>
<td>the surface</td>
<td>2,000 feet hori-</td>
<td></td>
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<tr>
<td>(regardless</td>
<td>1 statute mile</td>
<td></td>
</tr>
<tr>
<td>of MSL altitude).</td>
<td>500 feet below.</td>
<td></td>
</tr>
<tr>
<td>More than 1,200 feet above the surface but less than 10,000 feet MSL.</td>
<td>1,000 feet above.</td>
<td></td>
</tr>
<tr>
<td>More than 1,200 feet above the surface and at or above 10,000 feet MSL.</td>
<td>1 statute mile horizontal.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,000 feet below.</td>
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<tr>
<td></td>
<td>1,000 feet above.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 statute mile horizontal.</td>
<td></td>
</tr>
</tbody>
</table>

[Amdt. 103-17, 56 FR 65662, Dec. 17, 1991]

PART 105—PARACHUTE JUMPING

Subpart A—General

Sec. 105.1 Applicability.

Subpart B—Operating Rules

§ 105.11 Applicability.

(a) Except as provided in paragraphs (b) and (c) of this section, this subpart prescribes operating rules governing parachute jumps to which this part applies.

(b) This subpart does not apply to a parachute jump necessary to meet an emergency on the surface, when it is made at the direction, or with the approval, of an agency of the United States, or of a State, Puerto Rico, the District of Columbia, or a possession of the United States, or of a political subdivision of any of them.

(c) Sections 105.13 through 105.17 and §§105.27 through 105.37 of this subpart do not apply to a parachute jump made by a member of an Armed Force:

(1) Over or within a restricted area when that area is under the control of an Armed Force; or
§ 105.17 Jumps over or onto airports.

(2) In military operations in uncontrolled airspace.

(d) Section 105.23 does not apply to a parachute jump made by a member of an Armed Force within a restricted area that extends upward from the surface when that area is under the control of an Armed Force.


§ 105.13 General.

No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft, if that jump creates a hazard to air traffic or to persons or property on the surface.

§ 105.14 Radio equipment and use requirements.

(a) Except when otherwise authorized by ATC—

(1) No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft, in or into controlled airspace unless, during that flight—

(i) The aircraft is equipped with a functioning two-way radio communications system appropriate to the ATC facilities to be used;

(ii) Radio communications have been established between the aircraft and the nearest FAA air traffic control facility or FAA flight service station at least 5 minutes before the jumping activity is to begin, for the purpose of receiving information in the aircraft about known air traffic in the vicinity of the jumping activity; and

(iii) The information described in paragraph (a)(1)(ii) of this section has been received by the pilot in command and the jumpers in that flight; and

(2) The pilot in command of an aircraft used for any jumping activity in or into controlled airspace shall, during each flight—

(i) Maintain or have maintained a continuous watch on the appropriate frequency of the aircraft’s radio communications system from the time radio communications are first established between the aircraft and ATC, until he advises ATC that the jumping activity is ended from that flight; and

(ii) Advise ATC that the jumping activity is ended for that flight when the last parachute jumper from the aircraft reaches the ground.

(b) If, during any flight, the required radio communications system is or becomes inoperative, any jumping activity from the aircraft in or into controlled airspace shall be abandoned. However, if the communications system becomes inoperative in flight after receipt of a required ATC authorization, the jumping activity from that flight may be continued.


§ 105.15 Jumps over or into congested areas or open air assembly of persons.

(a) No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft, over or into a congested area of a city, town, or settlement, or an open air assembly of persons unless a certificate of authorization for that jump has been issued under this section. However, a parachutist may drift over that congested area or open air assembly with a fully deployed and properly functioning parachute if he is at a sufficient altitude to avoid creating a hazard to persons and property on the ground.

(b) An application for a certificate of authorization issued under this section is made in a form and in a manner prescribed by the Administrator and must be submitted to the FAA Flight Standards District Office having jurisdiction over the area in which the parachute jump is to be made, at least 4 days before the day of that jump.

(c) Each holder of a certificate of authorization issued under this section shall present that certificate for inspection upon the request of the Administrator, or any Federal, State, or local official.

§ 105.19 Jumps in or into Class A, Class B, Class C, and Class D airspace.

(a) No person may make a parachute jump, and no pilot in command may allow a parachute jump to be made from that aircraft, in or into Class A, Class B, Class C, and Class D airspace without, or in violation of, the terms of an ATC authorization issued under this section.

(b) Each request for an authorization under this section must be submitted to the nearest FAA air traffic control facility or FAA flight service station and must include the information prescribed by §105.25(a).

[Amdt. 105-10, 56 FR 66686, Dec. 17, 1991]

§ 105.23 Jumps in or into other airspace.

(a) No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft, in or into airspace unless the nearest FAA air traffic control facility or FAA flight service station was notified of that jump at least 1 hour before the jump is to be made, but not more than 24 hours before the jumping is to be completed, and the notice contained the information prescribed in §105.25(a).

(b) Notwithstanding paragraph (a) of this section, ATC may accept from a parachute jumping organization a written notification of a scheduled series of jumps to be made over a stated period of time not longer than 12 calendar months. The notification must contain the information prescribed by §105.25(a), identify the responsible persons associated with that jumping activity, and be submitted at least 15 days, but not more than 30 days, before the jumping is to begin. ATC may revoke the acceptance of the notification for any failure of the jumping organization to comply with its terms.

(c) This section does not apply to parachute jumps in or into any airspace or place described in §105.15, §105.19, or §105.21.


§ 105.25 Information required, and notice of cancellation or postponement of jump.

(a) Each person requesting an authorization under §105.19 or §105.21, and each person submitting a notice under §105.23, must include the following information (on an individual or group basis) in that request or notice:

(1) The date and time jumping will begin.

(2) The size of the jump zone expressed in nautical mile radius around the target.

(3) The location of the center of the jump zone in relation to—
   (i) The nearest VOR facility in terms of the VOR radial on which it is located, and its distance in nautical miles from the VOR facility when that facility is 30 nautical miles or less from the drop zone target; or
   (ii) The nearest airport, town, or city depicted on the appropriate Coast and Geodetic Survey WAC or Sectional Aeronautical chart, when the nearest VOR facility is more than 30 nautical miles from the drop zone target.

(4) The altitudes above mean sea level at which jumping will take place.

(5) The duration of the intended jump.

(6) The name, address, and telephone number of the person requesting the authorization or giving notice.

(7) The identification of the aircraft to be used.

(8) The radio frequencies, if any, available in the aircraft.

(b) Each person requesting an authorization under §105.19 or §105.21, and each person submitting a notice under §105.23, must promptly notify the FAA air traffic control facility or FAA
§ 105.43 Parachute equipment and packing requirements.

(a) No person may make a parachute jump, and no pilot in command of an aircraft may allow any person to make a parachute jump from that aircraft, between sunset and sunrise, unless that person is equipped with a means of producing a light visible for at least 3 statute miles.

(b) Each person making a parachute jump between sunset and sunrise shall display the light required by paragraph (a) of this section from the time that person exits the aircraft until that person reaches the surface.

[Doc. No. 16383, 43 FR 22641, May 25, 1978]

§ 105.35 Liquor and drugs.

No person may make a parachute jump while, and no pilot in command of an aircraft may allow a person to make a parachute jump from that aircraft if that person appears to be:

(a) Under the influence of intoxicating liquor; or

(b) Using any drug that affects his faculties in any way contrary to safety.

§ 105.37 Inspections.

The Administrator may inspect (including inspections at the jump site), any parachute jump operation to which this part applies, to determine compliance with the regulations of this part.

Subpart C—Parachute Equipment

§ 105.41 Applicability.

(a) Except as provided in paragraph (b) of this section, this subpart prescribes rules governing parachute equipment used in parachute jumps to which this part applies.

(b) This subpart does not apply to a parachute jump made by a member of an Armed Force using parachute equipment of an Armed Force.

§ 105.43 Parachute equipment and packing requirements.

(a) No person may make a parachute jump, and no pilot in command of an aircraft may allow any person to make a parachute jump from that aircraft, between sunset and sunrise, unless that person is equipped with a means of producing a light visible for at least 3 statute miles.

(b) Each person making a parachute jump between sunset and sunrise shall display the light required by paragraph (a) of this section from the time that person exits the aircraft until that person reaches the surface.

[Doc. No. 16383, 43 FR 22641, May 25, 1978]
are composed exclusively of nylon, rayon, or other similar synthetic fiber or material that is substantially resistant to damage from mold, mildew, or other fungi and other rotting agents propagated in a moist environment; or
(ii) Within 60 days before the date of use, if it is composed in any amount of silk, pongee, or other natural fiber, or material not specified in paragraph (a)(2)(i) of this section.

(b) No person may make a parachute jump using a static line attached to the aircraft and the main parachute unless an assist device, described and attached as follows, is used to aid the pilot chute in performing its function, or, if no pilot chute is used, to aid in the direct deployment of the main parachute canopy:

(1) The assist device must be long enough to allow the container to open before a load is placed on the device.

(2) The assist device must have a static load strength of—
(i) At least 28 pounds but not more than 160 pounds, if it is used to aid the pilot chute in performing its function; or
(ii) At least 56 pounds but not more than 320 pounds, if it is used to aid in the direct deployment of the main parachute canopy.

(3) The assist device must be attached—
(i) At one end, to the static line above the static line pins, or, if static pins are not used, above the static line ties to the parachute cone; and
(ii) At the other end, to the pilot chute apex, bridle cord or bridle loop, or, if no pilot chute is used, to the main parachute canopy.

(c) No person may attach an assist device required by paragraph (b) of this section to any main parachute unless he has a current parachute rigger certificate issued under part 65 of this chapter or is the person who makes the jump with that parachute.

(d) For the purpose of this section, an approved parachute is:

(1) A parachute manufactured under a type certificate or a technical standard order (C-23 series); or

(2) A personnel-carrying military parachute (other than a high altitude, high-speed, or ejection kind) identified by an NAF, AAF, or AN drawing number, an AAF order number, or any other military designation or specification number.

(1) Airport operator means a person who operates an airport regularly serving scheduled passenger operations of a certificate holder or a foreign air carrier required to have a security program by §108.5(a) or §129.25 of this chapter;

(2) Air Operations Area means a portion of an airport designed and used for landing, taking off, or surface maneuvering of airplanes;

(3) Escort means to accompany or supervise an individual who does not have unescorted access authority to areas restricted for security purposes, as identified in the airport security program, in a manner sufficient to take action should the individual engage in activities other than those for which the escorted access is granted. The responsive actions can be taken by the escort or other authorized individual.

(4) Exclusive area means that part of an air operations area for which an air carrier has agreed in writing with the airport operator to exercise exclusive security responsibility under an approved security program or a security program used in accordance with §129.25;

(5) Law enforcement officer means an individual who meets the requirements of §107.17; and

(6) Sterile area means an area to which access is controlled by the inspection of persons and property in accordance with an approved security program or a security program used in accordance with §129.25.

§107.3 Security program.

(a) No airport operator may operate an airport subject to this part unless it adopts and carries out a security program that—

(1) Provides for the safety of persons and property traveling in air transportation and intrastate air transportation against acts of criminal violence and aircraft piracy;

(2) Is in writing and signed by the airport operator or any person to whom the airport operator has delegated authority in this matter;

(3) Includes the items listed in paragraph (b), (f), or (g) of this section, as appropriate; and

(4) Has been approved by the Director of Civil Aviation Security.

(b) For each airport subject to this part regularly serving scheduled passenger operations conducted in airplanes having a passenger seating configuration (as defined in §108.3 of this section of this chapter) of more than 60 seats, the security program required by paragraph (a) of this section must include at least the following:

(1) A description of each air operations area, including its dimensions, boundaries, and pertinent features;

(2) A description of each area on or adjacent to, the airport which affects the security of any air operations area;

(3) A description of each exclusive area, including its dimensions, boundaries, and pertinent features, and the terms of the agreement establishing the area.

(4) The procedures, and a description of the facilities and equipment, used to perform the control functions specified in §107.13(a) by the airport operator and by each air carrier having security responsibility over an exclusive area.

(5) The procedures each air carrier having security responsibility over an exclusive area will use to notify the airport operator when the procedures, facilities, and equipment it uses are not adequate to perform the control functions described in §107.13(a).
§ 107.5 Approval of security program.

(a) Unless a shorter period is allowed by the Director of Civil Aviation Security, each airport operator seeking initial approval of a security program for an airport subject to this part shall submit the proposed program to the Director of Civil Aviation Security at least 90 days before any scheduled passenger operations are expected to begin by any certificate holder or permit holder to whom §§ 121.538 or 129.25 of this chapter applies.

(b) Within 30 days after receipt of a proposed security program, the Director of Civil Aviation Security either approves the program or gives the airport operator written notice to modify the program to make it conform to the applicable requirements of this part.

(c) After receipt of a notice to modify, the airport operator may either submit a modified security program or petition the Administrator to reconsider the notice to modify. A petition for reconsideration must be filed with the Director of Civil Aviation Security.

(d) Upon receipt of a petition for reconsideration, the Director of Civil Aviation Security reconsiders the notice to modify and either amends or withdraws the notice or transmits the petition, together with any pertinent...
§ 107.7 Changed conditions affecting security.

(a) After approval of the security program, the airport operator shall follow the procedures prescribed in paragraph (b) of this section whenever it determines that any of the following changed conditions has occurred:

1. Any description of an airport area set out in the security program in accordance with § 107.3(b) (1), (2), or (3) is no longer accurate.

2. The procedures included, and the facilities and equipment described, in the security program in accordance with § 107.3(b) (4) and (5) are not adequate for the control functions described in § 107.13(a).

3. The airport operator changes any alternate security procedures described in the security program in accordance with § 107.3(b)(6).

4. The law enforcement support described in the security program in accordance with § 107.3 (b)(7), (f)(1), or (g)(1) is not adequate to comply with § 107.15.

5. Any changes to the designation of the Airport Security Coordinator (ASC) required under § 107.29.

(b) Whenever a changed condition described in paragraph (a) of this section occurs, the airport operator shall—

1. Immediately notify the FAA security office having jurisdiction over the airport of the changed condition, and identify each interim measure being taken to maintain adequate security until an appropriate amendment to the security program is approved; and

2. Within 30 days after notifying the FAA in accordance with paragraph (b)(1) of this section, submit for approval in accordance with § 107.9 an amendment to the security program to bring it into compliance with this part.


§ 107.11 Amendment of security program by airport operator.

(a) An airport operator requesting approval of a proposed amendment to the security program shall submit the request to the Director of Civil Aviation Security. Unless a shorter period is allowed by the Director of Civil Aviation Security, the request must be submitted at least 30 days before the proposed effective date.

(b) Within 15 days after receipt of a proposed amendment, the Director of Civil Aviation Security issues to the airport operator, in writing, either an approval or a denial of the request.

(c) An amendment to a security program is approved if the Director of Civil Aviation Security determines that—

1. Safety and the public interest will allow it, and

2. The proposed amendment provides the level of security required by § 107.3.

(d) After denial of a request for an amendment the airport operator may petition the Administrator to reconsider the denial. A petition for reconsideration must be filed with the Director of Civil Aviation Security.

(e) Upon receipt of a petition for reconsideration the Director of Civil Aviation Security reconsiders the denial and either approves the proposed amendment or transmits the petition, together with any pertinent information, to the Administrator for consideration.

(f) After review of a petition for reconsideration, the Administrator disposes of the petition by either directing the Director of Civil Aviation Security to approve the proposed amendment or affirming the denial.

approved security program for an airport, if it is determined that safety and the public interest require the amendment.

(b) Except in an emergency as provided in paragraph (f) of this section, when the Administrator or the Director of Civil Aviation Security proposes to amend a security program, a notice of the proposed amendment is issued to the airport operator, in writing, fixing a period of not less than 30 days within which the airport operator may submit written information, views, and arguments on the amendment. After considering all relevant material, including that submitted by the airport operator, the Administrator or the Director of Civil Aviation Security either rescinds the notice or notifies the airport operator in writing of any amendment adopted, specifying an effective date not less than 30 days after receipt of the notice of amendment by the airport operator.

(c) After receipt of a notice of amendment from a Director of Civil Aviation Security, the airport operator may petition the Administrator to reconsider the amendment. A petition for reconsideration must be filed with the Director of Civil Aviation Security. Except in an emergency as provided in paragraph (f) of this section, a petition for reconsideration stays the amendment until the Administrator takes final action on the petition.

(d) Upon receipt of a petition for reconsideration, the Director of Civil Aviation Security reconsiders the amendment and either rescinds or modifies the amendment or transmits the petition, together with any pertinent information, to the Administrator for consideration.

(e) After review of a petition for reconsideration, the Administrator disposes of the petition by directing the Director of Civil Aviation Security to rescind the notice of amendment or to issue the amendment as proposed or in modified form.

(f) If the Administrator or the Director of Civil Aviation Security finds that there is an emergency requiring immediate action that makes the procedure in paragraph (b) of this section impracticable or contrary to the public interest, an amendment may be issued effective without stay on the date the airport operator receives notice of it. In such a case, the Administrator or the Director of Civil Aviation Security incorporates in the notice of the amendment the finding, including a brief statement of the reasons for the emergency and the need for emergency action.


§ 107.13 Security of air operations area.

(a) Except as provided in paragraph (b) of this section, each operator of an airport serving scheduled passenger operations where the certificate holder or foreign air carrier is required to conduct passenger screening under a program required by §108.5(a)(1) or §129.25(b)(1) of this chapter as appropriate shall use the procedures included, and the facilities and equipment described, in its approved security program, to perform the following control functions:

(1) Controlling access to each air operations area, including methods for preventing the entry of unauthorized persons and ground vehicles.

(2) Controlling movement of persons and ground vehicles within each air operations area, including, when appropriate, requirements for the display of identification.

(3) Promptly detecting and taking action to control each penetration, or attempted penetration, of an air operations area by a person whose entry is not authorized in accordance with the security program.

(b) An airport operator need not comply with paragraph (a) of this section with respect to an air carrier's exclusive area, if the airport operator's security program contains—

(1) Procedures, and a description of the facilities and equipment, used by the air carrier to perform the control functions described in paragraph (a) of this section; and

(2) Procedures by which the air carrier will notify the airport operator when its procedures, facilities, and equipment are not adequate to perform
§ 107.14 Access control system.

(a) Except as provided in paragraph (b) of this section, each operator of an airport regularly serving scheduled passenger operations conducted in airplanes having a passenger seating configuration (as defined in §108.3 of this chapter) of more than 60 seats shall submit to the Director of Civil Aviation Security, for approval and inclusion in its approved security program, an amendment to provide for a system, method, or procedure which meets the requirements specified in this paragraph for controlling access to secured areas of the airport. The system, method, or procedure shall ensure that only those persons authorized to have access to secured areas by the airport operator’s security program are able to obtain that access and shall specifically provide a means to ensure that such access is denied immediately at the access point or points to individuals whose authority to have access changes. The system, method, or procedure shall provide a means to differentiate between persons authorized to have access to only a particular portion of the secured areas and persons authorized to have access only to other portions or to the entire secured area. The system, method, or procedure shall be capable of limiting an individual’s access by time and date.

(b) The Director of Civil Aviation Security will approve an amendment to an airport operator’s security program that provides for the use of an alternative system, method, or procedure if, in the Director’s judgment, the alternative would provide an overall level of security equal to that which would be provided by the system, method, or procedure described in paragraph (a) of this section.

(c) Each airport operator shall submit the amendment to its approved security program required by paragraph (a) or (b) of this section according to the following schedule:

1. By August 8, 1989, or by 6 months after becoming subject to this section, whichever is later, for airports where at least 25 million persons are screened annually or airports that have been designated by the Director of Civil Aviation Security. The amendment shall specify that the system, method, or procedure must be fully operational within 18 months after the date on which an airport operator’s amendment to its approved security program is approved by the Director of Civil Aviation Security.

2. By August 8, 1989, or by 6 months after becoming subject to this section, whichever is later, for airports where more than 2 million persons are screened annually. The amendment shall specify that the system, method, or procedure must be fully operational within 24 months after the date on which an airport operator’s amendment to its approved security program is approved by the Director of Civil Aviation Security.

3. By February 8, 1990, or by 12 months after becoming subject to this section, whichever is later, for airports where at least 500,000 but not more than 2 million persons are screened annually. The amendment shall specify that the system, method, or procedure must be fully operational within 30 months after the date on which an airport operator’s amendment to its approved security program is approved by the Director of Civil Aviation Security.

4. By February 8, 1990, or by 12 months after becoming subject to this section, whichever is later, for airports where less than 500,000 persons are screened annually. The amendment shall specify that the system, method, or procedure must be fully operational within 30 months after the date on which an airport operator’s amendment to its approved security program is approved by the Director of Civil Aviation Security.

(d) Notwithstanding paragraph (c) of this section, an airport operator of a newly constructed airport commencing initial operation after December 31, 1990, as an airport subject to paragraph (a) of this section, shall include as part of its original airport security program to be submitted to the FAA for approval a fully operational system,
§ 107.15 Law enforcement support.

(a) Each airport operator shall provide law enforcement officers in the number and in a manner adequate to support—

(1) Its security program; and

(2) Each passenger screening system required by part 108 or § 129.25 of this chapter.

(b) For scheduled or public charter passenger operations with airplanes having a passenger seating configuration (as defined in § 108.3 of this chapter) of more than 30 but less than 61 seats for which a passenger screening system is not required, each airport operator shall ensure that law enforcement officers are available and committed to respond to an incident at the request of a certificate holder or foreign air carrier and shall ensure that the request procedures are provided to the certificate holder or foreign air carrier.

§ 107.17 Law enforcement officers.

(a) No airport operator may use, or arrange for response by, any person as a required law enforcement officer unless, while on duty on the airport, the officer—

(1) Has the arrest, authority described in paragraph (b) of this section;

(2) Is readily identifiable by uniform and displays or carries a badge or other indicia of authority;

(3) Is armed with a firearm and authorized to use it; and

(4) Has completed a training program that meets the requirements in paragraph (c) of this section.

(b) The law enforcement officer must, while on duty on the airport, have the authority to arrest, with or without a warrant, for the following violations of the criminal laws of the State and local jurisdictions in which the airport is located:

(1) A crime committed in the officer's presence.

(2) A felony, when the officer has reason to believe that the suspect has committed it.

(c) The training program required by paragraph (a)(4) of this section must provide training in the subjects specified in paragraph (d) of this section and either—

(1) Meet the training standards, if any, prescribed by either the State or the local jurisdiction in which the airport is located, for law enforcement officers performing comparable functions; or

(2) If the State and local jurisdictions in which the airport is located do not prescribe training standards for officers performing comparable functions, be acceptable to the Administrator.

(d) The training program required by paragraph (a)(4) of this section must include training in—

(1) The use of firearms;

(2) The courteous and efficient treatment of persons subject to inspection, detention, search, arrest, and other aviation security activities;

(3) The responsibilities of a law enforcement officer under the airport operator's approved security program; and

(4) Any other subject the Administrator determines is necessary.

§ 107.19 Use of Federal law enforcement officers.

(a) Whenever State, local, and private law enforcement officers who meet the requirements of § 107.17 are not available in sufficient numbers to meet the requirements of § 107.15, the airport operator may request that the Administrator authorize it to use Federal law enforcement officers.

(b) Each request for the use of Federal law enforcement officers must be accompanied by the following information:

(1) The number of passengers enplaned at the airport during the preceding calendar year and the current calendar year as of the date of the request.

(2) The anticipated risk of criminal violence and aircraft piracy at the airport and to the air carrier aircraft operations at the airport.

(3) A copy of that portion of the airport operator's security program which
describes the law enforcement support necessary to comply with §107.15.

(4) The availability of State, local, and private law enforcement officers who meet the requirements of §107.17, including a description of the airport operator's efforts to obtain law enforcement support from State, local, and private agencies and the responses of those agencies.

(5) The airport operator's estimate of the number of Federal law enforcement officers needed to supplement available officers and the period of time for which they are needed.

(6) A statement acknowledging responsibility for providing reimbursement for the cost of providing Federal law enforcement officers.

(7) Any other information the Administrator considers necessary.

(c) In response to a request submitted in accordance with this section, the Administrator may authorize, on a reimbursable basis, the use of law enforcement officers employed by the FAA or by any other Federal agency, with the consent of the head of that agency.


§ 107.20 Submission to screening.

No person may enter a sterile area without submitting to the screening of his or her person and property in accordance with the procedures being applied to control access to that area under §108.9 or §129.25 of this chapter.

[Doc. No. 24883, 51 FR 1352, Jan. 10, 1986]

§ 107.21 Carriage of an explosive, incendiary, or deadly or dangerous weapon.

(a) Except as provided in paragraph (b) of this section, no person may have an explosive, incendiary, or deadly or dangerous weapon on or about the individual's person or accessible property—

(1) When performance has begun of the inspection of the individual's person or accessible property before entering a sterile area; and

(2) When entering or in a sterile area.

(b) The provisions of this section with respect to firearms do not apply to the following:

(1) Law enforcement officers required to carry a firearm by this part while on duty on the airport.

(2) Persons authorized to carry a firearm in accordance with §108.11 or §129.27.

(3) Persons authorized to carry a firearm in a sterile area under an approved security program or a security program used in accordance with §129.25.


§ 107.23 Records.

(a) Each airport operator shall ensure that—

(1) A record is made of each law enforcement action taken in furtherance of this part;

(2) The record is maintained for a minimum of 90 days; and

(3) It is made available to the administrator upon request.

(b) Data developed in response to paragraph (a) of this section must include at least the following:

(1) The number and type of firearms, explosives, and incendiaries discovered during any passenger screening process, and the method of detection of each.

(2) The number of acts and attempted acts of air piracy.

(3) The number of bomb threats received, real and simulated bombs found, and actual bombings on the airport.

(4) The number of detentions and arrests, and the immediate disposition of each person detained or arrested.


§ 107.25 Airport identification media.

(a) As used in this section, security identification display area means any area identified in the airport security program as requiring each person to continuously display on their outermost garment, an airport-approved identification medium unless under airport-approved escort.

(b) After January 1, 1992, an airport operator may not issue to any person any identification media that provides
unescorted access to any security identification display area unless the person has successfully completed training in accordance with an FAA-approved curriculum specified in the security program.

(c) By October 1, 1992, not less than 50 percent of all individuals possessing airport-issued identification that provides unescorted access to any security identification display area at that airport shall have been trained in accordance with an FAA-approved curriculum specified in the security program.

(d) After May 1, 1993, an airport operator may not permit any person to possess any airport-issued identification medium that provides unescorted access to any security identification display area at that airport unless the person has successfully completed FAA-approved training in accordance with a curriculum specified in the security program.

(e) The curriculum specified in the security program shall detail the methods of instruction, provide attendees the opportunity to ask questions, and include at least the following topics:

(1) Control, use, and display of airport-approved identification or access media;

(2) Challenge procedures and the law enforcement response which supports the challenge procedure;

(3) Restrictions on divulging information concerning an act of unlawful interference with civil aviation if such information is likely to jeopardize the safety of domestic or international aviation;

(4) Non-disclosure of information regarding the airport security system or any airport tenant’s security systems; and

(5) Any other topics deemed necessary by the Assistant Administrator for Civil Aviation Security.

(f) No person may use any airport-approved identification medium that provides unescorted access to any security identification display area to gain such access unless that medium was issued to that person by the appropriate airport authority or other entity whose identification is approved by the airport operator.

(g) The airport operator shall maintain a record of all training given to each person under this section until 180 days after the termination of that person’s unescorted access privileges.

§ 107.27 Evidence of compliance.

On request of the Assistant Administrator for Civil Aviation Security, each airport operator shall provide evidence of compliance with this part and its approved security program.

§ 107.29 Airport Security Coordinator.

Each airport operator shall designate an Airport Security Coordinator (ASC) in its security program. The designation shall include the name of the ASC, and a description of the means by which to contact the ASC on a 24-hour basis. The ASC shall serve as the airport operator’s primary contact for security-related activities and communications with FAA, as set forth in the security program.

§ 107.31 Employment history, verification and criminal history records checks.

(a) Scope. On or after January 31, 1996, this section applies to all airport operators; airport users; individuals currently having unescorted access to a security identification display area (SIDA) that is identified by §107.25; all individuals seeking authorization for, or seeking the authority to authorize others to have, unescorted access to the SIDA; and each airport user and air carrier making a certification to an airport operator pursuant to paragraph (n) of this section. An airport user, for the purposes of §107.31 only, is any person making a certification under this section other than an air carrier subject to §108.33.

(b) Employment history investigations required. Except as provided in paragraph (m) of this section, each airport operator must ensure that no individual is granted authorization for, or is granted authority to authorize others to have, unescorted access to the SIDA unless the following requirements are met:

(1) The individual has satisfactorily undergone Part 1 of an employment
history investigation. Part 1 consists
of a review of the previous 10 years of
employment history and verification of
the 5 employment years preceding the
date the appropriate investigation is
initiated as provided in paragraph (c)
of this section; and
(2) If required by paragraph (c)(5) of
this section, the individual has satis-
fied Part 2 of the employment history
investigation. Part 2 is the process to
determine if the individual has a crimi-
nal record. To satisfy Part 2 of the in-
vestigation the criminal record check
must not disclose that the individual
has been convicted or found not guilty
by reason of insanity, in any jurisdi-
tion, during the 10 years ending on the
date of such investigation, of any of
the crimes listed below:
(i) Forgery of certificates, false
marking of aircraft, and other aircraft
registration violation, 49 U.S.C. 46306;
(ii) Interference with air navigation,
49 U.S.C. 46308;
(iii) Improper transportation of a
hazardous material, 49 U.S.C. 46312;
(iv) Aircraft piracy, 49 U.S.C. 46502;
(v) Interference with flightcrew
members or flight attendants, 49 U.S.C.
46504;
(vi) Commission of certain crimes
aboard aircraft in flight, 49 U.S.C.
46506;
(vii) Carrying a weapon or explosive
aboard aircraft, 49 U.S.C. 46505;
(viii) Conveying false information
and threats, 49 U.S.C. 46507;
(ix) Aircraft piracy outside the spe-
cial aircraft jurisdiction of the United
States, 49 U.S.C. 46502(b);
(x) Lighting violations involving
transporting controlled substances, 49
U.S.C. 46315;
(xi) Unlawful entry into an aircraft
or airport area that serves air carriers
or foreign air carriers contrary to es-
established security requirements, 49
U.S.C. 46314;
(xii) Destruction of an aircraft or air-
craft facility, 18 U.S.C. 32;
(xiii) Murder;
(xiv) Assault with intent to murder;
(xv) Espionage;
(xvi) Sedition;
(xvii) Kidnapping or hostage taking;
(xviii) Treason;
(xix) Rape or aggravated sexual
abuse;
(xx) Unlawful possession, use, sale,
distribution, or manufacture of an ex-
plosive or weapon;
(xxii) Extortion;
(xxiii) Armed robbery;
(xxiv) Felony arson;
(xxv) Conspiracy or attempt to com-
mit any of the aforementioned crim-
nal acts.
(c) Investigative steps. Part 1 of the
employment history investigation
must be completed on all persons listed
in paragraph (a) of this section. If re-
quired by paragraph (c)(5) of this sec-
tion, Part 2 of the employment history
investigation must also be completed
on all persons listed in paragraph (a) of
this section:
(1) The individual must provide the
following information on an applica-
tion form:
(i) The individual’s full name, includ-
ing any aliases or nicknames.
(ii) The dates, names, phone num-
bers, and addresses of previous employ-
ers, with explanations for any gaps in
employment of more than 12 consecu-
tive months, during the previous 10-
year period.
(iii) Any convictions during the pre-
vious 10-year period of the crimes list-
ed in paragraph (b)(2) of this section.
(iv) Any convictions during the pre-
vious 10-year period of the crimes list-
ed in paragraph (b)(2) of this section.
(2) The airport operator or the air-
port user must include on the applica-
tion form a notification that the indi-
vidual will be subject to an employ-
ment history verification and possibly
a criminal records check.
(3) The airport operator or the air-
port user must verify the identity of
the individual through the presen-
tation of two forms of identification,
one of which must bear the individual’s
photograph.
(4) The airport operator or the air-
port user must verify the information
on the most recent 5 years of employ-
ment history required under paragraph
(c)(3)(ii) of this section. Information
must be verified in writing, by docu-
mentation, by telephone, or in person.
(5) If one or more of the conditions
(triggers) listed in §107.31(c)(5)(i)
through (iv) exist, the employment his-
tory investigation must not be consid-
ered complete unless Part 2 is accom-
plished. Only the airport operator may
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initiate Part 2 for airport users under this section. Part 2 consists of a comparison of the individual’s fingerprints against the fingerprint files of known criminals maintained by the Federal Bureau of Investigation (FBI). The comparison of the individual’s fingerprints must be processed through the FAA. The airport operator may request a check of the individual’s fingerprint-based criminal record only if one or more of the following conditions exist:

(i) The individual does not satisfactorily account for a period of unemployment of 12 consecutive months or more during the previous 10-year period.

(ii) The individual is unable to support statements made on the application form.

(iii) There are significant inconsistencies in the information provided on the application.

(iv) Information becomes available to the airport operator or the airport user during the investigation indicating a possible conviction for one of the crimes listed in paragraph (b)(2) of this section.

(d) Individual notification. Prior to commencing the criminal records check, the airport operator must notify the affected individual and identify the Airport Security Coordinator as a contact for follow-up. An individual, who chooses not to submit fingerprints, after having met a requirement for Part 2 of the employment investigation, may not be granted unescorted access privilege.

(e) Fingerprint processing. If a fingerprint comparison is necessary under paragraph (c)(5) of this section to complete the employment history investigation the airport operator must collect and process fingerprints in the following manner:

(1) One set of legible and classifiable fingerprints must be recorded on fingerprint cards approved by the FBI, and distributed by the FAA for this purpose.

(2) The fingerprints must be obtained from the individual under direct observation by the airport operator or a law enforcement officer. Individuals submitting their fingerprints may not take possession of their fingerprint card after they have been fingerprinted.

(3) The identity of the individual must be verified at the time fingerprints are obtained. The individual must present two forms of identification, one of which must bear the individual’s photograph.

(4) The fingerprint card must be forwarded to the FAA at the location specified by the Administrator.

(5) Fees for the processing of the criminal record checks are due upon application. Airport operators must submit payment through corporate check, cashier’s check, or money order made payable to “U.S. FAA” at the designated rate for each fingerprint card. Combined payment for multiple applications is acceptable. The designated rate for processing the fingerprint cards is available from the local FAA security office.

(f) Determination of arrest status. In conducting the criminal record checks required by this section, the airport operator must not consider the employment history investigation complete unless it investigates arrest information for the crimes listed in paragraph (b)(2) of this section for which no disposition has been recorded and makes a determination that the arrest did not result in a disqualifying conviction.

(g) Availability and correction of FBI records and notification of disqualification. (1) At the time Part 2 is initiated and the fingerprints are collected, the airport operator must notify the individual that a copy of the criminal record received from the FBI will be made available to the individual if requested in writing. When requested in writing, the airport operator must make available to the individual a copy of any criminal record received from the FBI.

(2) Prior to making a final decision to deny authorization to an individual described in paragraph (a) of this section, the airport operator must advise the individual that the FBI criminal record discloses information that would disqualify him/her from receiving unescorted access and provide the individual with a copy of the FBI record if it has been requested.

(3) The airport operator must notify an individual that a final decision has
been made to grant or deny authority for unescorted access.

(h) Corrective action by the individual. The individual may contact the local jurisdiction responsible for the information and the FBI to complete or correct the information contained in his/her record before any final decision is made, subject to the following conditions:

(1) Within 30 days after being advised that the criminal record received from the FBI discloses disqualifying information, the individual must notify the airport operator, in writing, of his/her intent to correct any information believed to be inaccurate.

(ii) Upon notification by an individual that the record has been corrected, the airport operator must obtain a copy of the revised FBI record prior to making a final determination.

(2) If no notification is received within 30 days, the airport operator may make a final determination.

(i) Limits on dissemination of results. Criminal record information provided by the FBI must be used solely for the purposes of this section, and no person may disseminate the results of a criminal record check to anyone other than:

(1) The individual to whom the record pertains or that individual’s authorized representative;

(2) Airport officials with a need to know; and

(3) Others designated by the Administrator.

(j) Employment status while awaiting criminal record checks. Individuals who have submitted their fingerprints and are awaiting FBI results may perform work within the SIDA when under escort by someone who has unescorted SIDA access privileges.

(k) Recordkeeping. (1) Except when the airport operator has received a certification under paragraph (n)(1) of this section, the airport operator must physically maintain and control the Part 1 employment history investigation file until 180 days after the termination of the individual’s authority for unescorted access. The Part 1 employment history investigation file must consist of the following:

(i) The application;

(ii) The employment verification information obtained by the employer;

(iii) The names of those from whom the employment verification information was obtained;

(iv) The date and the method of how the contact was made; and

(v) Any other information as required by the Administrator.

(2) The airport operator must physically maintain, control and when appropriate destroy Part 2, the criminal record, for each individual for whom a fingerprint comparison has been completed. Part 2 must be maintained for 180 days after the termination of the individual’s authority for unescorted access. Only direct airport operator employees may carry out this criminal record file responsibility. The Part 2 criminal record file must consist of the following:

(i) The criminal record received from the FBI as a result of an individual’s fingerprint comparison; or

(ii) Information that the check was completed and no record exists.

(3) The files required by this section must be maintained in a manner that is acceptable to the Administrator and in a manner that protects the confidentiality of the individual.

(l) Continuing responsibilities. (1) Any individual authorized to have unescorted access privileges or who may authorize others to have unescorted access, who is subsequently convicted of any of the crimes listed in paragraph (b)(2) of this section, must, within 24 hours, report the conviction to the airport operator and surrender the SIDA access medium to the issuer.

(2) If information becomes available to the airport operator or the airport user indicating that an individual with unescorted access has a possible conviction for one of the disqualifying crimes in paragraph (b)(2) of this section, the airport operator must determine the status of the conviction. If a disqualifying conviction is confirmed the airport operator must withdraw any authority granted under this section.

(m) Exceptions. Notwithstanding the requirements of this section, an airport operator may authorize the following individuals to have unescorted access, or to authorize others to have unescorted access to the SIDA:
(1) An employee of the Federal government or a state or local government (including a law enforcement officer) who, as a condition of employment, has been subjected to an employment investigation which includes a criminal record check.

(2) A crewmember of a foreign air carrier covered by an alternate security arrangement in the foreign air carrier's approved security program.

(3) An individual who has been continuously employed in a position requiring unescorted access by another airport operator, airport user or air carrier.

(4) Those persons who have received access to a U.S. Customs secured area prior to November 23, 1998.

(n) Investigations by air carriers and airport users. An airport operator is in compliance with its obligation under paragraph (b) of this section, as applicable, when the airport operator accepts for each individual seeking unescorted access one of the following:

(1) Certification from an air carrier subject to §108.33 of this chapter indicating it has complied with §§108.33 of this chapter for the air carrier's employees and contractors seeking unescorted access; or

(2) Certification from an airport user indicating it has complied with and will continue to comply with the provisions listed in paragraph (p) of this section. The certification must include the name of each individual for whom the airport user has conducted an employment history investigation.

(o) Airport operator responsibility. The airport operator must:

(1) Prior to the acceptance of a certification from the airport user, the airport operator must conduct a preliminary review of the file for each individual listed on the certification to determine that Part 1 has been completed.

(2) Designate the airport security coordinator (ASC), in the security program, to be responsible for reviewing the results of the airport employees' and airport users' employment history investigations and for destroying the criminal record files when their maintenance is no longer required by paragraph (k)(2) of this section;

(3) Designate the ASC, in the security program, to serve as the contact to receive notification from individuals applying for unescorted access of their intent to seek correction of their FBI criminal record; and

(4) Audit the employment history investigations performed by the airport operator in accordance with this section and those investigations conducted by the airport users made by certification under paragraph (n)(2). The audit program must be set forth in the airport security program.

(p) Airport user responsibility.

(1) The airport user is responsible for reporting to the airport operator information, as it becomes available, which indicates an individual with unescorted access may have a conviction for one of the disqualifying crimes in paragraph (b)(2) of this section; and

(2) If the airport user offers certification to the airport operator under paragraph (n)(2) of this section, the airport user must for each individual for whom a certification is made:

(i) Conduct the employment history investigation, Part 1, in compliance with paragraph (c) of this section. The airport user must report to the airport operator if one of the conditions in paragraph (C)(5) of this section exist;

(ii) Maintain and control Part 1 of the employment history investigation file in compliance with paragraph (k) of this section, unless the airport operator decides to maintain and control Part 1 of the employment history investigation file;

(iii) Provide the airport operator and the FAA with access to each completed Part 1 employee history investigative file of those individuals listed on the certification; and

(iv) Provide either the name or title of the individual acting as custodian of the files, and the address of the location and the phone number at the location where the investigative files are maintained.

[Doc. No. 28859, 63 FR 51218, Sept. 24, 1998; 63 FR 60448, Nov. 9, 1998]
§ 108.4 Falsification.

No person may make, or cause to be made, any of the following:

(a) That person makes, or causes to be made, any of the following:

1. Provides false information, or fails to provide true information, to the Administrator or an authorized representative of the Administrator.

2. Falsifies or alters the signature of any person, or otherwise alters any record, report, or instrument kept, made, or used to show compliance under this part, or to exercise any privileges under this part.

(b) This part does not apply to helicopter or to all-cargo operations.


§ 108.3 Definitions.

The following are definitions of terms used in this part:

(a) Certificate holder means a person holding an FAA operating certificate when that person engages in scheduled passenger operations or public charter passenger operations or both.

(b) Passenger seating configuration means the total number of seats for which the aircraft is type certificated that can be made available for passenger use aboard a flight and includes that seat in certain airplanes which may be used by a representative of the Administrator to conduct flight checks but is available for revenue purposes on other occasions.

(c) Private charter means any charter for which the charterer engages the total capacity of an airplane for the carriage of:

1. Passengers in civil or military air movements conducted under contract with the Government of the United States of the Government of a foreign country; or

2. Passengers invited by the charterer, the cost of which is borne entirely by the charterer and not directly or indirectly by the individual passengers.

(d) Public charter means any charter that is not a private charter.

(e) Scheduled passenger operations means holding out to the public of air transportation service for passengers from identified air terminals at a set time announced by timetable or schedule published in a newspaper, magazine, or other advertising medium.

(f) Sterile area means an area to which access is controlled by the inspection of persons and property in accordance with an approved security program or a security program used in accordance with § 129.25.

[Authority: 49 U.S.C. 106(g), 5103, 40113, 40119, 44703-44705, 44707, 44901-44905, 44907, 44913-44914, 4503, 44935-44936, 46105.]

Source: Docket No. 108, 46 FR 3786, Jan. 15, 1981, unless otherwise noted.

§ 108.1 Applicability.

(a) This part prescribes aviation security rules governing—

1. The operations of holders of FAA air carrier operating certificates or operating certificates engaging in scheduled passenger operations or public charter passenger operations;

2. Each person aboard an airplane operated by a certificate holder described in paragraph (a)(1) of this section;

3. Each person on an airport at which the operations described in paragraph (a)(1) of this section are conducted;

4. Each certificate holder who receives a Security Directive or Information Circular and each person who receives information from a Security Directive or an Information Circular issued by the Director of Civil Aviation Security; and

5. Each person who files an application or makes entries into any record or report that is kept, made or used to show compliance under this part, or to exercise any privileges under this part.

(b) This part does not apply to helicopter or to all-cargo operations.

§ 108.5 Security program: Adoption and implementation.

(a) Each certificate holder shall adopt and carry out a security program that meets the requirements of § 108.7 for each of the following scheduled or public charter passenger operations:

(1) Each operation with an airplane having a passenger seating configuration of more than 60 seats.

(2) Each operation that provides deplaned passengers access, that is not otherwise controlled by a certificate holder using an approved security program or a foreign air carrier using a security program required by § 129.25, to a sterile area.

(3) Each operation with an airplane having a passenger seating configuration of more than 30 but less than 61 seats; except that those parts of the program effecting compliance with the requirements listed in § 108.7(b) (1), (2), and

(4) Need only be implemented when the Director of Civil Aviation Security or a designate of the Director notifies the certificate holder in writing that a security threat exists with respect to the operation.

(b) Each certificate holder that has obtained FAA approval for a security program for operations not listed in paragraph (a) of this section shall carry out the provisions of that program.

§ 108.7 Security program: Form, content, and availability.

(a) Each security program required by § 108.5 shall—

(1) Provide for the safety of persons and property traveling in air transportation and intrastate air transportation against acts of criminal violence and air piracy;

(2) Be in writing and signed by the certificate holder or any person delegated authority in this matter;

(3) Include the items listed in paragraph (b) of this section, as required by § 108.5; and

(4) Be approved by the Administrator.

(b) Each security program required by § 108.5 must include the following, as required by that section:

(1) The procedures and a description of the facilities and equipment used to perform the screening functions specified in § 108.9.

(2) The procedures and a description of the facilities and equipment used to perform the airplane and facilities control functions specified in § 108.13.

(3) The procedures used to comply with the applicable requirements of § 108.15 regarding law enforcement officers.

(4) The procedures used to comply with the requirements of § 108.17 regarding the use of X-ray systems.

(5) The procedures used to comply with the requirements of § 108.19 regarding bomb and air piracy threats.

(6) The procedures used to comply with the applicable requirements of § 108.10.

(7) The curriculum used to accomplish the training required by § 108.23.

(8) The procedures and a description of the facilities and equipment used to comply with the requirements of § 108.20 regarding explosives detection systems.

(c) Each certificate holder having an approved security program shall—

(1) Maintain at least one complete copy of the approved security program at its principal business office;

(2) Maintain a complete copy or the pertinent portions of its approved security program or appropriate implementing instructions at each airport where security screening is being conducted;

(3) Make these documents available for inspection upon request of any Civil Aviation Security Inspector;
§ 108.11 Carriage of weapons.

(a) No certificate holder required to conduct screening under a security program may permit any person to have, nor may any person have, on or about his or her person or property, a deadly or dangerous weapon, either concealed or unconcealed, accessible to him or her while aboard an airplane for which screening is required unless:

(1) The person having the weapon is—

(i) An official or employee of the United States, or a State or political subdivision of a State, or of a municipality who is authorized by his or her agency to have the weapon; or

(ii) Authorized to have the weapon by the certificate holder and the Administrator and has successfully completed a course of training in the use of firearms acceptable to the Administrator.

(2) The person having the weapon needs to have the weapon accessible in connection with the performance of his or her duty from the time he or she would otherwise check it in accordance with paragraph (d) of this section until

(b) Each certificate holder shall staff its security screening checkpoints with supervisory and non-supervisory personnel in accordance with the standards specified in its security program.

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the time it would be returned after deplaning.

(3) The certificate holder is notified—
   (i) Of the flight on which the armed person intends to have the weapon accessible to him or her at least 1 hour, or in an emergency as soon as practicable, before departure; and
   (ii) When the armed person is other than an employee or official of the United States, that there is a need for the weapon to be accessible to the armed person in connection with the performance of that person's duty from the time he or she would otherwise check it in accordance with paragraph (d) of this section until the time it would be returned to him or her after deplaning.

(4) The armed person identifies himself or herself to the certificate holder by presenting credentials that include his or her clear, full-face picture, his or her signature, and the signature of the authorizing official of his or her service or the official seal of his or her service. A badge, shield, or similar may not be used as the sole means of identification.

(5) The certificate holder—
   (i) Ensures that the armed person is familiar with its procedures for carrying a deadly or dangerous weapon aboard its airplane before the time the person boards the airplane;
   (ii) Ensures that the identity of the armed person is known to each law enforcement officer and each employee of the certificate holder responsible for security during the boarding of the airplane; and
   (iii) Notifies the pilot in command, other appropriate crewmembers, and any other person authorized to have a weapon accessible to him or her aboard the airplane of the location of each authorized armed person aboard the airplane.

(b) No person may, while on board an airplane operated by a certificate holder for which screening is not conducted, carry on or about that person a deadly or dangerous weapon, either concealed or unconcealed. This paragraph does not apply to—
   (1) Officials or employees of a municipality or a State, or of the United States, who are authorized to carry arms; or
   (2) Crewmembers and other persons authorized by the certificate holder to carry arms.

(c) No certificate holder may knowingly permit any person to transport, nor may any person transport or tender for transport, any explosive, incendiary or a loaded firearm in checked baggage aboard an airplane. For the purpose of this section, a loaded firearm means a firearm which has a live round of ammunition, cartridge, detonator, or powder in the chamber or in a clip, magazine, or cylinder inserted in it.

(d) No certificate holder may knowingly permit any person to transport, nor may any person transport or tender for transport, any unloaded firearm in checked baggage aboard an airplane unless—
   (1) The passenger declares to the certificate holder, either orally or in writing before checking the baggage, that any firearm carried in the baggage is unloaded;
   (2) The firearm is carried in a container the certificate holder considers appropriate for air transportation;
   (3) When the firearm is other than a shotgun, rifle, or other firearm normally fired from the shoulder position, the baggage in which it is carried is locked, and only the passenger checking the baggage retains the key or combination; and
   (4) The baggage containing the firearm is carried in an area, other than the flightcrew compartment, that is inaccessible to passengers.

(e) No certificate holder may serve any alcoholic beverage to a person having a deadly or dangerous weapon accessible to him or her nor may such person drink any alcoholic beverage while aboard an airplane operated by the certificate holder.

(f) Paragraphs (a), (b), and (d) of this section do not apply to the carriage of firearms aboard air carrier flights conducted for the military forces of the Government of the United States when the total cabin load of the airplane is under exclusive use by those military forces if the following conditions are met:
   (1) No firearm is loaded and all bolts to such firearms are locked in the open position; and
§ 108.17 Use of X-ray systems.

(a) No certificate holder may use an X-ray system within the United States to inspect carry-on or checked articles unless specifically authorized under a security program required by §108.5 of this part or use such a system contrary to its approved security program. The Administrator authorizes certificate holders to use X-ray systems for inspecting carry-on or checked articles under an approved security program if the certificate holder shows that—

(1) For a system manufactured before April 25, 1974, it meets either the guidelines issued by the Food and Drug Administration (FDA), Department of Health, Education, and Welfare (HEW)
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and published in the Federal Register (38 FR 21442, August 8, 1973); or the performance standards for cabinet X-ray systems designed primarily for the inspection of carry-on baggage issued by the FDA and published in 21 CFR 1020.40 (39 FR 12985, April 10, 1974);

(2) For a system manufactured after April 24, 1974, it meets the standards for cabinet X-ray systems designed primarily for the inspection of carry-on baggage issued by the FDA and published in 21 CFR 1020.40 (39 FR 12985, April 10, 1974);

(3) A program for initial and recurrent training of operators of the system is established, which includes training in radiation safety, the efficient use of X-ray systems, and the identification of weapons and other dangerous articles;

(4) Procedures are established to ensure that each operator of the system is provided with an individual personnel dosimeter (such as a film badge or thermoluminescent dosimeter). Each dosimeter used shall be evaluated at the end of each calendar month, and records of operator duty time and the results of dosimeter evaluations shall be maintained by the certificate holder;

and

(5) The system meets the imaging requirements set forth in an approved Air Carrier Security Program using the step wedge specified in American Society for Testing and Materials Standard F792-82.

(b) No certificate holder may use an X-ray system within the United States unless within the preceding 12 calendar months a radiation survey has been conducted which shows that the system meets the applicable performance standards in 21 CFR 1020.40 or guidelines published by the FDA in the Federal Register of August 8, 1973 (38 FR 21442).

(c) No certificate holder may use an X-ray system after the system is initially installed or after it has been moved from one location to another, unless a radiation survey is conducted which shows that the system meets the applicable performance standards in 21 CFR 1020.40 or guidelines published by the FDA in the Federal Register of August 8, 1973 (38 FR 21442) except that a radiation survey is not required for an X-ray system that is moved to another location if the certificate holder shows that the system is so designed that it can be moved without altering its performance.

(d) No certificate holder may use an X-ray system that is not in full compliance with any defect notice or modification order issued for that system by the FDA, unless that Administration has advised the FAA that the defect or failure to comply does not create a significant risk or injury, including genetic injury, to any person.

(e) No certificate holder may use an X-ray system to inspect carry-on or checked articles unless a sign is posted in a conspicuous place at the screening station and on the X-ray system which notifies passengers that such items are being inspected by an X-ray and advises them to remove all X-ray, scientific, and high-speed film from carry-on and checked articles before inspection. This sign shall also advise passengers that they may request that an inspection be made of their photographic equipment and film packages without exposure to an X-ray system. If the X-ray system exposes any carry-on or checked articles to more than 1 milliroentgen during the inspection, the certificate holder shall post a sign which advises passengers to remove film of all kinds from their articles before inspection. If requested by passengers, their photographic equipment and film packages shall be inspected without exposure to an X-ray system.

(f) Each certificate holder shall maintain at least one copy of the results of the most recent radiation survey conducted under paragraph (b) or (c) of this section and shall make it available for inspection upon request by the Administrator at each of the following locations:

(1) The certificate holder’s principal business office; and

(2) The place where the X-ray system is in operation.

(g) The American Society for Testing and Materials Standard F792-82, “Design and Use of Ionizing Radiation Equipment for the Detection of Items Prohibited in Controlled Access Areas,” described in this section is incorporated by reference, herein and made a part hereof pursuant to 5 U.S.C.
§ 108.18 Security Directives and Information Circulars.

(a) Each certificate holder required to have an approved security program for passenger operations shall comply with each Security Directive issued to the certificate holder by the Director of Civil Aviation Security, or by any person to whom the Director has delegated the authority to issue Security Directives, within the time prescribed in the Security Directive for compliance.

(b) Each certificate holder who receives a Security Directive shall—

(1) Not later than 24 hours after delivery by the FAA or within the time prescribed in the Security Directive, acknowledge receipt of the Security Directive;

(2) Not later than 72 hours after delivery by the FAA or within the time prescribed in the Security Directive, specify the method by which the certificate holder has implemented the measures in the Security Directive; and

(3) Ensure that information regarding the Security Directive and measures implemented in response to the Security Directive are distributed to specified personnel as prescribed in the Security Directive and to other personnel with an operational need to know.

(c) In the event that the certificate holder is unable to implement the measures contained in the Security Directive, the certificate holder shall submit proposed alternative measures, and the basis for submitting the alternative measures, to the Director of Civil Aviation Security for approval. The certificate holder shall submit proposed alternative measures within the time prescribed in the Security Directive. The certificate holder shall implement any alternative measures approved by the Director of Civil Aviation Security.

(d) Each certificate holder who receives a Security Directive or Information Circular and each person who receives information from a Security Directive or Information Circular shall—

(1) Restrict the availability of the Security Directive or Information Circular and information contained in the Security Directive or the Information Circular to those persons with an operational need to know; and

(2) Refuse to release the Security Directive or Information Circular and information regarding the Security Directive or Information Circular to persons other than those with an operational need to know without the prior written consent of the Director of Civil Aviation Security.

(Approved by the Office of Management and Budget under control number 2120-0098)

[Doc. No. 25953, 54 FR 29384, July 10, 1989]

§ 108.19 Security threats and procedures.

(a) Upon receipt of a specific and credible threat to the security of a flight, the certificate holder shall—

(1) Immediately notify the ground and in-flight security coordinators of the threat, any evaluation thereof, and any countermeasures to be applied; and

(2) Ensure that the in-flight security coordinator notifies the flight and cabin crewmembers of the threat, any evaluation thereof, and any countermeasures to be applied.

(b) Upon receipt of a bomb threat against a specific airplane, each certificate holder shall attempt to determine whether or not any explosive or incendiary is aboard the airplane involved by doing the following:

(1) Conducting a security inspection on the ground before the next flight or, if the airplane is in flight, immediately after its next landing.

(2) If the airplane is being operated on the ground, advising the pilot in
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Command to immediately submit the airplane for a security inspection.

(3) If the airplane is in flight, immediately advising the pilot in command of all pertinent information available so that necessary emergency action can be taken.

(c) Immediately upon receiving information that an act or suspected act of air piracy has been committed, the certificate holder shall notify the Administrator. If the airplane is in airspace under other than United States jurisdiction, the certificate holder shall also notify the appropriate authorities of the State in whose territory the airplane is located and, if the airplane is in flight, the appropriate authorities of the State in whose territory the airplane is to land. Notification of the appropriate air traffic controlling authority is sufficient action to meet this requirement.


§ 108.20 Use of explosives detection systems.

When the Administrator shall require by amendment under §108.25, each certificate holder required to conduct screening under a security program shall use an explosive detection system that has been approved by the Administrator to screen checked baggage on international flights in accordance with the certificate holder’s security program.

[Doc. No. 25956, 54 FR 36946, Sept. 5, 1989]

§ 108.21 Carriage of passengers under the control of armed law enforcement escorts.

(a) Except as provided in paragraph (e) of this section, no certificate holder required to conduct screening under a security program may carry a passenger in the custody of an armed law enforcement escort aboard an airplane for which screening is required unless—

(1) The armed law enforcement escort is an official or employee of the United States, of a State or political subdivision of a State, or a municipality who is required by appropriate authority to maintain custody and control over an individual aboard an airplane;

(2) The certificate holder is notified by the responsible government entity at least 1 hour, or in case of emergency as soon as possible, before departure—

(i) Of the identity of the passenger to be carried and the flight on which it is proposed to carry the passenger; and

(ii) Whether or not the passenger is considered to be in a maximum risk category;

(3) If the passenger is considered to be in a maximum risk category, that the passenger is under the control of at least two armed law enforcement escorts and no other passengers are under the control of those two law enforcement escorts;

(4) No more than one passenger who the certificate holder has been notified is in a maximum risk category is carried on the airplane;

(5) If the passenger is not considered to be in a maximum risk category, the passenger is under the control of at least two armed law enforcement escorts, and no more than two of these persons are carried under the control of any one law enforcement escort;

(6) The certificate holder is assured, prior to departure, by each law enforcement escort that—

(i) The officer is equipped with adequate restraining devices to be used in the event restraint of any passenger under the control of the escort becomes necessary; and

(ii) Each passenger under the control of a law enforcement escort is—

(A) Boarded before any other passengers when boarding at the airport where the flight originates and deplaned at the destination after all other deplaning passengers have deplaned;

(B) Seated in the rear-most passenger seat when boarding at the airport where the flight originates; and

(C) Seated in a seat that is neither located in any lounge area nor located next to or directly across from any exit; and
§ 108.25 Approval of security programs and amendments.

(a) Unless otherwise authorized by the Administrator, each certificate holder required to have a security program for a passenger operation shall submit its proposed security program to the Administrator for approval at least 90 days before the date of the intended passenger operations. Within 30 days after receiving the program, the Administrator either approves the program or notifies the certificate holder to modify the program to comply with the applicable requirements of this part. The certificate holder may petition the Administrator to reconsider the notice to modify within 30 days after receiving the notice, and, except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the Administrator.

(b) The Administrator may amend an approved security program if it is determined that safety and the public interest require the amendment, as follows:

(1) The Administrator notifies the certificate holder, in writing, of the proposed amendment, fixing a period of not less than 30 days within which it may submit written information, views, and arguments on the amendment.

(2) After considering all relevant material, the Administrator notifies the certificate holder of any amendment adopted or rescinds the notice. The amendment becomes effective not less than 30 days after the certificate holder receives the notice, unless the certificate holder petitions the Administrator to reconsider the amendment, in which case the effective date is stayed by the Administrator.

(3) If the Administrator finds that there is an emergency requiring immediate action with respect to safety in air transportation or in air commerce that makes the procedure in this paragraph impracticable or contrary to the...
§ 108.27 Evidence of compliance.

On request of the Administrator, each certificate holder shall provide evidence of compliance with this part and its approved security program.


§ 108.29 Standards for security oversight.

(a) Each certificate holder shall ensure that:

(1) Each person performing a security-related function for the certificate holder has knowledge of the provisions of this part 108, applicable Security Directives and Information Circulars promulgated pursuant to § 108.18, and the certificate holder’s security program to the extent that the performance of the function imposes a need to know.

(2) Daily, a Ground Security Coordinator at each airport:

(i) Reviews all security-related functions for effectiveness and compliance with this part, the certificate holder’s security program, and applicable Security Directives; and

(ii) Immediately initiates corrective action for each instance of noncompliance with this part, the certificate holder’s security program, and applicable Security Directives.

(b) The requirements prescribed in paragraph (a) of this section apply to all security-related functions performed for the certificate holder whether by a direct employee or a contractor employee.

[Doc. No. 26522, 56 FR 41425, Aug. 20, 1991]

§ 108.31 Employment standards for screening personnel.

(a) No certificate holder shall use any person to perform any screening function, unless that person has:

(1) A high school diploma, a General Equivalency Diploma, or a combination of education and experience which the certificate holder has determined to have equipped the person to perform the duties of the position;

(2) Basic aptitudes and physical abilities including color perception, visual and aural acuity, physical coordination, and motor skills to the following standards:

(i) Screeners operating X-ray equipment must be able to distinguish on the X-ray monitor the appropriate imaging standard specified in the certificate holder’s security program. Wherever the X-ray system displays colors, the operator must be able to perceive each color;

(ii) Screeners operating any screening equipment must be able to distinguish each color displayed on every type of screening equipment and explain what each color signifies;

(iii) Screeners must be able to hear and respond to the spoken voice and to audible alarms generated by screening equipment in an active checkpoint environment;

(iv) Screeners performing physical searches or other related operations must be able to efficiently and thoroughly manipulate and handle such baggage, containers, and other objects subject to security processing; and

(v) Screeners who perform pat-downs or hand-held metal detector searches of persons must have sufficient dexterity and capability to conduct those procedures on all parts of the persons’ bodies.

(3) The ability to read, speak, and write English well enough to:

(i) Carry out written and oral instructions regarding the proper performance of screening duties;
(ii) Read English language identification media, credentials, airline tickets, and labels on items normally encountered in the screening process;

(iii) Provide direction to and understand and answer questions from English-speaking persons undergoing screening; and

(iv) Write incident reports and statements and log entries into security records in the English language.

(4) Satisfactorily completed all initial, recurrent, and appropriate specialized training required by the certificate holder’s security program.

(b) Notwithstanding the provisions of paragraph (a)(4) of this section, the certificate holder may use a person during the on-the-job portion of training to perform security functions provided that the person is closely supervised and does not make independent judgments as to whether persons or property may enter a sterile area or aircraft without further inspection.

(c) No certificate holder shall use a person to perform a screening function after that person has failed an operational test related to that function until that person has successfully completed the remedial training specified in the certificate holder’s security program.

(d) Each certificate holder shall ensure that a Ground Security Coordinator conducts and documents an annual evaluation of each person assigned screening duties and may continue that person’s employment in a screening capacity only upon the determination by that Ground Security Coordinator that the person:

(1) Has not suffered a significant diminution of any physical ability required to perform a screening function since the last evaluation of those abilities;

(2) Has a satisfactory record of performance and attention to duty; and

(3) Demonstrates the current knowledge and skills necessary to courteous, vigilantly, and effectively perform screening functions.

(e) Paragraphs (a) through (d) of this section do not apply to those screening functions conducted outside the United States over which the certificate holder has operational control over a screening function, the certificate holder may use screeners who do not meet the requirements of paragraph (a)(3) of this section, provided that at least one representative of the certificate holder who has the ability to functionally read and speak English is present while the certificate holder’s passengers are undergoing security processing.

[Doc. No. 26522, 56 FR 41425, Aug. 20, 1991]

§ 108.33 Employment history, verification and criminal history records checks.

(a) Scope. The following persons are within the scope of this section:

(1) Each employee or contractor covered under a certification made to an airport operator, pursuant to §107.31(n) of this chapter, made on or after November 23, 1998.

(2) Each individual issued air carrier identification media that one or more airports accepts as airport approved media for unescorted access within a security identification display area (SIDA) as described in §107.25 of this chapter.

(3) Each individual assigned, after November 23, 1998, to perform the following functions:

(i) Screen passengers or property that will be carried in a cabin of an aircraft of an air carrier required to screen passengers under this part.

(ii) Serve as an immediate supervisor (checkpoint security supervisor (CSS)), or the next supervisory level (shift or site supervisor), to those individuals described in paragraph (a)(3)(i) of this section.

(b) Employment history investigations required. Each air carrier must ensure that, for each individual described in paragraph (a) of this section, the following requirements are met:

(i) Screen passengers or property that will be carried in a cabin of an aircraft of an air carrier required to screen passengers under this part.

(ii) Serve as an immediate supervisor (checkpoint security supervisor (CSS)), or the next supervisory level (shift or site supervisor), to those individuals described in paragraph (a)(3)(i) of this section.

(b) Employment history investigations required. Each air carrier must ensure that, for each individual described in paragraph (a) of this section, the following requirements are met:

(1) The individual has satisfactorily undergone Part 1 of an employment history investigation. Part 1 consists of a review of the previous 10 years of employment history and verifications of the 5 employment years preceding the date the employment history investigation is initiated as provided in §107.25 of this chapter.

(2) If required by paragraph (c)(5) of this section, the individual has satisfied Part 2 of the employment history investigation.

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investigation. Part 2 is the process to determine if the individual has a criminal record. To satisfy Part 2 of the investigation the criminal records check must not disclose that the individual has been convicted or found not guilty by reason of insanity, in any jurisdiction, during the 10 years ending on the date of such investigation, of any of the crimes listed below:

(i) Forgery of certificates, false marking of aircraft, and other aircraft registration violation, 49 U.S.C. 46306;
(ii) Interference with air navigation, 49 U.S.C. 46308;
(iii) Improper transportation of a hazardous material, 49 U.S.C. 46312;
(iv) Aircraft piracy, 49 U.S.C. 46502;
(v) Interference with flightcrew members or flight attendants, 49 U.S.C. 46504;
(vi) Commission of certain crimes aboard aircraft in flight, 49 U.S.C. 46505;
(vii) Carrying a weapon or explosive aboard aircraft, 49 U.S.C. 46507;
(viii) Conveying false information and threats, 49 U.S.C. 46507;
(ix) Aircraft piracy outside the special aircraft jurisdiction of the United States, 49 U.S.C. 46502(b);
(x) Lighting violations involving transporting controlled substances, 49 U.S.C. 46315;
(xi) Unlawful entry into an aircraft or airport area that serves air carriers or foreign air carriers contrary to established security requirements, 49 U.S.C. 46314;
(xii) Destruction of an aircraft or aircraft facility, 18 U.S.C. 32;
(xiii) Murder;
(xiv) Assault with intent to murder;
(xv) Espionage;
(xvi) Sedition;
(xvii) Kidnapping or hostage taking;
(xviii) Treason;
(xix) Rape or aggravated sexual abuse;
(xx) Unlawful possession, use, sale, distribution, or manufacture of an explosive or weapon;
(xxi) Extortion;
(xxii) Armed robbery;
(xxiii) Distribution of, or intent to distribute, a controlled substance;
(xxiv) Felony arson; or
(xxv) Conspiracy or attempt to commit any of the aforementioned criminal acts.

(c) Investigative steps. Part 1 of the employment history investigations must be completed on all persons described in paragraph (a) of this section. If required by paragraph (c)(5) of this section, Part 2 of the employment history investigation must also be completed on all persons listed in paragraph (a) of this section.

(1) The individual must provide the following information on an application:

(i) The individual’s full name, including any aliases or nicknames;
(ii) The dates, names, phone numbers, and addresses of previous employers, with explanations for any gaps in employment of more than 12 consecutive months, during the previous 10-year period;
(iii) Any convictions during the previous 10-year period of the crimes listed in paragraph (b)(2) of this section.

(2) The air carrier must include on the application form a notification that the individual will be subject to an employment history verification and possibly a criminal records check.

(3) The air carrier must verify the identity of the individual through the presentation of two forms of identification, one of which must bear the individual’s photograph.

(4) The air carrier must verify the information on the most recent 5 years of employment history required under paragraph (c)(1)(ii) of this section. Information must be verified in writing, by documentation, by telephone, or in person.

(5) If one or more of the conditions (triggers) listed in §108.33(c)(5)(i) through (iv) exist, the employment history investigation must not be considered complete unless Part 2 is accomplished. Only the air carrier may initiate Part 2. Part 2 consists of a comparison of the individual’s fingerprints against the fingerprint files of known criminals maintained by the Federal Bureau of Investigation (FBI). The comparison of the individual’s fingerprints must be processed through the FAA. The air carrier may request a check of the individual’s fingerprint-
based criminal record only if one or more of the following conditions exist:

(i) The individual does not satisfactorily account for a period of unemployment of 12 consecutive months or more during the previous 10-year period.

(ii) The individual is unable to support statements made on the application form.

(iii) There are significant inconsistencies in the information provided on the application.

(iv) Information becomes available to the air carrier during the investigation indicating a possible conviction for one of the crimes listed in paragraph (b)(2) of this section.

(d) Individual notification. Prior to commencing the criminal records check, the air carrier must notify the affected individuals and identify a point of contact for follow-up. An individual who chooses not to submit fingerprints may not be granted unescorted access privilege and may not be allowed to hold screener or screener supervisory positions.

(e) Fingerprint processing. If a fingerprint comparison is necessary under paragraph (c)(5) of this section to complete the employment history investigation the air carrier must collect and process fingerprints in the following manner:

(1) One set of legible and classifiable fingerprints must be recorded on fingerprint cards approved by the FBI and distributed by the FAA for this purpose.

(2) The fingerprints must be obtained from the individual under direct observation by the air carrier or a law enforcement officer. Individuals submitting their fingerprints must not take possession of their fingerprint card after they have been fingerprinted.

(3) The identity of the individual must be verified at the time fingerprints are obtained. The individual must present two forms of identification, one of which must bear the individual’s photograph.

(4) The fingerprint card must be forwarded to FAA at the location specified by the Administrator.

(5) Fees for the processing of the criminal records checks are due upon application. Air carriers must submit payment through corporate check, cashier’s check, or money order made payable to “U.S. FAA,” at the designated rate for each fingerprint card. Combined payment for multiple applications is acceptable. The designated rate for processing the fingerprint cards is available from the local FAA security office.

(f) Determination of arrest status. In conducting the criminal record checks required by this section, the air carrier must not consider the employment history investigation complete unless it investigates arrest information for the crimes listed in paragraph (b)(2) of this section for which no disposition has been recorded and makes a determination that the arrest did not result in a disqualifying conviction.

(g) Availability and correction of FBI records and notification of disqualification. (1) At the time Part 2 is initiated and the fingerprints are collected, the air carrier must notify the individual that a copy of the criminal record received from the FBI will be made available to the individual if requested in writing. When requested in writing, the air carrier must make available to the individual a copy of any criminal record received from the FBI.

(2) Prior to making a final decision to deny authorization to an individual described in paragraph (a) of this section, the air carrier must advise the individual that the FBI criminal record discloses information that would disqualify him/her from positions covered under this rule and provide him/her with a copy of their FBI record if requested.

(3) The air carrier must notify an individual that a final decision has been made to forward or not forward a letter of certification for unescorted access to the airport operator, or to grant or deny the individual authority to perform screening functions listed under paragraph (a)(3) of this section.

(h) Corrective action by the individual. The individual may contact the local jurisdiction responsible for the information and the FBI to complete or correct the information contained in his/her record before the air carrier makes any decision to withhold his/her name.
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from a certification, or not grant authorization to perform screening functions subject to the following conditions:

(1) Within 30 days after being advised that the criminal record received from the FBI discloses disqualifying information, the individual must notify the air carrier, in writing, of his/her intent to correct any information believed to be inaccurate.

(2) Upon notification by an individual that the record has been corrected, the air carrier must obtain a copy of the revised FBI record prior to making a final determination.

(3) If no notification is received within 30 days, the air carrier may make a final determination.

(4) Limits on dissemination of results. Criminal record information provided by the FBI must be used solely for the purposes of this section, and no person may disseminate the results of a criminal record check to anyone other than:

(1) The individual to whom the record pertains or that individual's authorized representative;
(2) Air carrier officials with a need to know; and
(3) Others designated by the Administrator.

(5) Employment status while awaiting criminal record checks. Individuals who have submitted their fingerprints and are awaiting FBI results may perform work details under the following conditions:

(1) Those seeking unescorted access to the SIDA must be escorted by someone who has unescorted SIDA access privileges;
(2) Those applicants seeking positions covered under paragraphs (a)(3) and (a)(4) of this section, may not exercise any independent judgments regarding those functions.

(6) Recordkeeping. (1) The air carrier must physically maintain and control Part 1 employment history investigation file until 180 days after the termination of the individual's authority for unescorted access or termination from positions covered under paragraph (a)(3) of this section. Part 1 of the employment history investigation file must consist of the following:

(i) The application;
(ii) The employment verification information obtained by the employer;
(iii) The names of those from whom the employment verification information was obtained;
(iv) The date and the method of how the contact was made; and
(v) Any other information as required by the Administrator.

(2) The air carrier must physically maintain, control and when appropriate destroy Part 2, the criminal record file, for each individual for whom a fingerprint comparison has been made. Part 2 must be maintained for 180 days after the termination of the individual's authority for unescorted access or after the individual ceases to perform screening functions. Only direct air carrier employees may carry out Part 2 responsibilities. Part 2 must consist of the following:

(i) The results of the record check; or
(ii) Certification from the air carrier that the check was completed and did not uncover a disqualifying conviction.

(3) The files required by this paragraph must be maintained in a manner that is acceptable to the Administrator and in a manner that protects the confidentiality of the individual.

(7) Continuing responsibilities. (1) Any individual authorized to have unescorted access privilege to the SIDA or who performs functions covered under paragraph (a)(3) of this section, who is subsequently convicted of any of the crimes listed in paragraph (b)(2) of this section must, within 24 hours, report the conviction to the air carrier and surrender the SIDA access medium or any employment related identification medium to the issuer.

(2) If information becomes available to the air carrier indicating that an individual has a possible conviction for one of the disqualifying crimes in paragraph (b)(2) of this section, the air carrier must determine the status of the conviction and, if the conviction is confirmed:

(i) Immediately revoke access authorization for unescorted access to the SIDA; or
(ii) Immediately remove the individual from screening functions covered under paragraph (a)(3) of this section.

(m) Air carrier responsibility. The air carrier must:

1. Designate an individual(s), in the security program, to be responsible for maintaining employment history investigation for those whom the air carrier has made a certification to an airport operator under §107.31(n)(1) of this chapter and for destroying the criminal record files when their maintenance is no longer required by paragraph (k)(2) of this section.

2. Designate individual(s), in the security program, to maintain and control Part 1 of the employment history investigations of screeners whose files must be maintained at the location or station where the screener is performing his or her duties.

3. Designate individual(s), in the security program, to serve as the contact to receive notification from an individual applying for either unescorted access or those seeking to perform screening functions of his or her intent to seek correction of his or her criminal record with the FBI.

4. Designate an individual(s), in the security program, to maintain and control Part 2 of the employment history investigation file for all employees, contractors, or others who undergo fingerprint comparison at the request of the air carrier.

5. Audit the employment history investigations performed in accordance with this section. The audit process must be set forth in the air carrier approved security program.

PART 109—INDIRECT AIR CARRIER SECURITY

§ 109.1 Applicability.

(a) This part prescribes aviation security rules governing each air carrier, including each air freight forwarder and each cooperative shippers’ association, engaged indirectly in air transportation of property;

(b) For the purposes of this part, property means any package cargo.

[Doc. No. 19840, 44 FR 72345, Dec. 13, 1979]

§ 109.3 Security program.

(a) Each indirect air carrier shall adopt and carry out a security program that—

1. Is designed to prevent or deter the unauthorized introduction of any explosive or incendiary device into any package cargo intended for carriage by air;

2. Is in writing and signed by the carrier or any person delegated authority in this matter;

3. Includes a system of security safeguards acceptable to the Administrator; and

4. Has been approved by the Administrator.

(b) Each indirect air carrier shall maintain at least one complete copy of its security program at its principal business office, and a complete copy or the pertinent portions of its security program or appropriate implementing instructions at each office where package cargo is accepted, and shall make those documents available for inspection upon request of any Civil Aviation Security Special Agent.

(c) Each indirect air carrier shall—

1. Restrict the distribution, disclosure, and availability of sensitive security information, as defined in part 191 of this chapter, to persons with a need-to-know; and

2. Refer requests for sensitive security information by other persons to the Assistant Administrator for Civil Aviation Security.

§ 109.5 Approval of security programs and amendments.

(a) Each indirect air carrier shall submit its security program to the Administrator for approval. Each carrier engaged in the air transportation of property before December 13, 1979, shall submit its program no later than January 14, 1980. Each carrier not engaged in air transportation or intrastate air transportation of property before December 13, 1979, shall submit its program at least 30 days before the date it intends to engage in that transportation.

(b) Within 30 days after receipt of the program, the Administrator either approves the program or notifies the carrier as to modifications necessary for the program to comply with this part.

(c) Any person notified pursuant to paragraph (b) of this section may petition the Administrator to reconsider the notice to modify within 30 days after receipt of the notice and, except in the case of any emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the Administrator.

(d) The Administrator may order amendment of an approved security program, if it is determined that safety and the public interest require the amendment, as follows:

(1) The Administrator notifies the carrier, in writing, of the proposed amendment, fixing a period of not less than 30 days within which it may submit written information, views, and arguments on the amendment.

(2) After considering all relevant material, the Administrator notifies the carrier of any amendment adopted, or rescinds the notice of the proposed amendment. The amendment becomes effective not less than 30 days after such person receives the notice, unless it petitions the Administrator to reconsider the amendment, in which case the effective date is stayed by the Administrator.

(3) If the Administrator finds that there is an emergency requiring immediate action with respect to safety in air transportation or in air commerce that makes the procedure in this paragraph impracticable or contrary to the public interest he may issue an amendment, effective on the date the carrier receives notice of it, and not subject to stay. In such a case, the Administrator incorporates the findings and a brief statement of the reasons for it, in the notice of the amendment to be adopted.

(e) A carrier may submit a request to the Administrator to amend its program. The application must be filed with the Administrator at least 30 days before the date it proposes for the amendment to become effective, unless a shorter period is allowed by the Administrator. Within 15 days after receipt of a proposed amendment, the Administrator either approves or denies the request. Within 30 days after receiving from the Administrator a notice of refusal to approve the application for amendment, the applicant may petition the Administrator to reconsider the refusal to amend.
SUBCHAPTER G—AIR CARRIERS AND OPERATORS FOR COMPENSATION OR HIRE: CERTIFICATION AND OPERATIONS

PART 119—CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

SPECIAL FEDERAL AVIATION REGULATIONS
SFAR No. 78 [NOTE]

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AUTHORITY: 49 U.S.C. 106(g), 1153, 40101, 40102, 40103, 40113, 44105, 44106, 44111, 44701-44717, 44722, 44901, 44903, 44904, 44906, 44912, 44914, 44938, 44939, 40102, 40103, 40105.

SOURCE: Docket No. 28154, 60 FR 65913, Dec. 20, 1995, unless otherwise noted.

SPECIAL FEDERAL AVIATION REGULATIONS
SFAR No. 78

NOTE: For the text of SFAR No. 78, see part 91 of this chapter.

Subpart A—General

§ 119.1 Applicability.
(a) This part applies to each person operating or intending to operate civil aircraft—
(1) As an air carrier or commercial operator, or both, in air commerce; or
(2) When common carriage is not involved, in operations of U.S.-registered civil airplanes with a seat configuration of 20 or more passengers, or a maximum payload capacity of 6,000 pounds or more.
(b) This part prescribes—
(1) The types of air operator certificates issued by the Federal Aviation
§ 119.2 Compliance with 14 CFR part 119 or SFAR 38-2 of parts 121 and 135 of this chapter.

(a) Each certificate holder that before January 19, 1996, was issued an air carrier certificate or operating certificate and operations specifications requirements of SFAR 50-2 of this part and SFAR 38-2 of 14 CFR part 121 or 14 CFR part 119, as applicable, apply;
under the requirements of part 121, 135, or SFAR 38-2 of parts 121 and 135 of this chapter shall continue to comply with SFAR 38-2 of parts 121 and 135 of this chapter until March 20, 1997, or until the date on which the certificate holder is issued operations specifications in accordance with part 119, whichever occurs first. In addition, persons conducting operations under SFAR 38-2 of parts 121 and 135 of this chapter shall continue to comply with the applicable requirements of §§ 121.6, 121.57, 121.59, 121.61, 121.71 through 121.83, 135.5, 135.11(c), 135.15, 135.17, 135.27, 135.29, 135.33, 135.35, 135.37, and 135.39 of this chapter as in effect on January 18, 1996, until March 20, 1997, or until the date on which the certificate holder is issued operations specifications in accordance with part 119, whichever occurs first. If a certificate holder is issued operations specifications in accordance with part 119 before March 20, 1997, then, notwithstanding all provisions in SFAR 38-2 of parts 121 and 135 of this chapter, such certificate holder shall comply with the provisions of part 119.

A copy of these regulations may be obtained from the Federal Aviation Administration, Office of Rulemaking (ARM), 800 Independence Ave., SW., Washington, DC 20591, or by phone (202) 267-9677.

§ 119.3 Definitions.

For the purpose of subchapter G of this chapter, the term—

All-cargo operation means any operation for compensation or hire that is other than a passenger-carrying operation or, if passengers are carried, they are only those specified in §§ 121.583(a) or 135.85 of this chapter.

Certificate-holding district office means the Flight Standards District Office that has responsibility for administering the certificate and is charged with the overall inspection of the certificate holder’s operations.

Commuter operation means any scheduled operation conducted by any person operating one of the following types of aircraft with a frequency of operations of at least five round trips per week on at least one route between two or more points according to the published flight schedules:

(1) Airplanes, other than turbojet powered airplanes, having a maximum passenger-seat configuration of 9 seats or less, excluding each crewmember seat, and a maximum payload capacity of 7,500 pounds or less; or

(2) Rotorcraft.

Direct air carrier means a person who provides or offers to provide air transportation and who has control over the operational functions performed in providing that transportation.

Domestic operation means any scheduled operation conducted by any person operating any airplane described in paragraph (1) of this definition at locations described in paragraph (2) of this definition:

(1) Airplanes:

(i) Turbojet-powered airplanes;

(ii) Airplanes having a passenger-seat configuration of more than 9 passenger seats, excluding each crewmember seat; or

(iii) Airplanes having a payload capacity of more than 7,500 pounds.

(2) Locations:

(i) Between any points within the 48 contiguous States of the United States or the District of Columbia; or

(ii) Operations solely within the 48 contiguous States of the United States or the District of Columbia; or

(iii) Operations entirely within any State, territory, or possession of the United States; or

(iv) When specifically authorized by the Administrator, operations between any point within the 48 contiguous States of the United States or the District of Columbia and any specifically authorized point located outside the 48 contiguous States of the United States or the District of Columbia.

Empty weight means the weight of the airframe, engines, propellers, rotors, and fixed equipment. Empty weight excludes the weight of the crew and payload, but includes the weight of all
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fixed ballast, unusable fuel supply, undrainable oil, total quantity of engine coolant, and total quantity of hydraulic fluid.

Flag operation means any scheduled operation conducted by any person operating any airplane described in paragraph (1) of this definition at the locations described in paragraph (2) of this definition:

(1) Airplanes:
   (i) Turbojet-powered airplanes;
   (ii) Airplanes having a passenger-seat configuration of more than 9 passenger seats, excluding each crewmember seat; or
   (iii) Airplanes having a payload capacity of more than 7,500 pounds.
(2) Locations:
   (i) Between any point within the State of Alaska or the State of Hawaii or any territory or possession of the United States and any point outside the State of Alaska or the State of Hawaii or any territory or possession of the United States, respectively; or
   (ii) Between any point within the 48 contiguous States of the United States or the District of Columbia and any point outside the 48 contiguous States of the United States and the District of Columbia.
   (iii) Between any point outside the U.S. and another point outside the U.S.

Justifiable aircraft equipment means any equipment necessary for the operation of the aircraft. It does not include equipment or ballast specifically installed, permanently or otherwise, for the purpose of altering the empty weight of an aircraft to meet the maximum payload capacity.

Kind of operation means one of the various operations a certificate holder is authorized to conduct, as specified in its operations specifications, i.e., domestic, flag, supplemental, commuter, or on-demand operations.

Maximum payload capacity means:

(1) For an aircraft for which a maximum zero fuel weight is prescribed in FAA technical specifications, the maximum zero fuel weight, less empty weight, less all justifiable aircraft equipment, and less the operating load (consisting of minimum flightcrew, foods and beverages, and supplies and equipment related to foods and beverages, but not including disposable fuel or oil).
(2) For all other aircraft, the maximum certificated takeoff weight of an aircraft, less the empty weight, less all justifiable aircraft equipment, and less the operating load (consisting of minimum fuel load, oil, and flightcrew). The allowance for the weight of the crew, oil, and fuel is as follows:
   (i) Crew—for each crewmember required by the Federal Aviation Regulations—
      (A) For male flight crewmembers—180 pounds.
      (B) For female flight crewmembers—140 pounds.
      (C) For male flight attendants—180 pounds.
      (D) For female flight attendants—130 pounds.
      (E) For flight attendants not identified by gender—140 pounds.
   (ii) Oil—350 pounds or the oil capacity as specified on the Type Certificate Data Sheet.
   (iii) Fuel—the minimum weight of fuel required by the applicable Federal Aviation Regulations for a flight between domestic points 174 nautical miles apart under VFR weather conditions that does not involve extended overwater operations.

Maximum zero fuel weight means the maximum permissible weight of an aircraft with no disposable fuel or oil. The zero fuel weight figure may be found in either the aircraft type certificate data sheet, the approved Aircraft Flight Manual, or both.

Noncommon carriage means an aircraft operation for compensation or hire that does not involve a holding out to others.

On-demand operation means any operation for compensation or hire that is one of the following:

(1) Passenger-carrying operations conducted as a public charter under part 380 of this title or any operations in which the departure time, departure location, and arrival location are specifically negotiated with the customer or the customer’s representative that are any of the following types of operations:
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(i) Common carriage operations conducted with airplanes, including turbojet-powered airplanes, having a passenger-seat configuration of 30 seats or fewer, excluding each crewmember seat, and a payload capacity of 7,500 pounds or less, except that operations using a specific airplane that is also used in domestic or flag operations and that is so listed in the operations specifications as required by §119.49(a)(4) for those operations are considered supplemental operations.

(ii) Noncommon or private carriage operations conducted with airplanes having a passenger-seat configuration of less than 20 seats, excluding each crewmember seat, and a payload capacity of less than 6,000 pounds; or

(iii) Any rotorcraft operation.

(2) Scheduled passenger-carrying operations conducted with one of the following types of aircraft with a frequency of operations of less than five round trips per week on at least one route between two or more points according to the published flight schedules:

(i) Airplanes, other than turbojet powered airplanes, having a maximum passenger-seat configuration of 9 seats or less, excluding each crewmember seat, and a maximum payload capacity of 7,500 pounds or less; or

(ii) Rotorcraft.

(3) All-cargo operations conducted with airplanes having a payload capacity of 7,500 pounds or less, or with rotorcraft.

Passenger-carrying operation means any aircraft operation carrying any person, unless the only persons on the aircraft are those identified in §§121.583(a) or 135.85 of this chapter, as applicable. An aircraft used in a passenger-carrying operation may also carry cargo or mail in addition to passengers.

Principal base of operations means the primary operating location of a certificate holder as established by the certificate holder.

Provisional airport means an airport approved by the Administrator for use by a certificate holder for the purpose of providing service to a community when the regular airport used by the certificate holder is not available.

Regular airport means an airport used by a certificate holder in scheduled operations and listed in its operations specifications.

Scheduled operation means any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier or commercial operator for which the certificate holder or its representative offers in advance the departure location, departure time, and arrival location. It does not include any passenger-carrying operation that is conducted as a public charter operation under part 380 of this title.

Supplemental operation means any common carriage operation for compensation or hire conducted with any airplane described in paragraph (1) of this definition that is a type of operation described in paragraph (2) of this definition:

(1) Airplanes:

(i) Airplanes having a passenger-seat configuration of more than 30 seats, excluding each crewmember seat;

(ii) Airplanes having a payload capacity of more than 7,500 pounds; or

(iii) Each propeller-powered airplane having a passenger-seat configuration of more than 9 seats and less than 31 seats, excluding each crewmember seat, that is also used in domestic or flag operations and that is so listed in the operations specifications as required by §119.49(a)(4) for those operations; or

(iv) Each turbojet powered airplane having a passenger seat configuration of 1 or more and less than 31 seats, excluding each crewmember seat, that is also used in domestic or flag operations and that is so listed in the operations specifications as required by §119.49(a)(4) for those operations.

(2) Types of operation:

(i) Operations for which the departure time, departure location, and arrival location are specifically negotiated with the customer or the customer’s representative;

(ii) All-cargo operations; or

(iii) Passenger-carrying public charter operations conducted under part 380 of this title.

Wet lease means any leasing arrangement whereby a person agrees to provide an entire aircraft and at least one
§ 119.5 Certifications, authorizations, and prohibitions.

(a) A person authorized by the Administrator to conduct operations as a direct air carrier will be issued an Air Carrier Certificate.

(b) A person who is not authorized to conduct direct air carrier operations, but who is authorized by the Administrator to conduct operations as a U.S. commercial operator, will be issued an Operating Certificate.

(c) A person who is not authorized to conduct direct air carrier operations, but who is authorized by the Administrator to conduct operations when common carriage is not involved as an operator of U.S.-registered civil airplanes with a seat configuration of 20 or more passengers, or a maximum payload capacity of 6,000 pounds or more, will be issued an Operating Certificate.

(d) A person authorized to engage in common carriage under part 121 or part 135 of this chapter, or both, shall be issued only one certificate authorizing such common carriage, regardless of the kind of operation or the class or size of aircraft to be operated.

(e) A person authorized to engage in noncommon or private carriage under part 125 or part 135 of this chapter, or both, shall be issued only one certificate authorizing such carriage, regardless of the kind of operation or the class or size of aircraft to be operated.

(f) A person conducting operations under more than one paragraph of §119.21, 119.23, or 119.25 shall conduct those operations in compliance with—

(1) The requirements specified in each paragraph of those sections for the kind of operation conducted under that paragraph; and

(2) The appropriate authorizations, limitations, and procedures specified in the operations specifications for each kind of operation.

(g) No person may operate as a direct air carrier or as a commercial operator without, or in violation of, an appropriate certificate and appropriate operations specifications. No person may operate as a direct air carrier or as a commercial operator in violation of any deviation or exemption authority, if issued to that person or that person’s representative.

(h) A person holding an Operating Certificate authorizing noncommon or private carriage operations shall not conduct any operations in common carriage. A person holding an Air Carrier Certificate or Operating Certificate authorizing common carriage operations shall not conduct any operations in noncommon carriage.

(i) No person may operate as a direct air carrier without holding appropriate economic authority from the Department of Transportation.

(j) A certificate holder under this part may not operate aircraft under part 121 or part 135 of this chapter in a geographical area unless its operations specifications specifically authorize the certificate holder to operate in that area.

(k) No person may advertise or otherwise offer to perform an operation subject to this part unless that person is authorized by the Federal Aviation Administration to conduct that operation.

(l) No person may operate an aircraft under this part, part 121 of this chapter, or part 135 of this chapter in violation of an air carrier operating certificate, operating certificate, or appropriate operations specifications issued under this part.


§ 119.7 Operations specifications.

(a) Each certificate holder’s operations specifications must contain—
§ 119.21 Commercial operators engaged in intrastate common carriage and direct air carriers.

(a) Each person who conducts airplane operations as a commercial operator engaged in intrastate common carriage of persons or property for compensation or hire in air commerce, or as a direct air carrier, shall comply with the certification and operations specifications requirements in subpart C of this part, and shall conduct its:

(1) Domestic operations in accordance with the applicable requirements of part 121 of this chapter, and shall be issued operations specifications for those operations in accordance with those requirements. However, based on a showing of safety in air commerce, the Administrator may permit persons who conduct domestic operations between any point located within any of the following Alaskan islands and any point in the State of Alaska to comply with the requirements applicable to flag operations contained in subpart U of part 121 of this chapter:

(i) The Aleutian Islands.

(ii) The Pribilof Islands.

(iii) The Shumagin Islands.

(2) Flag operations in accordance with the applicable requirements of part 121 of this chapter, and shall be issued operations specifications for those operations in accordance with those requirements.

(3) Supplemental operations in accordance with the applicable requirements of part 121 of this chapter, and shall be issued operations specifications for those operations in accordance with those requirements.

(4) Commuter operations in accordance with the applicable requirements of part 135 of this chapter, and shall be issued operations specifications for those operations in accordance with those requirements.

(5) On-demand operations in accordance with the applicable requirements of part 135 of this chapter, and shall be issued operations specifications for those operations in accordance with those requirements.

(b) Persons who are subject to the requirements of paragraph (a)(4) of this section may conduct those operations in accordance with the requirements of paragraph (a)(1) or (a)(2) of this section, provided they obtain authorization from the Administrator.

(c) Persons who are subject to the requirements of paragraph (a)(5) of this section may conduct those operations in accordance with the requirements of
§ 119.23 Operators engaged in passenger-carrying operations, cargo operations, or both with airplanes when common carriage is not involved.

(a) Each person who conducts operations when common carriage is not involved with airplanes having a passenger-seat configuration of 20 seats or more, excluding each crewmember seat, or a payload capacity of 6,000 pounds or more, shall, unless deviation authority is issued—

(1) Comply with the certification and operations specifications requirements of part 125 of this chapter;

(2) Conduct its operations with those airplanes in accordance with the requirements of part 125 of this chapter; and

(3) Be issued operations specifications in accordance with those requirements.

(b) Each person who conducts non-common carriage (except as provided in §91.501(b) of this chapter) or private carriage operations for compensation or hire with airplanes having a passenger-seat configuration of less than 20 seats, excluding each crewmember seat, and a payload capacity of less than 6,000 pounds shall—

(1) Comply with the certification and operations specifications requirements in subpart C of this part;

(2) Conduct those operations in accordance with the requirements of part 135 of this chapter, except for those requirements applicable only to commuter operations; and

(3) Be issued operations specifications in accordance with those requirements.

§ 119.25 Rotorcraft operations: Direct air carriers and commercial operators.

Each person who conducts rotorcraft operations for compensation or hire must comply with the certification and operations specifications requirements of Subpart C of this part, and shall conduct its:

(a) Commuter operations in accordance with the applicable requirements of part 135 of this chapter, and shall be issued operations specifications for those operations in accordance with those requirements.

(b) On-demand operations in accordance with the applicable requirements of part 135 of this chapter, and shall be issued operations specifications for those operations in accordance with those requirements.

Subpart C—Certification, Operations Specifications, and Certain Other Requirements for Operations Conducted Under Part 121 or Part 135 of This Chapter

§ 119.31 Applicability.

This subpart sets out certification requirements and prescribes the content of operations specifications and certain other requirements for operations conducted under part 121 or part 135 of this chapter.

§ 119.33 General requirements.

(a) A person may not operate as a direct air carrier unless that person—

(1) Is a citizen of the United States;

(2) Obtains an Air Carrier Certificate; and

(3) Obtains operations specifications that prescribe the authorizations, limitations, and procedures under which each kind of operation must be conducted.

(b) A person other than a direct air carrier may not conduct any commercial passenger or cargo aircraft operation for compensation or hire under part 121 or part 135 of this chapter unless that person—

(1) Is a citizen of the United States;

(2) Obtains an Operating Certificate; and
(3) Obtains operations specifications that prescribe the authorizations, limitations, and procedures under which each kind of operation must be conducted.

(c) Each applicant for a certificate under this part and each applicant for operations specifications authorizing a new kind of operation that is subject to §121.163 or §135.145 of this chapter shall conduct proving tests as authorized by the Administrator during the application process for authority to conduct operations under part 121 or part 135 of this chapter. All proving tests must be conducted in a manner acceptable to the Administrator. All proving tests must be conducted under the appropriate operating and maintenance requirements of part 121 or 135 of this chapter that would apply if the applicant were fully certificated. The Administrator will issue a letter of authorization to each person stating the various authorities under which the proving tests shall be conducted.

§ 119.35 Certificate application requirements for all operators.

(a) A person applying to the Administrator for an Air Carrier Certificate or Operating Certificate under this part (applicant) must submit an application—

(1) In a form and manner prescribed by the Administrator; and

(2) Containing any information the Administrator requires the applicant to submit.

(b) Each applicant must submit the application to the Administrator at least 90 days before the date of intended operation.

§ 119.36 Additional certificate application requirements for commercial operators.

(a) Each applicant for the original issue of an operating certificate for the purpose of conducting intrastate common carriage operations under part 121 or part 135 of this chapter must submit an application in a form and manner prescribed by the Administrator to the Flight Standards District Office in whose area the applicant proposes to establish or has established his or her principal base of operations.

(b) Each application submitted under paragraph (a) of this section must contain a signed statement showing the following:

(1) For corporate applicants:

(i) The name and address of each stockholder who owns 5 percent or more of the total voting stock of the corporation, and if that stockholder is not the sole beneficial owner of the stock, the name and address of each beneficial owner. An individual is considered to own the stock owned, directly or indirectly, by or for his or her spouse, children, grandchildren, or parents.

(ii) The name and address of each director and each officer and each person employed or who will be employed in a management position described in §§119.65 and 119.69, as applicable.

(iii) The name and address of each person directly or indirectly controlling or controlled by the applicant and each person under direct or indirect control with the applicant.

(2) For non-corporate applicants:

(i) The name and address of each person having a financial interest therein and the nature and extent of that interest.

(ii) The name and address of each person employed or who will be employed in a management position described in §§119.65 and 119.69, as applicable.

(c) In addition, each applicant for the original issue of an operating certificate under paragraph (a) of this section must submit with the application a signed statement showing—

(1) The nature and scope of its intended operation, including the name and address of each person, if any, with whom the applicant has a contract to provide services as a commercial operator and the scope, nature, date, and duration of each of those contracts; and

(2) For applicants intending to conduct operations under part 121 of this chapter, the financial information listed in paragraph (e) of this section.

(d) Each applicant for, or holder of, a certificate issued under paragraph (a)
of this section, shall notify the Administrator within 10 days after—

(1) A change in any of the persons, or the names and addresses of any of the persons, submitted to the Administrator under paragraph (b)(1) or (b)(2) of this section; or

(2) For applicants intending to conduct operations under part 121 of this chapter, a change in the financial information submitted to the Administrator under paragraph (e) of this section that occurs while the application for the issue is pending before the FAA and that would make the applicant’s financial situation substantially less favorable than originally reported.

(e) Each applicant for the original issue of an operating certificate under paragraph (a) of this section who intends to conduct operations under part 121 of this chapter must submit the following financial information:

(1) A balance sheet that shows assets, liabilities, and net worth, as of a date not more than 60 days before the date of application.

(2) An itemization of liabilities more than 60 days past due on the balance sheet date, if any, showing each creditor’s name and address, a description of the liability, and the amount and due date of the liability.

(3) An itemization of claims in litigation, if any, against the applicant as of the date of application showing each claimant’s name and address and a description and the amount of the claim.

(4) A detailed projection of the proposed operation covering 6 complete months after the month in which the certificate is expected to be issued, including—

(i) Estimated amount and source of both operating and nonoperating revenue, including identification of its existing and anticipated income producing contracts and estimated revenue per mile or hour of operation by aircraft type;

(ii) Estimated amount of operating and nonoperating expenses by expense objective classification; and

(iii) Estimated net profit or loss for the period.

(5) An estimate of the cash that will be needed for the proposed operations during the first 6 months after the month in which the certificate is expected to be issued, including—

(i) Acquisition of property and equipment (explain);

(ii) Retirement of debt (explain);

(iii) Additional working capital (explain);

(iv) Operating losses other than depreciation and amortization (explain); and

(v) Other (explain).

(6) An estimate of the cash that will be available during the first 6 months after the month in which the certificate is expected to be issued, from—

(i) Sale of property or flight equipment (explain);

(ii) New debt (explain);

(iii) New equity (explain);

(iv) Working capital reduction (explain);

(v) Operations (profits) (explain);

(vi) Depreciation and amortization (explain); and

(vii) Other (explain).

(7) A schedule of insurance coverage in effect on the balance sheet date showing insurance companies; policy numbers; types, amounts, and period of coverage; and special conditions, exclusions, and limitations.

(8) Any other financial information that the Administrator requires to enable him or her to determine that the applicant has sufficient financial resources to conduct his or her operations with the degree of safety required in the public interest.

(f) Each financial statement containing financial information required by paragraph (e) of this section must be based on accounts prepared and maintained on an accrual basis in accordance with generally accepted accounting principles applied on a consistent basis, and must contain the name and address of the applicant’s public accounting firm, if any. Information submitted must be signed by an officer, owner, or partner of the applicant or certificate holder.


§ 119.37 Contents of an Air Carrier Certificate or Operating Certificate.

The Air Carrier Certificate or Operating Certificate includes—

(a) The certificate holder’s name;
§ 119.43 Certificate holder's duty to maintain operations specifications.

(a) Each certificate holder shall maintain a complete and separate set of operations specifications in such detail as to maintain a complete and separate set of operations specifications, causing revocation or causing the revocation process.

(b) The location of the certificate holder's principal base of operations;

(c) The certificate number;

(d) The certificate's effective date; and

(e) The name or the designator of the certificate-holding district office.

§ 119.41 Amending a certificate.

(a) The Administrator may amend any certificate issued under this part if—

(1) The Administrator determines, under 49 U.S.C. 44709 and part 13 of this chapter, that safety in air commerce and the public interest requires the amendment; or

(2) The certificate holder applies for the amendment and the certificate-holding district office determines that safety in air commerce and the public interest allows the amendment.

(b) When the Administrator proposes to issue an order amending, suspending, or revoking all or part of any certificate, the procedure in §13.19 of this chapter applies.

(c) When the certificate holder applies for an amendment of its certificate, the following procedure applies:

(1) The Administrator must file an application to amend its certificate with the certificate-holding district office at least 30 days before the date proposed by the applicant for the amendment to become effective, unless the Administrator approves filing within a shorter period; and

(2) The application must be submitted to the certificate-holding district office in the form and manner prescribed by the Administrator.

(d) When a certificate holder seeks reconsideration of a decision from the certificate-holding district office concerning amendments of a certificate, the following procedure applies:

(1) The petition for reconsideration must be made within 30 days after the certificate holder receives the notice of denial; and

(2) The certificate holder must petition for reconsideration to the Director, Flight Standards Service.
§ 119.45 — [Reserved]

§ 119.47 — Maintaining a principal base of operations, main operations base, and main maintenance base; change of address.

(a) Each certificate holder must maintain a principal base of operations. Each certificate holder may also establish a main operations base and a main maintenance base which may be located at either the same location as the principal base of operations or at separate locations.

(b) At least 30 days before it proposes to establish or change the location of its principal base of operations, its main operations base, or its main maintenance base, a certificate holder must provide written notification to its certificate-holding district office.

§ 119.49 — Contents of operations specifications.

(a) Each certificate holder conducting domestic, flag, or commuter operations must obtain operations specifications containing all of the following:

(1) The specific location of the certificate holder's principal base of operations and, if different, the address that shall serve as the primary point of contact for correspondence between the FAA and the certificate holder and the name and mailing address of the certificate holder's agent for service.

(2) Other business names under which the certificate holder may operate.

(3) Reference to the economic authority issued by the Department of Transportation, if required.

(4) Type of aircraft, registration markings, and serial numbers of each aircraft authorized for use, each regular and alternate airport to be used in scheduled operations, and, except for commuter operations, each provisional and refueling airport.

(i) Subject to the approval of the Administrator with regard to form and content, the certificate holder may incorporate by reference the items listed in paragraph (a)(4) of this section into the certificate holder's operations specifications by maintaining a current listing of those items and by referring to the specific list in the applicable paragraph of the operations specifications.

(ii) The certificate holder may not conduct any operation using any aircraft or airport not listed.

(5) Kinds of operations authorized.

(6) Authorization and limitations for routes and areas of operations.

(7) Airport limitations.

(8) Time limitations, or standards for determining time limitations, for overhauling, inspecting, and checking airframes, engines, propellers, rotors, appliances, and emergency equipment.

(9) Authorization for the method of controlling weight and balance of aircraft.

(10) Interline equipment interchange requirements, if relevant.

(11) Aircraft wet lease information required by §119.53(c).

(12) Any authorized deviation and exemption granted from any requirement of this chapter.

(13) Any other item the Administrator determines is necessary.

(b) Each certificate holder conducting supplemental operations must obtain operations specifications containing all of the following:

(1) The specific location of the certificate holder's principal base of operations, and, if different, the address that shall serve as the primary point of contact for correspondence between the FAA and the certificate holder and the name and mailing address of the certificate holder's agent for service.

(2) Other business names under which the certificate holder may operate.
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(3) Reference to the economic authority issued by the Department of Transportation, if required.

(4) Type of aircraft, registration markings, and serial number of each aircraft authorized for use.

(i) Subject to the approval of the Administrator with regard to form and content, the certificate holder may incorporate by reference the items listed in paragraph (b)(4) of this section into the certificate holder’s operations specifications by maintaining a current listing of those items and by referring to the specific list in the applicable paragraph of the operations specifications.

(ii) The certificate holder may not conduct any operation using any aircraft not listed.

(5) Kinds of operations authorized.

(6) Authorization and limitations for routes and areas of operations.

(7) Special airport authorizations and limitations.

(8) Time limitations, or standards for determining time limitations, for overhauling, inspecting, and checking airframes, engines, propellers, appliances, and emergency equipment.

(9) Authorization for the method of controlling weight and balance of aircraft.

(10) Aircraft wet lease information required by §119.53(c).

(11) Any authorization or requirement to conduct supplemental operations as provided by §119.21(a)(3) (i) or (ii).

(12) Any authorized deviation or exemption from any requirement of this chapter.

(13) Any other item the Administrator determines is necessary.

(c) Each certificate holder conducting on-demand operations must obtain operations specifications containing all of the following:

(1) The specific location of the certificate holder’s principal base of operations, and if different, the address that shall serve as the primary point of contact for correspondence between the FAA and the name and mailing address of the certificate holder’s agent for service.

(2) Other business names under which the certificate holder may operate.

(3) Reference to the economic authority issued by the Department of Transportation, if required.

(4) Kind and area of operations authorized.

(5) Category and class of aircraft that may be used in those operations.

(6) Type of aircraft, registration markings, and serial number of each aircraft that is subject to an airworthiness maintenance program required by §135.411(a)(2) of this chapter.

(i) Subject to the approval of the Administrator with regard to form and content, the certificate holder may incorporate by reference the items listed in paragraph (c)(6) of this section into the certificate holder’s operations specifications by maintaining a current listing of those items and by referring to the specific list in the applicable paragraph of the operations specifications.

(ii) The certificate holder may not conduct any operation using any aircraft not listed.

(7) Registration markings of each aircraft that is to be inspected under an approved aircraft inspection program under §135.419 of this chapter.

(8) Time limitations or standards for determining time limitations, for overhauls, inspections, and checks for airframes, engines, propellers, rotors, appliances, and emergency equipment of aircraft that are subject to an airworthiness maintenance program required by §135.411(a)(2) of this chapter.

(9) Additional maintenance items required by the Administrator under §135.421 of this chapter.

(10) Aircraft wet lease information required by §119.53(c).

(11) Any authorized deviation or exemption from any requirement of this chapter.

(12) Any other item the Administrator determines is necessary.

§119.51 Amending operations specifications.

(a) The Administrator may amend any operations specifications issued under this part if—

(1) The Administrator determines that safety in air commerce and the public interest require the amendment; or
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(2) The certificate holder applies for the amendment, and the Administrator determines that safety in air commerce and the public interest allows the amendment.

(b) Except as provided in paragraph (e) of this section, when the Administrator initiates an amendment to a certificate holder's operations specifications, the following procedure applies:

1. The certificate-holding district office notifies the certificate holder in writing of the proposed amendment.
2. The certificate-holding district office sets a reasonable period (but not less than 7 days) within which the certificate holder may submit written information, views, and arguments on the amendment.
3. After considering all material presented, the certificate-holding district office notifies the certificate holder of—
   (i) The adoption of the proposed amendment;
   (ii) The partial adoption of the proposed amendment; or
   (iii) The withdrawal of the proposed amendment.
4. If the certificate-holding district office issues an amendment to the operations specifications, it becomes effective not less than 30 days after the certificate holder receives notice of it unless—
   (i) The certificate-holding district office finds under paragraph (e) of this section that there is an emergency requiring immediate action with respect to safety in air commerce; or
   (ii) The certificate holder petitions for reconsideration of the amendment under paragraph (d) of this section.
(c) When the certificate holder applies for an amendment to its operations specifications, the following procedure applies:
1. The certificate holder must address its petition to the Director, Flight Standards Service.
2. A petition for reconsideration, if filed within the 30-day period, suspends the effectiveness of any amendment issued by the certificate-holding district office unless the certificate-holding district office has found, under paragraph (e) of this section, that an emergency exists requiring immediate operations following a suspension of operations as a result of bankruptcy actions; or the initial introduction of aircraft not before proven for use in air carrier or commercial operator operations.
3. At least 15 days before the date proposed by the applicant for the amendment to become effective in all other cases.
4. The application must be submitted to the certificate-holding district office in a form and manner prescribed by the Administrator.
5. After considering all material presented, the certificate-holding district office notifies the certificate holder of—
   (i) The adoption of the applied for amendment;
   (ii) The partial adoption of the applied for amendment; or
   (iii) The denial of the applied for amendment. The certificate holder may petition for reconsideration of a denial under paragraph (d) of this section.
6. If the certificate-holding district office approves the amendment, following coordination with the certificate holder regarding its implementation, the amendment is effective on the date the Administrator approves it.
(d) When a certificate holder seeks reconsideration of a decision from the certificate-holding district office concerning the amendment of operations specifications, the following procedure applies:
1. The certificate holder must petition for reconsideration of that decision within 30 days of the date that the certificate holder receives a notice of denial of the amendment to its operations specifications, or of the date it receives notice of an FAA-initiated amendment to its operations specifications, whichever circumstance applies.
2. The certificate holder must address its petition to the Director, Flight Standards Service.
3. A petition for reconsideration, if filed within the 30-day period, suspends the effectiveness of any amendment issued by the certificate-holding district office unless the certificate-holding district office has found, under paragraph (e) of this section, that an emergency exists requiring immediate actions following a suspension of operations as a result of bankruptcy actions; or the initial introduction of aircraft not before proven for use in air carrier or commercial operator operations.
action with respect to safety in air transportation or air commerce.

(4) If a petition for reconsideration is not filed within 30 days, the procedures of paragraph (c) of this section apply.

(e) If the certificate-holding district office finds that an emergency exists requiring immediate action with respect to safety in air commerce or air transportation that makes the procedures set out in this section impracticable or contrary to the public interest:

(1) The certificate-holding district office amends the operations specifications and makes the amendment effective on the day the certificate holder receives notice of it.

(2) In the notice to the certificate holder, the certificate-holding district office articulates the reasons for its finding that an emergency exists requiring immediate action with respect to safety in air transportation or air commerce or that makes it impracticable or contrary to the public interest to stay the effectiveness of the amendment.

§ 119.53 Wet leasing of aircraft and other arrangements for transportation by air.

(a) Unless otherwise authorized by the Administrator, prior to conducting operations involving a wet lease, each certificate holder under this part authorized to conduct common carriage operations under this subchapter shall provide the Administrator with a copy of the wet lease to be executed which would lease the aircraft to any other person engaged in common carriage operations under this subchapter, including foreign air carriers, or to any other foreign person engaged in common carriage wholly outside the United States.

(b) No certificate holder under this part may wet lease from a foreign air carrier or any other foreign person or any person not authorized to engage in common carriage.

(c) Upon receiving a copy of a wet lease, the Administrator determines which party to the agreement has operational control of the aircraft and issues amendments to the operations specifications of each party to the agreement, as needed. The lessor must provide the following information to be incorporated into the operations specifications of both parties, as needed.

(1) The names of the parties to the agreement and the duration thereof.

(2) The nationality and registration markings of each aircraft involved in the agreement.

(3) The kind of operation (e.g., domestic, flag, supplemental, commuter, or on-demand).

(4) The airports or areas of operation.

(5) A statement specifying the party deemed to have operational control and the times, airports, or areas under which such operational control is exercised.

(d) In making the determination of paragraph (c) of this section, the Administrator will consider the following:

(1) Crewmembers and training.

(2) Airworthiness and performance of maintenance.

(3) Dispatch.

(4) Servicing the aircraft.

(5) Scheduling.

(6) Any other factor the Administrator considers relevant.

(e) Other arrangements for transportation by air: Except as provided in paragraph (f) of this section, a certificate holder under this part operating under part 121 or 135 of this chapter may not conduct any operation for another certificate holder under this part or a foreign air carrier under part 129 of this chapter or a foreign person engaged in common carriage wholly outside the United States unless it holds applicable Department of Transportation economic authority, if required, and is authorized under its operations specifications to conduct the same kinds of operations (as defined in §119.3). The certificate holder conducting the substitute operation must conduct that operation in accordance with the same operations authority held by the certificate holder arranging for the substitute operation. These substitute operations must be conducted between airports for which the substitute certificate holder holds authority for scheduled operations or within areas of operations for which the substitute certificate holder has authority for supplemental or on-demand operations.

(f) A certificate holder under this part may, if authorized by the Department of Transportation under §380.3 of
§ 119.55 Obtaining deviation authority to perform operations under a U.S. military contract.

(a) The Administrator may authorize a certificate holder that is authorized to conduct supplemental or on-demand operations to deviate from the applicable requirements of this part, part 121 or part 135 of this chapter in order to perform operations under a U.S. military contract.

(b) A certificate holder that has a contract with the U.S. Department of Defense's Air Mobility Command (AMC) must submit a request for deviation authority to AMC. AMC will review the requests, then forward the carriers' consolidated requests, along with AMC's recommendations, to the FAA for review and action.

(c) The Administrator may authorize a deviation to perform operations under a U.S. military contract under the following conditions—

(1) The Department of Defense certifies to the Administrator that the operation is essential to the national defense;

(2) The Department of Defense further certifies that the certificate holder cannot perform the operation without deviation authority;

(3) The certificate holder will perform the operation under a contract or subcontract for the benefit of a U.S. armed service; and

(4) The Administrator finds that the deviation is based on grounds other than economic advantage either to the certificate holder or to the United States.

(d) In the case where the Administrator authorizes a deviation under this section, the Administrator will issue an appropriate amendment to the certificate holder's operations specifications.

(e) The Administrator may, at any time, terminate any grant of deviation authority issued under this section.

§ 119.57 Obtaining deviation authority to perform an emergency operation.

(a) In emergency conditions, the Administrator may authorize deviations if—

(1) Those conditions necessitate the transportation of persons or supplies for the protection of life or property; and

(2) The Administrator finds that a deviation is necessary for the expeditious conduct of the operations.

(b) When the Administrator authorizes deviations for operations under emergency conditions—

(1) The Administrator will issue an appropriate amendment to the certificate holder's operations specifications; or

(2) If the nature of the emergency does not permit timely amendment of the operations specifications—

(i) The Administrator may authorize the deviation orally; and

(ii) The certificate holder shall provide documentation describing the nature of the emergency to the certificate-holding district office within 24 hours after completing the operation.

§ 119.59 Conducting tests and inspections.

(a) At any time or place, the Administrator may conduct an inspection or test to determine whether a certificate holder under this part is complying with title 49 of the United States Code, applicable regulations, the certificate, or the certificate holder's operations specifications.

(b) The certificate holder must—

(1) Make available to the Administrator at the certificate holder's principal base of operations—

(i) The certificate holder's Air Carrier Certificate or the certificate holder's Operating Certificate and the certificate holder's operations specifications; and

(ii) A current listing that will include the location and persons responsible for each record, document, and report required to be kept by the certificate holder.
holder under title 49 of the United States Code applicable to the operation of the certificate holder.

(2) Allow the Administrator to make any test or inspection to determine compliance respecting any matter stated in paragraph (a) of this section.

(c) Each employee of, or person used by, the certificate holder who is responsible for maintaining the certificate holder’s records must make those records available to the Administrator.

(d) The Administrator may determine a certificate holder’s continued eligibility to hold its certificate and/or operations specifications on any grounds listed in paragraph (a) of this section, or any other appropriate grounds.

(e) Failure by any certificate holder to make available to the Administrator upon request, the certificate, operations specifications, or any required record, document, or report is grounds for suspension of all or any part of the certificate holder’s certificate and operations specifications.

(f) In the case of operators conducting intrastate common carriage operations, these inspections and tests include inspections and tests of financial books and records.

§ 119.63 Recency of operation.

(a) Except as provided in paragraph (b) of this section, no certificate holder may conduct a kind of operation for which it holds authority in its operations specifications unless the certificate holder has conducted that kind of operation within the preceding number of consecutive calendar days specified in this paragraph:

(1) For domestic, flag, or commuter operations—30 days.

(2) For supplemental or on-demand operations—90 days, except that if the certificate holder has authority to conduct domestic, flag, or commuter operations, and has conducted domestic, flag or commuter operations within the previous 30 days, this paragraph does not apply.

(b) If a certificate holder does not conduct a kind of operation for which it is authorized in its operations specifications within the number of calendar days specified in paragraph (a) of this section, it shall not conduct such kind of operation unless—

(1) It advises the Administrator at least 5 consecutive calendar days before resumption of that kind of operation; and

(2) It makes itself available and accessible during the 5 consecutive calendar day period in the event that the FAA decides to conduct a full inspection reexamination to determine whether the certificate holder remains properly and adequately equipped and able to conduct a safe operation.


§ 119.65 Management personnel required for operations conducted under part 121 of this chapter.

(a) Each certificate holder must have sufficient qualified management and
§ 119.67 Management personnel: Qualifications for operations conducted under part 121 of this chapter.

(a) To serve as Director of Operations under § 119.65(a) a person must—
   (1) Hold an airline transport pilot certificate;
   (2) Have at least 3 years supervisory or managerial experience within the last 6 years in a position that exercised operational control over any operations conducted with large airplanes under part 121 or part 135 of this chapter, or if the certificate holder uses only small airplanes in its operations, the experience may be obtained in large or small airplanes; and
   (3) In the case of a person becoming a Director of Operations—
      (i) For the first time ever, have at least 3 years experience, within the past 6 years, as pilot in command of a large airplane operated under part 121 or part 135 of this chapter, if the certificate holder operates large airplanes.
      (ii) In the case of a person with previous experience as a Director of Operations, have at least 3 years experience as pilot in command of a large airplane operated under part 121 or part 135 of this chapter, if the certificate holder operates large airplanes. If the certificate holder uses only small airplanes in its operation, the experience may be obtained in either large or small airplanes.

(b) To serve as Chief Pilot under § 119.65(a) a person must hold an airline transport pilot certificate with appropriate ratings for at least one of the

(c) The title of the positions required under paragraph (a) of this section or the title and number of equivalent positions approved under paragraph (b) of this section shall be set forth in the certificate holder’s operations specifications.

(d) The individuals who serve in the positions required or approved under paragraph (a) or (b) of this section and anyone in a position to exercise control over operations conducted under the operating certificate must—
   (1) Be qualified through training, experience, and expertise;
   (2) To the extent of their responsibilities, have a full understanding of the following materials with respect to the certificate holder’s operation—
      (i) Aviation safety standards and safe operating practices;
      (ii) 14 CFR Chapter I (Federal Aviation Regulations);
      (iii) The certificate holder’s operations specifications;
      (iv) All appropriate maintenance and airworthiness requirements of this chapter (e.g., parts 1, 21, 23, 25, 43, 45, 47, 65, 91, and 121 of this chapter); and
   (3) Discharge their duties to meet applicable legal requirements and to maintain safe operations.

(e) Each certificate holder must:
   (1) State in the general policy provisions of the manual required by § 121.133 of this chapter, the duties, responsibilities, and authority of personnel required under paragraph (a) of this section;
   (2) List in the manual the names and business addresses of the individuals assigned to those positions; and
   (3) Notify the certificate-holding district office within 10 days of any change in personnel or any vacancy in any position listed.
§ 119.69 Management personnel required for operations conducted under part 135 of this chapter.

(a) Each certificate holder must have sufficient qualified management and technical personnel to ensure the safety of its operations. Except for a certificate holder using only one pilot in its operations, the certificate holder must have qualified personnel serving in the following or equivalent positions:

   (1) Director of Operations.
   (2) Chief Pilot.
   (3) Director of Maintenance.

(b) The Administrator may approve positions or numbers of positions other than those listed in paragraph (a) of this section for a particular operation if the certificate holder shows that it can perform the operation with the necessary level of safety and efficiency.
§ 119.71 Management personnel: Qualifications for operations conducted under part 135 of this chapter.

(a) To serve as Director of Operations under §119.69(a) for a certificate holder conducting any operations for which the pilot in command is required to hold an airline transport pilot certificate a person must hold an airline transport pilot certificate and either:

(1) Have at least 3 years supervisory or managerial experience within the last 6 years in a position that exercised operational control over any operations conducted under part 121 or part 135 of this chapter; or

(2) In the case of a person becoming Director of Operations—

(i) For the first time ever, have at least 3 years experience, within the past 6 years, as pilot in command of an aircraft operated under part 121 or part 135 of this chapter.

(ii) In the case of a person with previous experience as a Director of Operations, have at least 3 years experience, as pilot in command of an aircraft operated under part 121 or part 135 of this chapter.

(b) To serve as Director of Operations under §119.69(a) for a certificate holder that only conducts operations for which the pilot in command is required to hold a commercial pilot certificate, a person must hold at least a commercial pilot certificate. If an instrument rating is required for any pilot in command for that certificate holder, the Director of Operations must also hold an instrument rating. In addition, the Director of Operations must either—

(1) Have at least 3 years supervisory or managerial experience within the last 6 years in a position that exercised operational control over any operations conducted under part 121 or part 135 of this chapter; or

(2) In the case of a person becoming Director of Operations—

(i) For the first time ever, have at least 3 years experience, within the past 6 years, as pilot in command of an aircraft operated under part 121 or part 135 of this chapter.

(ii) In the case of a person with previous experience as a Director of Operations, have at least 3 years experience...
as pilot in command of an aircraft operated under part 121 or part 135 of this chapter.

(c) To serve as Chief Pilot under §119.69(a) for a certificate holder conducting any operation for which the pilot in command is required to hold an airline transport pilot certificate a person must hold an airline transport pilot certificate with appropriate ratings and be qualified to serve as pilot in command in at least one aircraft used in the certificate holder’s operation and:

(1) In the case of a person becoming a Chief Pilot for the first time ever, have at least 3 years experience, within the past 6 years, as pilot in command of an aircraft operated under part 121 or part 135 of this chapter.

(2) In the case of a person with previous experience as a Chief Pilot, have at least 3 years experience as pilot in command of an aircraft operated under part 121 or part 135 of this chapter.

(d) To serve as Chief Pilot under §119.69(a) for a certificate holder that only conducts operations for which the pilot in command is required to hold a commercial pilot certificate, a person must hold at least a commercial pilot certificate. If an instrument rating is required for any pilot in command for that certificate holder, the Chief Pilot must also hold an instrument rating. The Chief Pilot must be qualified to serve as pilot in command in at least one aircraft used in the certificate holder’s operation. In addition, the Chief Pilot must:

(1) In the case of a person becoming a Chief Pilot for the first time ever, have at least 3 years experience, within the past 6 years, as pilot in command of an aircraft operated under part 121 or part 135 of this chapter.

(2) In the case of a person with previous experience as a Chief Pilot, have at least 3 years experience as pilot in command of an aircraft operated under part 121 or part 135 of this chapter.

(e) To serve as Director of Maintenance under §119.69(a) a person must hold a mechanic certificate with airframe and powerplant ratings and either:

(1) Have 3 years of experience within the past 3 years maintaining aircraft as a certificated mechanic, including, at the time of appointment as Director of Maintenance, experience in maintaining the same category and class of aircraft as the certificate holder uses; or

(2) Have 3 years of experience within the past 3 years repairing aircraft in a certificated airframe repair station, including 1 year in the capacity of approving aircraft for return to service.

(f) A certificate holder may request a deviation to employ a person who does not meet the appropriate airmen experience requirements, managerial experience requirements, supervisory experience requirements, or supervisory experience requirements of this section if the Manager of the Air Transportation Division, AF±200, or the Manager of the Aircraft Maintenance Division, AF±300, as appropriate, find that the person has comparable experience, and can effectively perform the functions associated with the position in accordance with the requirements of this chapter and the procedures outlined in the certificate holder’s manual. The Administrator may, at any time, terminate any grant of deviation authority issued under this paragraph.

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Subpart C—Certification Rules for Supplemental Air Carriers and Commercial Operators  [Reserved]

Subpart D—Rules Governing All Certificate Holders Under This Part  [Reserved]

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Appendix B to Part 121—Aircraft Flight Recorder Specifications
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APPENDIX M TO PART 121—TYPE CERTIFICATION REGULATIONS MADE PREVIOUSLY EFFECTIVE AIRPLANE FLIGHT RECORDER SPECIFICATION

AUTHORITY: 49 U.S.C. 106(g), 40113, 40119, 44101, 44701-44702, 44705, 44709-44711, 44713, 44716-44717, 44722, 44901, 44903-44904, 44912, 46105.

SPECIAL FEDERAL AVIATION REGULATIONS

SFAR No. 14

Contrary performance provisions of the Civil Air Regulations notwithstanding, the Administrator may grant performance credit for the use of standby power on transport category airplanes. Such credit shall be applicable only to the maximum certificated take-off and landing weights, and the take-off distance, and the take-off paths, and shall not exceed that found by the Administrator to result in an over-all level of safety in the take-off, approach, and landing regimes of flight equivalent to that prescribed in the regulations under which the airplane was originally certificated without standby power. (NOTE: Standby power is power and/or thrust obtained from rocket engines for a relatively short period and actuated only in cases of emergency.) The following provisions shall apply:

(1) Take-off: general. The take-off data prescribed in sections (2) and (3) shall be determined at all weights and altitudes, and at ambient temperatures if applicable, at which performance credit is to be applied.

(2) Take-off path. (a) The one-engine-inoperative take-off path with standby power in use shall be determined in accordance with the performance requirements of the applicable airworthiness regulations.

(b) The one-engine-inoperative take-off path (excluding that portion where the airplane is on or just above the take-off surface determined in accordance with paragraph (a) of this section) shall lie above the one-engine-inoperative take-off path without standby power at the maximum take-off weight at which all of the applicable airworthiness requirements are met. For the purpose of this comparison, the flight path shall be considered to extend to at least a height of 400 feet above the take-off surface.

(c) The take-off path with all engines operating, but without the use of standby power, shall reflect a conservatively greater over-all level of performance than the one-engine-inoperative take-off path established in accordance with paragraph (a) of this section. The aforementioned margin shall be established by the Administrator to insure safe day-to-day operations, but in no case shall it be less than 15 percent. The all-engines-operating take-off path shall be determined by a procedure consistent with that established in complying with paragraph (a) of this section.

(d) For reciprocating-engine-powered airplanes, the take-off path to be scheduled in the Airplane Flight Manual shall represent the one-engine-inoperative take-off path determined in accordance with paragraph (a) of this section and modified to reflect the procedure (see section (g)) established by the applicant for flap retraction and attainment of the en route speed. The scheduled take-off path shall have a positive slope at all points of the airborne portion and at no point shall it lie above the take-off path specified in paragraph (a) of this section.

(3) Take-off distance. The take-off distance shall be the horizontal distance along the one-engine-inoperative take-off to the point where the airplane attains a height of 50 feet above the take-off surface for reciprocating-engine-powered airplanes and a height of 35 feet above the take-off surface for turbine-powered airplanes.

(4) Maximum certificated take-off weights. The maximum certificated take-off weights shall be determined at all altitudes, and at ambient temperatures if applicable, at which performance credit is to be applied and shall not exceed the weights established in compliance with paragraphs (a) and (b) of this section.

(a) The conditions of section (2) (b) through (d) shall be met at the maximum certificated take-off weight.

(b) Without the use of standby power, the airplane shall meet all of the en route requirements of the applicable airworthiness regulations under which the airplane was originally certificated. In addition, turbine-powered airplanes without the use of standby power shall meet the final take-off climb requirements prescribed in the applicable airworthiness regulations.

(5) Maximum certificated landing weights. (a) The maximum certificated landing weights (one-engine/inoperative approach and all-engine/operating landing climb) shall be determined at all altitudes, and at ambient temperatures if applicable, at which performance credit is to be applied and shall not exceed that established in compliance with the provisions of paragraph (b) of this section.

(b) The flight path, with the engines operating at the power and/or thrust appropriate to the airplane configuration and with standby power in use, shall lie above the flight path without standby power in use at the maximum weight at which all of the applicable airworthiness requirements are met. In addition, the flight paths shall comply with the provisions of paragraphs (i) and (ii) of this paragraph (b).

(i) The flight paths shall be established without changing the appropriate airplane configuration.
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(1) The flight paths shall be carried out for a minimum height of 400 feet above the point where standby power is actuated.

(6) Airplane configuration, speed, and power and/or thrust; general. Any change in the airplane's configuration, speed, and power and/or thrust shall be made in accordance with the procedures established by the applicant for the operation of the airplane in service and shall comply with the provisions of paragraphs (a) through (c) of this section. In addition, procedures shall be established for the execution of balked landings and missed approaches.

(a) The Administrator shall find that the procedure can be consistently executed in service by crews of average skill.

(b) The procedure shall not involve methods or the use of devices which have not been proven to be safe and reliable.

(c) Allowances shall be made for such time delays in the execution of the procedures as may be reasonably expected to occur during service.

(7) Installation and operation; standby power. The standby power unit and its installation shall comply with the provisions of paragraphs (a) and (b) of this section.

(a) The standby power unit and its installation shall not adversely affect the safety of the airplane.

(b) The operation of the standby power unit and its control shall have proven to be safe and reliable.


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1. Definitions. For purposes of this Special Federal Aviation Regulation—

(a) A product is an aircraft, airframe, aircraft engine, propeller, or appliance;

(b) An article is an airframe, powerplant, propeller, instrument, radio, or accessory; and

(c) A component is a part of a product or article.

2. General. (a) Contrary provisions of § 121.379(b) of the Federal Aviation Regulations notwithstanding, the holder of an air carrier operating or commercial operating certificate, or the holder of an air taxi operating certificate that operates large aircraft, that has been issued operations specifications for operations required to be conducted in accordance with 14 CFR part 127 may perform a major repair on a product as described in § 127.140(a), using technical data that have not been approved by the Administrator, and approve that product for return to service, if authorized in accordance with this Special Federal Aviation Regulation.

(b) Contrary provisions of § 127.40(b) of the Federal Aviation Regulations notwithstanding, the holder of an air carrier operating certificate that has been issued operations specifications for operations required to be conducted in accordance with 14 CFR part 127 may perform a major repair on a product as described in § 127.140(a), using technical data that have not been approved by the Administrator, and approve that product for return to service, if authorized in accordance with this Special Federal Aviation Regulation.

(c) Contrary provisions of § 145.51 of the Federal Aviation Regulations notwithstanding, the holder of a domestic repair station certificate under 14 CFR part 145 may perform a major repair on an article for which it is rated, using technical data not approved by the Administrator, and approve that article for return to service, if authorized in accordance with this Special Federal Aviation Regulation. If the certificate holder holds a rating limited to a component of a product or article, the holder may not, by virtue of this Special Federal Aviation Regulation, approve that product or article for return to service.

3. Major Repair Data and Return to Service.

(a) As referenced in section 2 of this Special Federal Aviation Regulation, a certificate holder may perform a major repair on a product or article using technical data that have not been approved by the Administrator, and approve that product or article for return to service, if the certificate holder—

(1) Has been issued an authorization under, and a procedures manual that complies with, Special Federal Aviation Regulation No. 36, effective on January 23, 1994;

(2) Has developed the technical data in accordance with the procedures manual;

(3) Has developed the technical data specifically for the product or article being repaired; and

(4) Has accomplished the repair in accordance with the procedures manual and the procedures approved by the Administrator for the certificate.

(b) For purposes of this section, an authorization holder may develop technical data to perform a major repair on a product or article and use that data to repair a subsequent product or article of the same type as long as the holder—

(1) Evaluates each subsequent repair and the technical data to determine that performing the subsequent repair with the same data will return the product or article to its original or properly altered condition, and that the repaired product or article conforms with applicable airworthiness requirements; and

(2) Records each evaluation in the records referenced in paragraph (a) of section 13 of this Special Federal Aviation Regulation.

4. Application. The applicant for an authorization under this Special Federal Aviation Regulation must submit an application, in
writing and signed by an officer of the applicant, to the FAA Flight Standards District Office charged with the overall inspection of the applicant's operations under its certificate. The application must contain—

(a) If the applicant is

(1) The holder of an air carrier operating or commercial operating certificate, or the holder of an air taxi operating certificate that operates large aircraft, the—

(i) The applicant's certificate number; and

(ii) The specific product(s) the applicant is authorized to maintain under its certificate, operations specifications, and maintenance manual; or

(2) The holder of a domestic repair station certificate—

(i) The applicant's certificate number;

(ii) A copy of the applicant's operations specifications; and

(iii) The specific article(s) for which the applicant is rated;

(b) The name, signature, and title of each person for whom authorization to approve, on behalf of the authorization holder, the use of technical data for major repairs is requested; and

(c) The qualifications of the applicant's staff that show compliance with section 5 of this Special Federal Aviation Regulation.

5. Eligibility. (a) To be eligible for an authorization under this Special Federal Aviation Regulation, the applicant, in addition to having the authority to repair products or articles must—

(1) Hold an air carrier, commercial, or air taxi operating certificate, and have been issued operations specifications for operations required to be conducted in accordance with 14 CFR part 121 or 127, or §135.2, or hold a domestic repair station certificate under 14 CFR part 145;

(2) Have an adequate number of sufficiently trained personnel in the United States to develop data and repair the products that the applicant is authorized to maintain under its operating certificate or the articles for which it is rated under its domestic repair station certificate;

(3) Employ, or have available, a staff of engineering personnel that can determine compliance with the applicable airworthiness requirements of the Federal Aviation Regulations.

(b) At least one member of the staff required by paragraph (a)(3) of this section must—

(1) Have a thorough working knowledge of the applicable requirements of the Federal Aviation Regulations;

(2) Occupy a position on the applicant's staff that has the authority to establish a repair program that ensures that each repaired product or article meets the applicable requirements of the Federal Aviation Regulations;

(3) Have at least one year of satisfactory experience in processing engineering work, in direct contact with the FAA, for type certification or major repair projects; and

(c) Have at least eight years of aeronautical engineering experience (which may include the one year of experience in processing engineering work for type certification or major repair projects).

(b) At least one member of the staff must—

(1) Have the authority to repair products or articles that the applicant is authorized to maintain under its certificate, operations specifications, and maintenance manual; or

(2) Hold a domestic repair station certificate—

(i) The applicant's certificate number;

(ii) A copy of the applicant's operations specifications; and

(iii) The specific article(s) for which the applicant is rated;

(b) The name, signature, and title of each person for whom authorization to approve, on behalf of the authorization holder, the use of technical data for major repairs is requested; and

(c) The qualifications of the applicant's staff that show compliance with section 5 of this Special Federal Aviation Regulation.

6. Procedures Manual. (a) A certificate holder may not approve a product or article for return to service under section 2 of this Special Federal Aviation Regulation unless the holder—

(1) Has a procedures manual that has been approved by the Administrator as complying with paragraph (b) of this section; and

(2) Complies with the procedures contained in this procedures manual.

(b) The approved procedures manual must contain—

(1) The procedures for developing and determining the adequacy of technical data for major repairs;

(2) The identification (names, signatures, and responsibilities) of officials and of each staff member described in section 5 of this Special Federal Aviation Regulation who—

(i) Has the authority to make changes in procedures that require a revision to the procedures manual; and

(ii) Prepares or determines the adequacy of technical data, plans or conducts tests, and approves, on behalf of the authorization holder, test results; and

(c) A "log of revisions" page that identifies each revised item, page, and date of revision, and contains the signature of the person approving the change for the Administrator.

7. Duration of Authorization. Each authorization issued under this Special Federal Aviation Regulation may not approve a product or article for return to service after a change in staff necessary to meet the requirements of section 5 of this regulation or a change in procedures from those approved under paragraph (a) of this section, unless that change has been approved by the FAA and entered in the procedures manual.

8. Duration of Authorization. Each authorization issued under this Special Federal Aviation Regulation is effective from the date of issuance until January 23, 1999, unless it is earlier surrendered, suspended, revoked, or otherwise terminated. Upon termination of such authorization, the terminated authorization holder must:

(a) Surrender to the FAA all data developed pursuant to Special Federal Aviation Regulation No. 36 or

(b) At least one member of the staff required by paragraph (a)(3) of this section must—

(1) Have a thorough working knowledge of the applicable requirements of the Federal Aviation Regulations;

(2) Occupy a position on the applicant's staff that has the authority to establish a repair program that ensures that each repaired product or article meets the applicable requirements of the Federal Aviation Regulations;

(3) Have at least one year of satisfactory experience in processing engineering work, in direct contact with the FAA, for type certification or major repair projects; and

(c) Have at least eight years of aeronautical engineering experience (which may include the one year of experience in processing engineering work for type certification or major repair projects).
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(b) Maintain indefinitely all data developed pursuant to Special Federal Aviation Regulation No. 36, and make that data available to the FAA for inspection upon request.

8. Transferability. An authorization issued under this Special Federal Aviation Regulation is not transferable.

9. Inspections. Each holder of an authorization issued under this Special Federal Aviation Regulation and each applicant for an authorization must allow the Administrator to inspect its personnel, facilities, products and articles, and records upon request.

10. Limits of Applicability. An authorization issued under this Special Federal Aviation Regulation applies only to—

(a) A product that the air carrier, commercial, or air taxi operating certificate holder is authorized to maintain pursuant to its continuous airworthiness maintenance program or maintenance manual; or

(b) An article for which the domestic repair station certificate holder is rated.

If the certificate holder is rated for a component of an article, the holder may not, in accordance with this Special Federal Aviation Regulation, approve that article for return to service.

11. Additional Authorization Limitations. Each holder of a authorization issued under this Special Federal Aviation Regulation must comply with any additional limitations prescribed by the Administrator and made a part of the authorization.

12. Data Review and Service Experience. If the Administrator finds that a product or article has been approved for return to service after a major repair has been performed under this Special Federal Aviation Regulation, that the product or article may not conform to the applicable airworthiness requirements or that an unsafe feature or characteristic of the product or article may exist, and that the nonconformance or unsafe feature or characteristic may be attributed to the repair performed, the holder of the authorization, upon notification by the Administrator, shall—

(a) Investigate the matter;

(b) Report to the Administrator the results of the investigation and any action proposed or taken; and

(c) If notified that an unsafe condition exists, provide within the time period stated by the Administrator, the information necessary for the FAA to issue an airworthiness directive under part 39 of the Federal Aviation Regulations.

13. Current Records. Each holder of an authorization issued under this Special Federal Aviation Regulation shall maintain, at its facility, current records containing—

(a) For each product or article for which it has developed and used major repair data, a technical data file that includes all data and amendments thereto (including drawings, photographs, specifications, instructions, and reports) necessary to accomplish the major repair;

(b) A list of products or articles by make, model, manufacturer's serial number (including specific part numbers and serial numbers of components) and, if applicable, FAA Technical Standard Order (TSO) or Parts Manufacturer Approval (PMA) identification, that have been repaired under the authorization; and

(c) A file of information from all available sources on difficulties experienced with products and articles repaired under the authorization.

This Special Federal Aviation Regulation terminates January 23, 1999.

[SFA R 36-6, 59 FR 3940, Jan. 27, 1994]

Effective Date Note: By SFAR No. 36-6, 59 FR 3940, Jan. 27, 1994, SFAR 36 was revised effective January 23, 1994, through January 23, 1999.

SFAR No. 38-2—Certification and Operating Requirements

INDEX

Section

1. Applicability.

(a) This Special Federal Aviation Regulation applies to persons operating civil aircraft in commercial passenger operations, cargo operations, or both, and prescribes—

(b) Operations conducted under more than one paragraph.

(c) Prohibition against operating without certificate or in violation of operations specifications.

2. Certificates and foreign air carrier operating specifications.

(a) Air Carrier Operating Certificate.

(b) Operating Certificate.

(c) Foreign air carrier operations specifications.


4. Air carriers and those commercial operators engaged in scheduled intrastate common carriage.

(a)(1) Airplanes, more than 30 seats/7,500 pounds payload, scheduled within 48 States.

(a)(2) Airplanes, more than 30 seats/7,500 pounds payload, not scheduled and all cargo.

(a)(3) Airplanes, more than 30 seats/7,500 pounds payload, scheduled outside 48 States.

(b) Airplanes, 30 seats or less/7,500 pounds payload.

(c) Rotorcraft, 30 seats or less/7,500 pounds payload.

(d) Rotorcraft, more than 30 seats/more than 7,500 pounds payload.

5. Operations conducted by a person who is not engaged in air carrier operations, but is engaged in passenger operations, cargo operations, or both, as a commercial operator.

(a) Airplanes, 20 or more seats/6,000 or more pounds payload.
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(b) Airplanes, less than 20 seats/Less than 6,000 pounds payload.

(c) Rotorcraft, 30 seats or less/7,500 pounds or less payload.

(d) Rotorcraft, more than 30 seats/more than 7,500 pounds payload.

6. Definitions.

(a) Terms in F A R.

(1) Domestic/flag/supplemental/commuter.

(2) ATCO.

(b) F A R references to:

(1) Domestic air carriers.

(2) Flag air carriers.

(3) Supplemental air carriers.

(4) Commuter air carriers.

(c) SFAR terms.

(1) Air carrier.

(2) Commercial operator.

(3) Foreign air carrier.

(4) Scheduled operations.

(5) Size of aircraft.

(6) Maximum payload capacity.

(7) Empty weight.

(8) Maximum zero fuel weight.

(9) Justifiable aircraft equipment.

Contrary provisions of parts 121, 125, 127, 129, and 135 of the Federal Aviation Regulations notwithstanding—

1. Applicability.

(a) This Special Federal Aviation Regulation applies to persons operating civil aircraft in commercial passenger operations, cargo operations, or both, and prescribes—

(1) The types of operating certificates issued by the Federal Aviation Administration;

(2) The certification requirements an operator must meet in order to obtain and hold operations specifications for each type of operation conducted and each class and size of aircraft operated; and

(3) The operating requirements an operator must meet in conducting each type of operation and in operating each class and size of aircraft authorized in its operations specifications. A person shall be issued only one certificate and all operations shall be conducted under that certificate, regardless of the type of operation or the class or size of aircraft operated.

A person holding an air carrier operating certificate may not conduct any operations under the rules of part 125.

(b) Persons conducting operations under more than one paragraph of this SFAR shall meet the certification requirements specified in each paragraph and shall conduct operations in compliance with the requirements of the Federal Aviation Regulations specified in each paragraph for the operation conducted under that paragraph.

(c) Except as provided under this SFAR, no person may operate as an air carrier or as a commercial operator without, or in violation of, a certificate and operations specifications issued under this SFAR.

(d) Persons conducting operations under this SFAR shall continue to comply with the applicable requirements of §§121.6, 121.57, 121.59, 121.61, 121.71 through 121.83, 135.5, 135.11(c), 135.15, 135.17, 135.27, 135.29, 135.33, 135.35, 135.37, and 135.39 of this chapter as in effect on January 18, 1996, until March 20, 1997, or until the date on which the certificate holder is issued operations specifications in accordance with part 119, whichever occurs first. A copy of these regulations may be obtained from the Federal Aviation Administration, Office of Rulemaking (ARM), 800 Independence Ave., SW., Washington, DC 20591, or by phone (202) 267-9677.

2. Certificates and foreign air carrier operations specifications.

(a) Persons authorized to conduct operations as an air carrier will be issued an Air Carrier Operating Certificate.

(b) Persons who are not authorized to conduct air carrier operations, but who are authorized to conduct passenger, cargo, or both, operations as a commercial operator will be issued an Operating Certificate.

(c) FAA certificates are not issued to foreign air carriers. Persons authorized to conduct operations in the United States as a foreign air carrier who hold a permit issued under Section 402 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1372), or other appropriate economic or exemption authority issued by the appropriate agency of the United States of America will be issued operations specifications in accordance with the requirements of part 129 and shall conduct their operations within the United States in accordance with those requirements.


The operations specifications associated with a certificate issued under paragraph 2 (a) or (b) and the operations specifications issued under paragraph 2 (c) of this SFAR will prescribe the authorizations, limitations and certain procedures under which each type of operation shall be conducted and each class and size of aircraft shall be operated.

4. Air carriers, and those commercial operators engaged in scheduled intrastate common carriage.

Each person who conducts operations as an air carrier or as a commercial operator engaged in scheduled intrastate common carriage of persons or property for compensation or hire in air commerce with—

(a) Airplanes having a passenger seating configuration of more than 30 seats, excluding any required crewmember seat, or a payload capacity of more than 7,500 pounds, shall comply with the certification requirements in part 121, and conduct its—

(1) Scheduled operations within the 48 contiguous states of the United States and the District of Columbia, including routes that extend outside the United States that are
specifically authorized by the Administrator, with those airplanes in accordance with the requirements of part 121 applicable to domestic air carriers, and shall be issued operations specifications for those operations in accordance with those requirements.

(2) Scheduled operations to points outside the 48 contiguous states of the United States and the District of Columbia with those airplanes in accordance with the requirements of part 121 applicable to flag air carriers, and shall be issued operations specifications for those operations in accordance with those requirements.

(3) All-cargo operations and operations that are not scheduled with those airplanes in accordance with the requirements of part 121 applicable to supplemental air carriers, and shall be issued operations specifications for those operations in accordance with those requirements; except the Administrator may authorize those operations to be conducted under paragraph (4)(a) (1) or (2) of this paragraph.

(b) Airplanes having a maximum passenger seating configuration of 30 seats or less, excluding any required crewmember seat, and a maximum payload capacity of 7,500 pounds or less, shall comply with the certification requirements in part 135, and conduct its operations with those airplanes in accordance with those requirements; except the Administrator may authorize operations in transport category airplanes to conduct those operations in accordance with the requirements of paragraph 4(a) of this paragraph.

(c) Rotorcraft having a maximum passenger seating configuration of 30 seats or less and a maximum payload capacity of 7,500 pounds or less shall comply with the certification requirements in part 135, and conduct its operations in those airplanes in accordance with those requirements.

(d) Rotorcraft having a passenger seating configuration of more than 30 seats or a payload capacity of more than 7,500 pounds shall comply with the certification requirements in part 135, and conduct its operations with those aircraft in accordance with those requirements.

Each person, other than a person conducting operations under paragraph 2(c) or 4 of this SFAR, who conducts operations with—

(a) Airplanes having a passenger seating configuration of 20 or more, excluding any required crewmember seat, or a maximum payload capacity of 6,000 pounds or more, shall comply with the certification requirements in part 135, and conduct its operations with those airplanes in accordance with the requirements of part 125, and shall be issued operations specifications in accordance with those requirements, or shall comply with an appropriate deviation authority.

(b) Airplanes having a maximum passenger seating configuration of less than 20 seats, excluding any required crewmember seat, and a maximum payload capacity of less than 6,000 pounds shall comply with the certification requirements in part 135, and conduct its operations in those airplanes in accordance with the requirements of part 135, and shall be issued operations specifications in accordance with those requirements.

(c) Rotorcraft having a maximum passenger seating configuration of 30 seats or less and a maximum payload capacity of 7,500 pounds or less shall comply with the certification requirements in part 135, and conduct its operations in those airplanes in accordance with those requirements.

(d) Rotorcraft having a passenger seating configuration of more than 30 seats or a payload capacity of more than 7,500 pounds shall comply with the certification requirements in part 135, and conduct its operations with those aircraft in accordance with the requirements of part 135, and shall be issued special operations specifications for those operations in accordance with those requirements and this SFAR.

6. Definitions.

(a) Wherever in the Federal Aviation Regulations the terms—

(1) Domestic air carrier operating certificate, flag air carrier operating certificate, supplemental air carrier operating certificate, or commuter air carrier (in the context of Air Carrier Operating Certificate) appears, it shall be deemed to mean an Air Carrier Operating Certificate issued and maintained under this SFAR.

(2) ATCO operating certificate appears, it shall be deemed to mean either an Air Carrier Operating Certificate or Operating Certificate, as is appropriate to the context of the regulation. All other references to an operating certificate shall be deemed to mean an Operating Certificate issued under this SFAR unless the context indicates the reference is to an Air Carrier Operating Certificate.

(b) Wherever in the Federal Aviation Regulations a regulation applies to—
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4. Indoctrination Curriculums.

3. Required Curriculums.

2. Definitions.

1. Purpose and eligibility.

SPECIAL FEDERAL AVIATION REGULATION

SFAR NO. 58—ADVANCED QUALIFICATION PROGRAM

Section
1. Purpose and eligibility.
2. Definitions.
3. Required Curriculums.
4. Indoctrination Curriculums.
5. Qualification Curriculums.
6. Continuing Qualification Curriculums.
7. Other Requirements.
8. Certification.
9. Training Devices and Simulators.
10. Approval of Advanced Qualification Program.
11. Approval of Training, Qualification, or Evaluation by a Person Who Provides Training by Arrangement.
12. Recordkeeping requirements.

Contrary provisions of parts 61, 63, 65, 121, and 135 of the Federal Aviation Regulations notwithstanding—

1. Purpose and Eligibility.
   (a) This Special Federal Aviation Regulation provides for approval of an alternate method (known as “Advanced Qualification Program” or “AQP”) for qualifying, training, certifying, and otherwise ensuring competency of crewmembers, aircraft dispatchers, other operations personnel, instructors, and evaluators who are required to be trained or qualified under parts 121 and 135 of the FAR or under this SFAR.
   (b) A certificate holder is eligible under this Special Federal Aviation Regulation if the certificate holder is required to have an approved training program under §121.401 or §135.341 of the FAR, or elects to have an approved training program under §135.341.
   (c) A certificate holder obtains approval of each proposed curriculum under this AQP as specified in section 10 of this SFAR.
   (d) A curriculum approved under the AQP may include elements of present part 121 and part 135 training programs. Each curriculum must specify the make, model, and series aircraft (or variant) and each crewmember position or other positions to be covered by that curriculum. Positions to be covered by the AQP must include all flight crewmember positions, instructors, and evaluators and may include other positions, such as flight attendants, aircraft dispatchers, and other operations personnel.
   (e) Each certificate holder that obtains approval of an AQP under this SFAR shall comply with all of the requirements of that program.

2. Definitions. As used in this SFAR:
   (a) Curriculum means a portion of an Advanced Qualification Program that covers one of three program areas: (1) Indocitration, (2) qualification, or (3) continuing qualification. A qualification or continuing qualification curriculum addresses the required training and qualification activities for a specific make, model, and series aircraft (or variant) and for a specific duty position.
   (b) Evaluator means a person who has satisfactorily completed training and evaluation that qualifies that person to evaluate the performance of crewmembers, instructors, other evaluators, aircraft dispatchers, and other operations personnel.

3. Required Curriculums. Each AQP must have separate curriculums for indoctrination, qualification, and continuing qualification as specified in sections 4, 5, and 6 of this SFAR.

4. Indoctrination Curriculums. Each indoctrination curriculum must include the following:
   (a) For newly hired flight crewmembers and aircraft dispatchers: General aeronautical knowledge.
   (b) For instructors: The fundamental principles of the teaching and learning process; methods and theories of instruction; and the knowledge necessary to use aircraft, flight training devices, flight simulators, and other training equipment in advanced qualification curriculums.

5. Qualification Curriculums. Each qualification curriculum must include the following:
   (a) The certificate holder’s planned hours of training, evaluation, and supervised operating experience.
   (b) A list of and text describing the training, qualification, and certification activities, as applicable for specific positions subject to the AQP, as follows:
      (1) Crewmembers, aircraft dispatchers, and other operations personnel. Training, evaluation, and certification activities which are aircraft- and equipment-specific to qualify a person for a specific duty position or duties related to the operation of a specific make, model, and series aircraft (or variant); a list of and text describing the knowledge requirements, subject materials, job skills, and each maneuver and procedure to be trained and evaluated; the practical test requirements in addition to or in place of the requirements of parts 61, 63, and 65; and a list

Facility means the physical environment required for training and qualification (e.g., buildings, classrooms).

Training center means an organization certificated under part 142 of this chapter or an organization approved by the Administrator to operate under the terms of this SFAR to provide training as described in section 1(b) of SFAR 58.

Variant means a specifically configured aircraft for which the FAA has identified training and qualification requirements that are significantly different from those applicable to other aircraft of the same make, model, and series.

3. Required Curriculums. Each AQP must have separate curriculums for indoctrination, qualification, and continuing qualification as specified in sections 4, 5, and 6 of this SFAR.

4. Indoctrination Curriculums. Each indoctrination curriculum must include the following:
   (a) For newly hired flight crewmembers and aircraft dispatchers: General aeronautical knowledge.
   (b) For instructors: The fundamental principles of the teaching and learning process; methods and theories of instruction; and the knowledge necessary to use aircraft, flight training devices, flight simulators, and other training equipment in advanced qualification curriculums.

5. Qualification Curriculums. Each qualification curriculum must include the following:
   (a) The certificate holder’s planned hours of training, evaluation, and supervised operating experience.
   (b) A list of and text describing the training, qualification, and certification activities, as applicable for specific positions subject to the AQP, as follows:
      (1) Crewmembers, aircraft dispatchers, and other operations personnel. Training, evaluation, and certification activities which are aircraft- and equipment-specific to qualify a person for a specific duty position or duties related to the operation of a specific make, model, and series aircraft (or variant); a list of and text describing the knowledge requirements, subject materials, job skills, and each maneuver and procedure to be trained and evaluated; the practical test requirements in addition to or in place of the requirements of parts 61, 63, and 65; and a list
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of and text describing supervised operating experience.

(2) Instructors. Training and evaluation to qualify a person to impart instruction on how to operate, or on how to ensure the safe operation of a particular make, model, and series aircraft (or variant).

(3) Evaluators. Training, evaluation, and certification activities that are aircraft and equipment specific to qualify a person to evaluate the performance of persons who operate or who ensure the safe operation of, a particular make, model, and series aircraft (or variant).

6 Continuing Qualification Curriculums. Continuing qualification curriculums must comply with the following requirements:

(a) General. A continuing qualification curriculum must be based on

(i) A continuing qualification cycle that ensures that during each cycle each person qualified under an AQP, including instructors and evaluators, will receive a balanced mix of training and evaluation on all events and subjects necessary to ensure that each person maintains the minimum proficiency level of knowledge, skills, and attitudes required for original qualification; and

(ii) If applicable, flight crewmember or aircraft dispatcher recency of experience requirements.

(b) Continuing Qualification Cycle Content. Each continuing qualification cycle must include at least the following:

(1) Evaluation period. An evaluation period during which each person qualified under an AQP must receive at least one training session and a proficiency evaluation at a training facility. The number and frequency of training sessions must be approved by the Administrator. A training session, including any proficiency evaluation completed at that session, that occurs any time during the two calendar months before the last date for completion of an evaluation period can be considered by the certificate holder to be completed in the last calendar month.

(2) Training. Continuing qualification must include training in all events and major subjects required for original qualification, as follows:

(i) For pilots in command, seconds in command, flight engineers, and instructors and evaluators: Ground training including a general review of knowledge and skills covered in qualification training, updated information on newly developed procedures, and safety information.

(ii) For crewmembers, aircraft dispatchers, instructors, evaluators, and other operation personnel who conduct their duties in flight: Proficiency training in an aircraft, flight training device, or flight simulator on normal, abnormal, and emergency flight procedures and maneuvers.

(iii) For instructors and evaluators who are limited to conducting their duties in flight simulators and flight training devices: Proficiency training in a flight training device and/or flight simulator regarding operation of this training equipment and in operational flight procedures and maneuvers (normal, abnormal, and emergency).

(3) Evaluations. Continuing qualification must include evaluation in all events and major subjects required for original qualification, and online evaluations for pilots in command and other eligible flight crewmembers. Each person qualified under an AQP must successfully complete a proficiency evaluation and, if applicable, an online evaluation during each evaluation period. An individual's proficiency evaluation may be accomplished over several training sessions if a certificate holder provides more than one training session in an evaluation period. The following evaluation requirements apply:

(i) Proficiency evaluations as follows:

(A) For pilots in command, seconds in command, and flight engineers: A proficiency evaluation, portions of which may be conducted in an aircraft, flight simulator, or flight training device as approved in the certificate holder's curriculum which must be completed during each evaluation period.

(B) For any other person covered by an AQP a means to evaluate their proficiency in the performance of their duties in their assigned tasks in an operational setting.

(ii) Online evaluations as follows:

(A) For pilots in command: An online evaluation conducted in an aircraft during actual flight operations under part 121 or part 135 or during operationally (line) oriented flights, such as ferry flights or proving flights. An online evaluation in an aircraft must be completed in the calendar month that includes the midpoint of the evaluation period. An online evaluation that is satisfactorily completed in the calendar month before or the calendar month after the calendar month in which it becomes due is considered to have been completed during the calendar month it became due. However, in no case is an online evaluation under this paragraph required more often than once during an evaluation period.

(B) During the online evaluations required under paragraph (d)(3)(ii)(A) of this section, each person performing duties as a pilot in command, second in command, or flight engineer for that flight, must be individually evaluated to determine whether he or she—

(1) Remains adequately trained and currently proficient with respect to the particular aircraft, crew position, and type of operation in which he or she serves; and (2) Has sufficient knowledge and skills to operate effectively as part of a crew.

(4) Recency of experience. For pilots in command and seconds in command, and, if the certificate holder elects, flight engineers and
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aircraft dispatchers, approved recency of experience requirements.

(c) Duration periods. Initially the continuing qualification cycle approved for an AQP must not exceed 26 calendar months and the evaluation period may not exceed 39 calendar months. Thereafter, upon demonstration by a certificate holder that an extension is warranted, the Administrator may approve extensions of the continuing qualification cycle and the evaluation period in increments not exceeding 3 calendar months. However, a continuing qualification cycle may not exceed 26 calendar months.

(d) Requalification. Each continuing qualification curriculum must include a curriculum segment that covers the requirements for requalifying a crewmember, aircraft dispatcher, or other operations personnel who has not maintained continuing qualification.

7. Other Requirements. In addition to the requirements of sections 4, 5, and 6, each AQP qualification and continuing qualification curriculum must include the following requirements:

(a) Approved Cockpit Resource Management (CRM) Training applicable to each position for which training is provided under an AQP.

(b) Approved training on and evaluation of skills and proficiency of each person being trained under an AQP to use their cockpit resource management skills and their technical (piloting or other) skills in an actual or simulated operations scenario. For flight crewmembers this training and evaluation must be conducted in an approved flight training device or flight simulator.

(c) Data collection procedures that will ensure that the certificate holder provides information from its crewmembers, instructors, and evaluators that will enable the FAA to determine whether the training and evaluations are working to accomplish the overall objectives of the curriculum.

8. Certification. A person enrolled in an AQP is eligible to receive a commercial or airline transport pilot, flight engineer, or aircraft dispatcher certificate or appropriate rating based on the successful completion of training and evaluation events accomplished under that program if the following requirements are met:

(a) Training and evaluation of required knowledge and skills under the AQP must meet minimum certification and rating criteria established by the Administrator in parts 61, 63, or 65. The Administrator may accept substitutes for the practical test requirements of parts 61, 63, or 65, as applicable.

(b) The applicant satisfactorily completes the appropriate qualification curriculum.

(c) The applicant shows competence in required technical knowledge and skills (e.g., piloting) and cockpit resource management knowledge and skills in scenarios that test both types of knowledge and skills together.

(d) The applicant is otherwise eligible under the applicable requirements of part 61, 63, or 65.

9. Training Devices and Simulators.

(a) Qualification and approval of flight training devices and flight simulators. (i) Any training device or simulator that will be used in an AQP for one of the following purposes must be evaluated by the Administrator for assignment of a flight training device or flight simulator qualification level:

(1) Requalification.

(2) To be eligible to request evaluation for a qualification level of a flight training device or flight simulator an applicant must—

(i) Hold an operating certificate; or

(ii) Be a training center that has applied for authorization to the Administrator or has been authorized by the Administrator to conduct training or qualification under an AQP.

(iii) Each flight training device or flight simulator to be used by a certificate holder or training center for any of the purposes set forth in paragraph (a)(1) of this section must—

(1) Be, or have been, evaluated against a set of criteria established by the Administrator for a particular qualification level of simulation;

(2) Be approved for its intended use in a specified AQP; and

(3) Be part of a flight simulator or flight training device continuing qualification program approved by the Administrator.

(b) Approval of other Training Equipment. (i) Any training device that is intended to be used in an AQP for purposes other than those set forth in paragraph (a)(1) of this section must be approved by the Administrator for its intended use.

(ii) An applicant for approval of a training device under this paragraph must identify the device by its nomenclature and describe its intended use.

(iii) Each training device approved for use in an AQP must be part of a continuing program to provide for its serviceability and fitness to perform its intended function as approved by the Administrator.

10. Approval of Advanced Qualification Program.

(a) Approval Process. Each applicant for approval of an AQP curriculum under this SFAR shall apply for approval of that curriculum. Application for approval is made to
the certificate holder’s FAA Flight Standards District Office.

(b) Approval Criteria. An application for approval of an AQP curriculum will be approved if the program meets the following requirements:

(1) It must be submitted in a form and manner acceptable to the Administrator.

(2) It must meet all of the requirements of this SFAR.

(3) It must indicate specifically the requirements of parts 61, 63, 65, 121 or 135, as applicable, that would be replaced by an AQP curriculum. If a requirement of parts 61, 63, 65, 121, or 135 is replaced by an AQP curriculum, the certificate holder must show how the AQP curriculum provides an equivalent level of safety for each requirement that is replaced. Each applicable requirement of parts 61, 63, 65, 121 or 135, as applicable, and must include as part of its application a proposed transition plan (containing a calendar of events) for moving from its present approved training to the advanced qualification training.

(d) Advanced Qualification Program Revisions or Recissions of Approval. If after a certificate holder begins operations under an AQP, the Administrator finds that the certificate holder is not meeting the provisions of its approved AQP, the Administrator may require the certificate holder to make revisions in accordance with §121.405 or §135.325, as applicable, or to submit and obtain approval for a plan (containing a schedule of events) that the certificate holder must comply with and use to transition to an approved part 121 or part 135 training program, as appropriate.

11. Approval of Training, Qualification, or Evaluation by a Person Who Provides Training by Arrangement.

(a) A certificate holder under part 121 or part 135 may arrange to have AQP required training, qualification, or evaluation functions performed by another person (a training center) if the following requirements are met:

(1) The training center’s training and qualification curriculums, curriculum segments, or portions of curriculum segments in a certificate holder’s AQP must be approved by the Administrator as set forth in section 10 of this SFAR.

(b) An applicant for provisional approval of a curriculum, curriculum segment, or portion of a curriculum segment under this paragraph must show that the following requirements are met:

(1) The applicant must have a curriculum for the qualification and continuing qualification of each instructor or evaluator employed by the applicant.

(2) The applicant’s facilities must be found by the Administrator to be adequate for any planned training, qualification, or evaluation for a part 121 or part 135 certificate holder.

(3) Except for indoctrination curriculums, the curriculum, curriculum segment, or portion of a curriculum segment must identify the specific make, model, and series aircraft (or variant) and crewmember or other positions for which it is designed.

(c) A certificate holder who wants approval to use a training center’s provisionally approved curriculum, curriculum segment, or portion of a curriculum segment in its AQP, must show that the following requirements are met:

(1) Each instructor or evaluator used by the training center must meet all of the qualification and continuing qualification requirements that apply to employees of the certificate holder that has arranged for the training, including knowledge of the certificate holder’s operations.

(2) Each provisionally approved curriculum, curriculum segment, or portion of a curriculum segment must be approved by the Administrator for use in the certificate holder’s AQP. The Administrator will either provide approval or require modifications to ensure that each curriculum, curriculum segment, or portion of a curriculum segment is applicable to the certificate holder’s AQP.

(d) Approval for the training, qualification, or evaluation by a person who provides training by arrangement authorized by this section expires on August 3, 1998 unless that person meets the eligibility requirements specified under §121.402 or §135.324 of this chapter. After August 2, 1998 approval for the training, qualification, or evaluation, by a person who provides training by arrangement authorized by this section, shall be granted only to persons who meet the eligibility requirements specified under §121.402 or §135.234 of this chapter.

12. Recordkeeping Requirements. Each certificate holder and each training center holding AQP provisional approval shall show that it will establish and maintain records in sufficient detail to establish the training, qualification, and certification of each person qualified under an AQP in accordance
with the training, qualification, and certifica-
tion requirements of this SFAR.

13. Expiration. This Special Federal Avia-
tion Regulation terminates on October 2, 2000 unless sooner terminated.

[14 CFR Ch. I (1-1-99 Edition) SFAR No. 80]

SFAR No. 80—ALTERNATIVE COMMUNICA-
TIONS AND DISPATCHING PROCEDURES

1. Applicability. This Special Federal Avia-
tion Regulation applies to each holder of an air carrier or operating certificate (here-
after, certificate holder) that meets one of the following eligibility requirements:
a. The certificate holder conducts sched-
uled operations with airplanes having a pas-
senger-seat configuration of 30 seats or fewer, excluding each crewmember seat, and a payload capacity of 7,500 pounds or less under part 121 of this chapter.
b. The certificate holder conducts domestic operations in Alaska under part 121 of this chapter.

2. Alternative requirements.
a. If an operator described in paragraph 1.a. of this SFAR is conducting a flight with an airplane described in 1.a. and if commu-

nications cannot be maintained over the en-
tire route (which would be contrary to the requirement of § 121.99 of this chapter), such an operator may continue to operate over such a route subject to approval by the Ad-

ministrator. In granting such approval the Administrator considers the following:
  i. The operator has an established dispatch communication system.
  ii. Gaps in communication are not over the entire route, but only over portions of the route.
  iii. When communication gaps occur, they occur due to one or more of the following:
    A. Lack of infrastructure.
    B. Geographical considerations.
    C. Assigned operating altitude.
  iv. Procedures are established for the prompt re-establishment of communications.
  v. The operator has presented a plan or schedule for coming into compliance with the require-

ments of §121.99 of this chapter.

b. A certificate holder who conducts do-

mestic operations in Alaska may, notwith-

standing the requirements of § 121.99 of this chapter, use a communications system oper-

ated by the United States for those oper-

ations.

c. An operator described in paragraph 1.a. of this SFAR who conducts operations in Alaska may share the aircraft dispatcher re-

quired by § 121.395 with another operator de-

scribed in paragraph 1.a. of this SFAR who conducts operations in Alaska if authorized to do so by the Administrator. Before grant-

ing such an authorization, the Administrator considers:
  i. The operators' joint plans for complying with the aircraft dispatcher training rules in subpart N of part 121 of this chapter and the aircraft dispatcher qualification and duty time limitation rules in subpart P of part 121 of this chapter.
  ii. The number of flights for which the aircraft dispatcher would be responsible.
  iii. Whether the responsibilities of the dis-

patcher would be beyond the capability of a single dispatcher.

3. Expiration. This Special Federal Aviation Regulation terminates on March 12, 2001, unless sooner terminated.


Subpart A—General

§ 121.1 Applicability.

This part prescribes rules govern-

ing—

(a) The domestic, flag, and supple-

mental operations of each person who holds or is required to hold an Air Car-

rier Certificate or Operating Certifi-
cate under part 119 of this chapter.

(b) Each person employed or used by a certificate holder conducting oper-

ations under this part including mainte-

nance, preventive maintenance, and alteration of aircraft.

(c) Each person who applies for provi-
sional approval of an Advanced Quali-
fication Program curriculum, curricu-
lum segment, or portion of a curricu-
lum segment under SFAR No. 58 of 14 CFR part 121, and each person em-
ployed or used by an air carrier or com-
mercial operator under this part to per-
form training, qualification, or evalua-
tion functions under an Advanced Qualification Program under SFAR No. 58 of 14 CFR part 121.

(d) Nonstop sightseeing flights con-
ducted with airplanes having a pas-
senger-seat configuration of 30 seats or fewer and a maximum payload capac-
ity of 7,500 pounds or less that begin and end at the same airport, and are conducted within a 25 statute mile ra-

dius of that airport; however, except for operations subject to SFAR 50-2 of 14 CFR part 121, these operations, when conducted for compensation or hire,
must comply only with §§121.455 and 121.457, except that an operator who does not hold an air carrier certificate or an operating certificate is permitted to use a person who is otherwise authorized to perform aircraft maintenance or preventive maintenance duties and who is not subject to FAA-approved anti-drug and alcohol misuse prevention programs to perform—

(1) Aircraft maintenance or preventive maintenance on the operator’s aircraft if the operator would otherwise be required to transport the aircraft more than 50 nautical miles further than the repair point closest to the operator’s principal base of operations to obtain these services; or

(2) Emergency repairs on the operator’s aircraft if the aircraft cannot be safely operated to a location where an employee subject to FAA-approved programs can perform the repairs.

(e) Each person who is on board an aircraft being operated under this part.

(f) Each person who is an applicant for an Air Carrier Certificate or an Operating Certificate under part 119 of this chapter, when conducting proving tests.

[Doc. No. 28154, 60 FR 65925, Dec. 20, 1995]

§121.2 Compliance schedule for operators that transition to part 121; certain new entrant operators.

(a) Applicability. This section applies to the following:

(1) Each certificate holder that was issued an air carrier or operating certificate and operations specifications under the requirements of part 135 of this chapter or under SFAR No. 38±2 of 14 CFR part 121 before January 19, 1996, and that conducts scheduled passenger-carrying operations with:

(i) Nontransport category turbo-propeller powered airplanes type certificated after December 31, 1964, that have a passenger seat configuration of 10±19 seats;

(ii) Transport category turbo-propeller powered airplanes that have a passenger seat configuration of 20±30 seats; or

(iii) Turbojet engine powered airplanes having a passenger seat configuration of 1±30 seats.

(2) Each person who, after January 19, 1996, applies for or obtains an initial air carrier or operating certificate and operations specifications to conduct scheduled passenger-carrying operations in the kinds of airplanes described in paragraphs (a)(1)(i), (a)(1)(ii), or paragraph (a)(1)(iii) of this section.

(b) Obtaining operations specifications. A certificate holder described in paragraph (a)(1) of this section may not, after March 20, 1997, operate an airplane described in paragraphs (a)(1)(i), (a)(1)(ii), or (a)(1)(iii) of this section in scheduled passenger-carrying operations, unless it obtains operations specifications to conduct its scheduled operations under this part on or before March 20, 1997.

(c) Regular or accelerated compliance. Except as provided in paragraphs (d), (e), and (i) of this section, each certificate holder described in paragraphs (a)(1) of this section shall comply with each applicable requirement of this part on and after March 20, 1997 or on and after the date on which the certificate holder is issued operations specifications under this part, whichever occurs first. Except as provided in paragraphs (d) and (e) of this section, each person described in paragraph (a)(2) of this section shall comply with each applicable requirement of this part on and after the date on which that person is issued a certificate and operations specifications under this part.

(d) Delayed compliance dates. Unless paragraph (e) of this section specifies an earlier compliance date, no certificate holder that is covered by paragraph (a) of this section may operate an airplane in 14 CFR part 121 operations on or after a date listed in this paragraph (d) unless that airplane meets the applicable requirement of this paragraph (d):

(1) Nontransport category turbo-propeller powered airplanes type certificated after December 31, 1964, that have a passenger seat configuration of 10-19 seats; or

(2) Each person who, after January 19, 1996, applies for or obtains an initial air carrier or operating certificate and operations specifications to conduct scheduled passenger-carrying operations in the kinds of airplanes described in paragraphs (a)(1)(i), (a)(1)(ii), or paragraph (a)(1)(iii) of this section.

(i) December 20, 1997:
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(A) Section 121.289, Landing gear aural warning.
(B) Section 121.308, Lavatory fire protection.
(C) Section 121.310(e), Emergency exit handle illumination.
(D) Section 121.337(b)(8), Protective breathing equipment.
(E) Section 121.340, Emergency flotation means.
(ii) December 20, 1999: Section 121.342, Pitot heat indication system.
(iii) December 20, 2010:
(A) For airplanes described in §121.157(f), the Airplane Performance Operating Limitations in §§121.189 through 121.197.
(B) Section 121.161(b), Ditching approval.
(C) Section 121.305(j), Third attitude indicator.
(D) Section 121.312(c), Passenger seat cushion flammability.
(iv) March 12, 1999: Section 121.310(b)(1), Interior emergency exit locating sign.
(2) Transport category turbopropeller powered airplanes that have a passenger seat configuration of 20-30 seats.
No certificate holder may operate under this part an airplane that is described in paragraph (a)(1)(ii) of this section on or after a date listed in paragraph (d)(2) of this section unless that airplane meets the applicable requirement listed in paragraph (d)(2) of this section:
(i) December 20, 1997:
(A) Section 121.308, Lavatory fire protection.
(B) Section 121.337(b)(8) and (9), Protective breathing equipment.
(C) Section 121.340, Emergency flotation means.
(ii) December 20, 2010: §121.305(j), third attitude indicator.
(e) Newly manufactured airplanes. No certificate holder that is described in paragraph (a) of this section may operate under this part an airplane manufactured on or after a date listed in this paragraph unless that airplane meets the applicable requirement listed in this paragraph (e).
(1) For nontransport category turbopropeller powered airplanes type certificated after December 31, 1964, that have a passenger seat configuration of 10-19 seats:
(i) Manufactured on or after March 20, 1997:
(A) Section 121.305(j), Third attitude indicator.
(B) Section 121.311(f), Safety belts and shoulder harnesses.
(ii) Manufactured on or after December 20, 1997; Section 121.317(a), Fasten seat belt light.
(iii) Manufactured on or after December 20, 1999: Section 121.293, Takeoff warning system.
(iv) Manufactured on or after March 12, 1999: Section 121.310(b)(1), Interior emergency exit locating sign.
(2) For transport category turbopropeller powered airplanes that have a passenger seat configuration of 20-30 seats manufactured on or after March 20, 1997: Section 121.305(j), Third attitude indicator.
(f) New type certification requirements. No person may operate an airplane for which the application for a type certificate was filed after March 29, 1995, in 14 CFR part 121 operations unless that airplane is type certificated under part 25 of this chapter.
(g) Transition plan. Before March 19, 1996 each certificate holder described in paragraph (a)(1) of this section must submit to the FAA a transition plan (containing a calendar of events) for moving from conducting its scheduled operations under the commuter requirements of part 135 of this chapter to the requirements for domestic or flag operations under this part. Each transition plan must contain details on the following:
(1) Plans for obtaining new operations specifications authorizing domestic or flag operations;
(2) Plans for being in compliance with the applicable requirements of this part on or before March 20, 1997; and
(3) Plans for complying with the compliance date schedules contained in paragraphs (d) and (e) of this section.
(h) Continuing requirements. A certificate holder described in paragraph (a) of this section shall comply with the applicable airplane operating and equipment requirements of part 135 of this chapter for the airplanes described in paragraph (a)(1) of this section, until
§ 121.93 Route requirements: General.

(a) Each certificate holder conducting domestic or flag operations seeking a route approval must show—
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(1) That it is able to conduct satisfactorily scheduled operations between each regular, provisional, and refueling airport over that route or route segment; and

(2) That the facilities and services required by §§ 121.97 through 121.107 are available and adequate for the proposed operation.

The Administrator approves a route outside of controlled airspace if he determines that traffic density is such that an adequate level of safety can be assured.

(b) Paragraph (a) of this section does not require actual flight over a route or route segment if the certificate holder shows that the flight is not essential to safety, considering the availability and adequacy of airports, lighting, maintenance, communication, navigation, fueling, ground, and airplane radio facilities, and the ability of the personnel to be used in the proposed operation.

§ 121.97 Airports: Required data.

(a) Each certificate holder conducting domestic or flag operations must show that each route it submits for approval has enough airports that are properly equipped and adequate for the proposed operation, considering such items as size, surface, obstructions, facilities, public protection, lighting, navigational and communications aids, and ATC.

(b) Each certificate holder conducting domestic or flag operations must show that it has an approved system for obtaining, maintaining, and distributing to appropriate personnel current aeronautical data for each airport it uses to ensure a safe operation at that airport. The aeronautical data must include the following:

(1) Airports.
   (i) Facilities.
   (ii) Public protection.
   (iii) Navigational and communications aids.
   (iv) Construction affecting takeoff, landing, or ground operations.
   (v) Air traffic facilities.

(2) Runways, clearways and stopways.
   (i) Dimensions.
   (ii) Surface.
   (iii) Marking and lighting systems.
   (iv) Elevation and gradient.

(3) Displaced thresholds.
   (i) Location.
   (ii) Dimensions.
   (iii) Takeoff or landing or both.

(4) Obstacles.
   (i) Those affecting takeoff and landing performance computations in accordance with Subpart I of this part.
   (ii) Controlling obstacles.

(5) Instrument flight procedures.
   (i) Departure procedure.
   (ii) Approach procedure.
   (iii) Missed approach procedure.

(6) Special information.
   (i) Runway visual range measurement equipment.
   (ii) Prevailing winds under low visibility conditions.

(c) If the certificate-holding district office charged with the overall inspection of the certificate holder's operations finds that revisions are necessary for the continued adequacy of the certificate holder's system for collection, dissemination, and usage of aeronautical data that has been granted approval, the certificate holder shall, after notification by the certificate-holding district office, make those
revisions in the system. Within 30 days after the certificate holder receives such notice, the certificate holder may file a petition to reconsider the notice with the Director, Flight Standards Service. This filing of a petition to reconsider stays the notice pending a decision by the Director, Flight Standards Service. However, if the certificate-holding district office finds that there is an emergency that requires immediate action in the interest of safety in air transportation, the Director, Flight Standards Service may, upon statement of the reasons, require a change effective without stay.

§ 121.99 Communication facilities.

(a) Each certificate holder conducting domestic or flag operations must show that a two-way radio communication system or other means of communication approved by the Administrator is available at points that will ensure reliable and rapid communications, under normal operating conditions over the entire route (either direct or via approved point-to-point circuits) between each airplane and the appropriate dispatch office, and between each airplane and the appropriate air traffic control unit, except as specified as § 121.351(c).

(b) For the following types of operations, the communications systems between each airplane and the dispatch office must be independent of any system operated by the United States:

(1) All domestic operations;

(2) Flag operations in the 48 contiguous States and the District of Columbia;

(3) After March 12, 2001, flag operations outside the 48 contiguous States and the District of Columbia.

§ 121.101 Weather reporting facilities.

(a) Each certificate holder conducting domestic or flag operations must show that enough weather reporting services are available along each route to ensure weather reports and forecasts necessary for the operation.

(b) Except as provided in paragraph (d) of this section, no certificate holder conducting domestic or flag operations may use any weather report to control flight unless—

(1) For operations within the 48 contiguous States and the District of Columbia, it was prepared by the U.S. National Weather Service or a source approved by the U.S. National Weather Service; or

(2) For operations conducted outside the 48 contiguous States and the District of Columbia, it was prepared by a source approved by the Administrator.

(c) Each certificate holder conducting domestic or flag operations that uses forecasts to control flight movements shall use forecasts prepared from weather reports specified in paragraph (b) of this section and from any source approved under its system adopted pursuant to paragraph (d) of this section.

(d) Each certificate holder conducting domestic or flag operations shall adopt and put into use an approved system for obtaining forecasts and reports of adverse weather phenomena, such as clear air turbulence, thunderstorms, and low altitude wind shear, that may affect safety of flight on each route to be flown and at each airport to be used.

§ 121.103 En route navigational facilities.

(a) Except as provided in paragraph (b) of this section, each certificate holder conducting domestic or flag operations must show, for each proposed route, that nonvisual ground aids are—

(1) Available over the route for navigating aircraft within the degree of accuracy required for ATC; and

(2) Located to allow navigation to any regular, provisional, refueling, or alternate airport, within the degree of accuracy necessary for the operation involved.

(b) Except as provided in paragraph (d) of this section, no certificate holder conducting domestic or flag operations may use any weather report to control flight unless—

(1) For operations within the 48 contiguous States and the District of Columbia, it was prepared by the U.S. National Weather Service or a source approved by the U.S. National Weather Service; or

(2) For operations conducted outside the 48 contiguous States and the District of Columbia, it was prepared by a source approved by the Administrator.

(c) Each certificate holder conducting domestic or flag operations shall adopt and put into use an approved system for obtaining forecasts and reports of adverse weather phenomena, such as clear air turbulence, thunderstorms, and low altitude wind shear, that may affect safety of flight on each route to be flown and at each airport to be used.

§ 121.103 En route navigational facilities.

(a) Except as provided in paragraph (b) of this section, each certificate holder conducting domestic or flag operations must show, for each proposed route, that nonvisual ground aids are—

(1) Available over the route for navigating aircraft within the degree of accuracy required for ATC; and

(2) Located to allow navigation to any regular, provisional, refueling, or alternate airport, within the degree of accuracy necessary for the operation involved.

Except for those aids required for routes to alternate airports, nonvisual ground aids required for approval of routes outside of controlled airspace are listed in the certificate holder’s operations specifications.
(b) Nonvisual ground aids are not required for—
   (1) Day VFR operations that the certificate holder shows can be conducted safely by pilotage because of the characteristics of the terrain;
   (2) Night VFR operations on routes that the certificate holder shows have reliably lighted landmarks adequate for safe operation; and
   (3) Operations on route segments where the use of celestial or other specialized means of navigation is approved by the Administrator.


§ 121.105 Servicing and maintenance facilities.

Each certificate holder conducting domestic or flag operations must show that competent personnel and adequate facilities and equipment (including spare parts, supplies, and materials) are available at such points along the certificate holder’s route as are necessary for the proper servicing, maintenance, and preventive maintenance of airplanes and auxiliary equipment.

[Doc. No. 28154, 61 FR 2610, Jan. 26, 1996]

§ 121.107 Dispatch centers.

Each certificate holder conducting domestic or flag operations must show that it has enough dispatch centers, adequate for the operations to be conducted, that are located at points necessary to ensure proper operational control of each flight.

[Doc. No. 28154, 61 FR 2610, Jan. 26, 1996]

Subpart F—Approval of Areas and Routes for Supplemental Operations

SOURCE: Docket No. 6258, 29 FR 19195, Dec. 31, 1964, unless otherwise noted.

§ 121.111 Applicability.

This subpart prescribes rules for obtaining approval of areas and routes by certificate holders conducting supplemental operations.

[Doc. No. 28154, 61 FR 2610, Jan. 26, 1996]
§ 121.117 Airports: Required data.

(a) No certificate holder conducting supplemental operations may use any airport unless it is properly equipped and adequate for the proposed operation, considering such items as size, surface, obstructions, facilities, public protection, lighting, navigational and communications aids, and ATC.

(b) Each certificate holder conducting supplemental operations must show that it has an approved system for obtaining, maintaining, and distributing to appropriate personnel current aeronautical data for each airport it uses to ensure a safe operation at that airport. The aeronautical data must include the following:

(1) Airports.

(i) Facilities.

(ii) Public protection.

(iii) Navigational and communications aids.

(iv) Construction affecting takeoff, landing, or ground operations.

(v) Air traffic facilities.

(2) Runways, clearways, and stopways.

(i) Dimensions.

(ii) Surface.

(iii) Marking and lighting systems.

(iv) Elevation and gradient.

(3) Displaced thresholds.

(i) Location.

(ii) Dimensions.

(iii) Takeoff or landing or both.

(4) Obstacles.

(i) Those affecting takeoff and landing performance computations in accordance with Subpart I of this part.

(ii) Controlling obstacles.

(5) Instrument flight procedures.

(i) Departure procedure.

(ii) Approach procedure.

(iii) Missed approach procedure.

(iv) Communication.

(i) Runway visual range measurement equipment.

(ii) Prevailing winds under low visibility conditions.

(c) If the certificate-holding district office charged with the overall inspection of the certificate holder's operations finds that revisions are necessary for the continued adequacy of the certificate holder's system for collection, dissemination, and usage of aeronautical data that has been granted approval, the certificate holder shall, after notification by the certificate-holding district office, make those revisions in the system. Within 30 days after the certificate holder receives such notice, the certificate holder may file a petition to reconsider the notice with the Director, Flight Standards Service. This filing of a petition to reconsider stays the notice pending a decision by the Director, Flight Standards Service. However, if the certificate-holding district office finds that there is an emergency that requires immediate action in the interest of safety in air transportation, the Director, Flight Standards Service may, upon a statement of the reasons, require a change effective without stay.

§ 121.119 Weather reporting facilities.

(a) No certificate holder conducting supplemental operations may use any weather report to control flight unless it was prepared and released by the U.S. National Weather Service or a source approved by the Weather Bureau. For operations outside the U.S., or at U.S. Military airports, where those reports are not available, the certificate holder must show that its weather reports are prepared by a source found satisfactory by the Administrator.

(b) Each certificate holder conducting supplemental operations that uses forecasts to control flight movements shall use forecasts prepared from weather reports specified in paragraph (a) of this section.

§ 121.121 En route navigational facilities.

(a) Except as provided in paragraph (b) of this section, no certificate holder conducting supplemental operations
§ 121.123 Servicing maintenance facilities.

Each certificate holder conducting supplemental operations must show that competent personnel and adequate facilities and equipment (including spare parts, supplies, and materials) are available for the proper servicing, maintenance, and preventive maintenance of aircraft and auxiliary equipment.

[Doc. No. 28154, 61 FR 2611, Jan. 26, 1996]

§ 121.125 Flight following system.

(a) Each certificate holder conducting supplemental operations must show that it has—

(1) An approved flight following system established in accordance with subpart U of this part and adequate for the proper monitoring of each flight, considering the operations to be conducted; and

(2) Flight following centers located at those points necessary—

(i) To ensure the proper monitoring of the progress of each flight with respect to its departure at the point of origin and arrival at its destination, including intermediate stops and diversions therefrom, and maintenance or mechanical delays encountered at those points or stops; and

(ii) To ensure that the pilot in command is provided with all information necessary for the safety of the flight.

(b) A certificate holder conducting supplemental operations may arrange to have flight following facilities provided by persons other than its employees, but in such a case the certificate holder continues to be primarily responsible for operational control of each flight.

(c) A flight following system need not provide for in-flight monitoring by a flight following center.

(d) The certificate holder’s operations specifications specify the flight following system it is authorized to use and the location of the centers.


§ 121.127 Flight following system; requirements.

(a) Each certificate holder conducting supplemental operations using a flight following system must show that—

(1) The system has adequate facilities and personnel to provide the information necessary for the initiation and safe conduct of each flight to—

(i) The flight crew of each aircraft; and

(ii) The persons designated by the certificate holder to perform the function of operational control of the aircraft; and

(2) The system has a means of communication by private or available public facilities (such as telephone, telegraph, or radio) to monitor the progress of each flight with respect to its departure at the point of origin and arrival at its destination, including intermediate stops and diversions therefrom, and maintenance or mechanical delays encountered at those points or stops.

(b) The certificate holder conducting supplemental operations must show
that the personnel specified in paragraph (a) of this section, and those it designates to perform the function of operational control of the aircraft, are able to perform their required duties.


Subpart G—Manual Requirements

§ 121.131 Applicability.

This subpart prescribes requirements for preparing and maintaining manuals by all certificate holders.

[Doc. No. 6258, 29 FR 19196, Dec. 31, 1964]

§ 121.133 Preparation.

(a) Each certificate holder shall prepare and keep current a manual for the use and guidance of flight, ground operations, and management personnel in conducting its operations.

(b) For the purpose of this subpart, the certificate holder may prepare that part of the manual containing maintenance information and instructions, in whole or in part, in printed form or other form acceptable to the Administrator.

[Doc. No. 28154, 60 FR 65926, Dec. 20, 1995]

§ 121.135 Contents.

(a) Each manual required by § 121.133 must—

(1) Include instructions and information necessary to allow the personnel concerned to perform their duties and responsibilities with a high degree of safety;

(2) Be in a form that is easy to revise;

(3) Have the date of last revision on each page concerned; and

(4) Not be contrary to any applicable Federal regulation and, in the case of a flag or supplemental operation, any applicable foreign regulation, or the certificate holder’s operations specifications or operating certificate.

(b) The manual may be in two or more separate parts, containing together all of the following information, but each part must contain that part of the information that is appropriate for each group of personnel:

(1) General policies.

(2) Duties and responsibilities of each crewmember, appropriate members of the ground organization, and management personnel.

(3) Reference to appropriate Federal Aviation Regulations.

(4) Flight dispatching and operational control, including procedures for coordinated dispatch or flight control or flight following procedures, as applicable.

(5) En route flight, navigation, and communication procedures, including procedures for the dispatch or release or continuance of flight if any item of equipment required for the particular type of operation becomes inoperative or unserviceable en route.

(6) For domestic or flag operations, appropriate information from the en route operations specifications, including for each approved route the types of airplanes authorized, the type of operation such as VFR, IFR, day, night, etc., and any other pertinent information.

(7) For supplemental operations, appropriate information from the operations specifications, including the area of operations authorized, the types of airplanes authorized, the type of operation such as VFR, IFR, day, night, etc., and any other pertinent information.

(8) Appropriate information from the airport operations specifications, including for each airport—

(i) Its location (domestic and flag operations only);

(ii) Its designation (regular, alternate, provisional, etc.) (domestic and flag operations only);

(iii) The types of airplanes authorized (domestic and flag operations only);

(iv) Instrument approach procedures;

(v) Landing and takeoff minimums; and

(vi) Any other pertinent information.

(9) Takeoff, en route, and landing weight limitations.

(10) Procedures for familiarizing passengers with the use of emergency equipment, during flight.

(11) Emergency equipment and procedures.

(12) The method of designating succession of command of flight crewmembers.

(13) Procedures for determining the usability of landing and takeoff areas,
§ 121.137 Distribution and availability.

(a) Each certificate holder shall furnish copies of the manual required by §121.133 (and the changes and additions thereto) or appropriate parts of the manual to—

(1) Its appropriate ground operations and maintenance personnel;

(2) Crewmembers; and

(3) Representatives of the Administrator assigned to it.

(b) Each person to whom a manual or appropriate parts of it are furnished under paragraph (a) of this section shall keep it up-to-date with the changes and additions furnished to that person and shall have the manual or appropriate parts of it accessible when performing assigned duties.

(c) For the purpose of complying with paragraph (a) of this section, a certificate holder may furnish the persons listed therein the maintenance part of the manual in printed form or other form, acceptable to the Administrator, that is retrievable in the English language.


§ 121.139 Requirements for manual aboard aircraft: Supplemental operations.

(a) Except is provided in paragraph (b) of this section, each certificate holder conducting supplemental operations shall carry appropriate parts of the manual on each airplane when away from the principal base of operations. The appropriate parts must be available for use by ground or flight personnel.
Federal Aviation Administration, DOT

§ 121.153 Aircraft requirements: General.

(a) Except as provided in paragraph (c) of this section, no certificate holder may operate an aircraft unless that aircraft—

(1) Is registered as a civil aircraft of the United States and carries an appropriate current airworthiness certificate issued under this chapter; and

(2) Is in an airworthy condition and meets the applicable airworthiness requirements of this chapter, including those relating to identification and equipment.

(b) A certificate holder may use an approved weight and balance control system based on average, assumed, or estimated weight to comply with applicable airworthiness requirements and operating limitations.

(c) A certificate holder may operate in common carriage, and for the carriage of mail, a civil aircraft which is leased or chartered to it without crew and is registered in a country which is a party to the Convention on International Civil Aviation if—

(1) The aircraft carries an appropriate airworthiness certificate issued by the country of registration and meets the registration and identification requirements of that country;

(2) The aircraft is of a type design which is approved under a U.S. type certificate and complies with all of the requirements of this chapter (14 CFR Chapter 1) that would be applicable to that aircraft were it registered in the United States, including the requirements which must be met for issuance of a U.S. standard airworthiness certificate (including type design conformity, condition for safe operation, and the noise, fuel venting, and engine emission requirements of this chapter), except that a U.S. registration certificate and a U.S. standard airworthiness certificate will not be issued for the aircraft;
§ 121.155

(3) The aircraft is operated by U.S.-certificated airmen employed by the certificate holder; and

(4) The certificate holder files a copy of the aircraft lease or charter agreement with the FAA Aircraft Registry, Department of Transportation, 6400 South MacArthur Boulevard, Oklahoma City, OK (Mailing address: P.O. Box 25504, Oklahoma City, OK 73125).


§ 121.155 [Reserved]

§ 121.157 Aircraft certification and equipment requirements.

(a) Airplanes certificated before July 1, 1942. No certificate holder may operate an airplane that was type certificated before July 1, 1942, unless—

(1) That airplane meets the requirements of §121.173(c), or

(2) That airplane and all other airplanes of the same or related type operated by that certificate holder meet the performance requirements of sections 4a.737-T through 4a.750-T of the Civil Air Regulations as in effect on January 31, 1965; or §§25.45 through 25.75 and §121.173(a), (b), (d), and (e) of this title.

(b) Airplanes certificated after June 30, 1942. Except as provided in paragraphs (c), (d), (e), and (f) of this section, no certificate holder may operate an airplane that was type certificated after June 30, 1942, unless it is certificated as a transport category airplane and meets the requirements of §121.173(a), (b), (d), and (e).

(c) C-46 type airplanes: passenger-carrying operations. No certificate holder may operate a C-46 airplane in passenger-carrying operations unless that airplane is operated in accordance with the operating limitations for transport category airplanes and meets the requirements of §121.173(a), (b), (d), and (e), except that—

(1) The requirements of sections 4b.0 through 4b.19 as in effect May 18, 1954, must be complied with;

(2) The birdproof windshield requirements of section 4b.352 need not be complied with;

(3) The provisions of sections 4b.480 through 4b.490 (except sections 4b.484(a)(1) and 4b.487(e)), as in effect May 16, 1953, must be complied with; and

(4) The provisions of paragraph 4b.484(a)(1), as in effect July 20, 1950, must be complied with.

In determining the takeoff path in accordance with section 4b.116 and the one-engine inoperative climb in accordance with section 4b.120 (a) and (b), the propeller of the inoperative engine may be assumed to be feathered if the airplane is equipped with either an approved means for automatically indicating when the particular engine has failed or an approved means for automatically feathering the propeller of the inoperative engine. The Administrator may authorize deviations from compliance with the requirements of sections 4b.130 through 4b.190 and subparts C, D, E, and F of part 4b (as designated in this paragraph) if he finds that (considering the effect of design changes) compliance is extremely difficult to accomplish and that service experience with the C-46 airplane justifies the deviation.

(d) C-46 type airplanes: cargo operations. No certificate holder may use a nontransport category C-46 type airplane in cargo operations unless—

(1) It is certificated at a maximum gross weight that is not greater than 48,000 pounds;

(2) It meets the requirements of §§121.199 through 121.205 using the performance data in appendix C to this part;

(3) Before each flight, each engine contains at least 25 gallons of oil; and

(4) After December 31, 1964—

(i) It is powered by a type and model engine as set forth in appendix C of this part, when certificated at a maximum gross takeoff weight greater than 45,000 pounds; and

(ii) It complies with the special airworthiness requirement set forth in §§121.213 through 121.287 of this part or in appendix C of this part.

(e) Commuter category airplanes. Except as provided in paragraph (f) of this
§ 121.159 Single-engine airplanes prohibited.

No certificate holder may operate a single-engine airplane under this part.

[Doc. No. 28154, 60 FR 65927, Dec. 20, 1995]

§ 121.161 Aircraft proving tests.

(a) Initial airplane proving tests. No person may operate an airplane not before proven for use in a kind of operation under this part or part 135 of this chapter unless an airplane of that type has had, in addition to the airplane type certificated under part 25 of this chapter.


§ 121.163 Aircraft proving tests.

(a) Initial airplane proving tests. No person may operate an airplane not before proven for use in a kind of operation under this part or part 135 of this chapter unless an airplane of that type has had, in addition to the airplane type certificated under part 25 of this chapter.

§ 121.171 Certification tests, at least 100 hours of proving tests acceptable to the Administrator, including a representative number of flights into en route airports. The requirement for at least 100 hours of proving tests may be reduced by the Administrator if the Administrator determines that a satisfactory level of proficiency has been demonstrated to justify the reduction. At least 10 hours of proving flights must be flown at night; these tests are irreducible.

(b) Proving tests for kinds of operations. Unless otherwise authorized by the Administrator, for each type of airplane, a certificate holder must conduct at least 50 hours of proving tests acceptable to the Administrator for each kind of operation it intends to conduct, including a representative number of flights into en route airports.

(c) Proving tests for materially altered airplanes. Unless otherwise authorized by the Administrator, for each type of airplane that is materially altered in design, a certificate holder must conduct at least 50 hours of proving tests acceptable to the Administrator for each kind of operation it intends to conduct with that airplane, including a representative number of flights into en route airports.

(d) Definition of materially altered. For the purposes of paragraph (c) of this section, a type of airplane is considered to be materially altered in design if the alteration includes—

1. The installation of powerplants other than those of a type similar to those with which it is certificated; or
2. Alterations to the aircraft or its components that materially affect flight characteristics.

(e) No certificate holder may carry passengers in an aircraft during proving tests, except for those needed to make the test and those designated by the Administrator. However, it may carry mail, express, or other cargo, when approved.

§ 121.175 Airplanes: Reciprocating engine-powered: Weight limitations.

(a) No person may take off a reciprocating engine powered airplane from an airport located at an elevation outside of the range for which maximum takeoff weights have been determined for that airplane.

(b) No person may take off a reciprocating engine powered airplane for an airport of intended destination that is located at an elevation outside of the range for which maximum landing weights have been determined for that airplane.

(c) No person may specify, or have specified, an alternate airport that is located at an elevation outside of the range for which maximum landing weights have been determined for the reciprocating engine powered airplane concerned.

(d) No person may take off a reciprocating engine powered airplane at a weight more than the maximum authorized takeoff weight for the elevation of the airport.

(e) No person may take off a reciprocating engine powered airplane if its weight on arrival at the airport of destination will be more than the maximum authorized landing weight for the elevation of that airport, allowing for normal consumption of fuel and oil en route.
(f) This section does not apply to large nontransport category airplanes operated under §121.173(c).


§ 121.177 Airplanes: Reciprocating engine-powered: Takeoff limitations.

(a) No person operating a reciprocating engine powered airplane may take off that airplane unless it is possible—

(1) To stop the airplane safely on the runway, as shown by the accelerate stop distance data, at any time during takeoff until reaching critical-engine failure speed;

(2) If the critical engine fails at any time after the airplane reaches critical-engine failure speed $V_1$, to continue the takeoff and reach a height of 50 feet, as indicated by the takeoff path data, before passing over the end of the runway; and

(3) To clear all obstacles either by at least 50 feet vertically (as shown by the takeoff path data) or 200 feet horizontally within the airport boundaries and 300 feet horizontally beyond the boundaries, without banking before reaching a height of 50 feet (as shown by the takeoff path data) and thereafter without banking more than 15 degrees.

(b) In applying this section, corrections must be made for the effective runway gradient. To allow for wind effect, takeoff data based on still air may be corrected by taking into account not more than 50 percent of any reported headwind component and not less than 150 percent of any reported tailwind component.

(c) This section does not apply to large nontransport category airplanes operated under §121.173(c).


§ 121.179 Airplanes: Reciprocating engine-powered: En route limitations.

(a) Except as provided in paragraph (b) of this section, no person operating a reciprocating engine powered airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that does not allow a rate of climb (in feet per minute), with all engines operating, of at least 6.90 $V_{So}$ (that is, the number of feet per minute is obtained by multiplying the number of knots by 6.90) at an altitude of at least 1,000 feet above the highest ground or obstruction within ten miles of each side of the intended track.

(b) This section does not apply to airplanes certificated under part 4a of the Civil Air Regulations.

(c) This section does not apply to large nontransport category airplanes operated under §121.173(c).

§ 121.183 Part 25 airplanes with four or more engines: Reciprocating engine powered: En route limitations: Two engines inoperative.

(a) No person may operate an airplane certificated under part 25 and having four or more engines unless—

(1) There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets the requirements of §121.187; or

(2) It is operated at a weight allowing the airplane, with the two critical engines inoperative, to climb at 0.013 \( V_{\text{so}}^2 \) feet per minute (that is, the number of feet per minute is obtained by multiplying the number of knots squared by 0.013) at an altitude of 1,000 feet above the highest ground or obstruction within 10 miles on each side of the intended track, or at an altitude of 5,000 feet, whichever is higher.

(b) For the purposes of paragraph (a)(2) of this section, it is assumed that—

(1) The two engines fail at the point that is most critical with respect to the takeoff weight;

(2) Consumption of fuel and oil is normal with all engines operating up to the point where the two engines fail and with two engines operating beyond that point;

(3) Where the engines are assumed to fail at an altitude above the prescribed minimum altitude, compliance with the prescribed rate of climb at the prescribed minimum altitude need not be shown during the descent from the cruising altitude to the prescribed minimum altitude, if those requirements can be met once the prescribed minimum altitude is reached, and assuming descent to be along a net flight path and the rate of descent to be 0.013 \( V_{\text{so}}^2 \) greater than the rate in the approved performance data; and

(4) If fuel jettisoning is provided, the airplane’s weight at the point where the two engines fail is considered to be not less than that which would include enough fuel to proceed to an airport meeting the requirements of §121.187 and to arrive at an altitude of at least 1,000 feet directly over that airport.

§ 121.185 Airplanes: Reciprocating engine-powered: Landing limitations: Destination airport.

(a) Except as provided in paragraph (b) of this section no person operating a reciprocating engine powered airplane may take off that airplane, unless its weight on arrival, allowing for normal consumption of fuel and oil in flight, would allow a full stop landing at the intended destination within 60 percent of the effective length of each runway described below from a point 50 feet directly above the intersection of the obstruction clearance plane and the runway. For the purposes of determining the allowable landing weight at the destination airport the following is assumed:

1. The airplane is landed on the most favorable runway and in the most favorable direction in still air.

2. The airplane is landed on the most suitable runway considering the probable wind velocity and direction (forecast for the expected time of arrival), the ground handling characteristics of the type of airplane, and other conditions such as landing aids and terrain, and allowing for the effect of the landing path and roll of not more than 50 percent of the headwind component or not less than 150 percent of the tailwind component.

(b) An airplane that would be prohibited from being taken off because it could not meet the requirements of paragraph (a)(2) of this section may be taken off if an alternate airport is specified that meets all of the requirements of this section except that the airplane can accomplish a full stop landing within 70 percent of the effective length of the runway.

(c) This section does not apply to large nontransport category airplanes operated under §121.173(c).


(a) No person may list an airport as an alternate airport in a dispatch or flight release unless the airplane (at the weight anticipated at the time of arrival at the airport), based on the assumptions in §121.185, can be brought to a full stop landing, within 70 percent of the effective length of the runway.

(b) This section does not apply to large nontransport category airplanes operated under §121.173(c).


§ 121.189 Airplanes: Turbine engine powered: Takeoff limitations.

(a) No person operating a turbine engine powered airplane may take off that airplane at a weight greater than that listed in the Airplane Flight Manual for the elevation of the airport and for the ambient temperature existing at takeoff.

(b) No person operating a turbine engine powered airplane certificated after August 26, 1957, but before August 30, 1959 (SR422, 422A), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual for the minimum distances required for takeoff. In the case of an airplane certificated after September 30, 1958 (SR422A, 422B), the takeoff distance may include a clearway distance but the clearway distance included may not be greater than 1/2 of the takeoff run.

(c) No person operating a turbine engine powered airplane certificated after August 29, 1959 (SR422B), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual at which compliance with the following may be shown:

1. The accelerate-stop distance must not exceed the length of the runway plus the length of any stopway.

2. The takeoff distance must not exceed the length of the runway plus the length of any clearway except that the length of any clearway included must not be greater than one-half the length of the runway.

3. The takeoff run must not be greater than the length of the runway.

(d) No person operating a turbine engine powered airplane may take off that airplane at a weight greater than that listed in the Airplane Flight Manual—

1. In the case of an airplane certificated after August 26, 1957, but before October 1, 1958 (SR422), that allows a
§ 121.191 Airplanes: Turbine engine powered: En route limitations: One engine inoperative.

(a) No person operating a turbine engine powered airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that is greater than that which (under the approved, one engine inoperative, en route net flight path data in the Airplane Flight Manual for that airplane) will allow compliance with paragraph (a) (1) or (2) of this section, based on the ambient temperatures expected en route:

(1) There is a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within five statute miles on each side of the intended track, and, in addition, if that airplane was certificated after August 29, 1959 (SR 422B) there is a positive slope at 1,500 feet above the airport where the airplane is assumed to land after an engine fails.

(2) The net flight path allows the airplane to continue flight from the cruising altitude to an airport where a landing can be made under $121.197$, clearing all terrain and obstructions within five statute miles of the intended track by at least 2,000 feet vertically and with a positive slope at 1,000 feet above the airport where the airplane lands after an engine fails, or, if that airplane was certificated after September 30, 1958 (SR 422B), with a positive slope at 1,500 feet above the airport where the airplane lands after an engine fails.

(b) For the purposes of paragraph (a)(2) of this section, it is assumed that—

(1) The engine fails at the most critical point en route;

(2) The airplane passes over the critical obstruction, after engine failure at a point that is no closer to the obstruction than the nearest approved radio navigation fix, unless the Administrator authorizes a different procedure based on adequate operational safeguards;

(3) An approved method is used to allow for adverse winds;

(4) Fuel jettisoning will be allowed if the certificate holder shows that the crew is properly instructed, that the training program is adequate, and that
all other precautions are taken to insure a safe procedure;

(5) The alternate airport is specified in the dispatch or flight release and meets the prescribed weather minimums; and

(6) The consumption of fuel and oil after engine failure is the same as the consumption that is allowed for in the approved net flight path data in the Airplane Flight Manual.

§ 121.197, with the net flight path (considering the ambient temperatures anticipated along the track) clearing vertically by at least 2,000 feet all terrain and obstructions within five statute miles (4.34 nautical miles) on each side of the intended track. For the purposes of this subparagraph, it is assumed that—

(i) The two engines fail at the most critical point en route;

(ii) The net flight path has a positive slope at 1,500 feet above the airport where the landing is assumed to be made after the engines fail;

(iii) Fuel jettisoning will be approved if the certificate holder shows that the crew is properly instructed, that the training program is adequate, and that all other precautions are taken to ensure a safe procedure;

(iv) The airplane’s weight at the point where the two engines are assumed to fail provides enough fuel to continue to the airport, to arrive at an altitude of at least 1,500 feet directly over the airport, and thereafter to fly for 15 minutes at cruise power or thrust, or both; and

(v) The consumption of fuel and oil after the engine failure is the same as the consumption that is allowed for in the net flight path data in the Airplane Flight Manual.


(a) No person operating a turbine engine powered airplane may take off that airplane at such a weight that (allowing for normal consumption of fuel and oil in flight to the destination or alternate airport) the weight of the airplane on arrival would exceed the landing weight set forth in the Airplane Flight Manual for the elevation of the destination airport and the wind conditions anticipated there at the time of landing, would allow a full stop landing at the intended destination airport within 60 percent of the effective length of each runway described below from a point 50 feet above the intersection of the obstruction clearance plane and the runway. For the purpose of determining the allowable landing weight at the destination airport the following is assumed:

(1) The airplane is landed on the most favorable runway and in the most favorable direction, in still air.

(2) The airplane is landed on the most suitable runway considering the probable wind velocity and direction and the ground handling characteristics of the airplane, and considering other conditions such as landing aids and terrain.

(c) A turbopropeller powered airplane that would be prohibited from being taken off because it could not meet the requirements of paragraph (b)(2) of this section, may be taken off if an alternate airport is specified that meets all the requirements of this section except that the airplane can accomplish a full stop landing within 70 percent of the effective length of the runway.

(d) Unless, based on a showing of actual operating landing techniques on wet runways, a shorter landing distance (but never less than that required by paragraph (b) of this section) has been approved for a specific type and model airplane and included in the Airplane Flight Manual, no person may takeoff a turbojet powered airplane when the appropriate weather reports and forecasts, or a combination thereof, indicate that the runways at the destination airport may be wet or slippery at the estimated time of arrival unless the effective runway length at the destination airport is at least 115 percent of the runway length required under paragraph (b) of this section.

(e) A turbojet powered airplane that would be prohibited from being taken off because it could not meet the requirements of paragraph (b)(2) of this section may be taken off if an alternate airport is specified that meets all

No person may list an airport as an alternate airport in a dispatch or flight release for a turbine engine powered airplane unless (based on the assumptions in §121.195(b)) that airplane at the weight anticipated at the time of arrival can be brought to a full stop landing within 70 percent of the effective length of the runway for turbo-propeller powered airplanes and 60 percent of the effective length of the runway for turbojet powered airplanes, from a point 50 feet above the intersection of the obstruction clearance plane and the runway. In the case of an alternate airport for departure, as provided in §121.617, allowance may be made for fuel jettisoning in addition to normal consumption of fuel and oil when determining the weight anticipated at the time of arrival.


§ 121.198 Cargo service airplanes: Increased zero fuel and landing weights.

(a) Notwithstanding the applicable structural provisions of the airworthiness regulations but subject to paragraphs (b) through (g) of this section, a certificate holder may operate (for cargo service only) any of the following airplanes (certificated under part 4b of the Civil Air Regulations effective before March 13, 1956) at increased zero fuel and landing weight—

(1) DC-6A, DC-6B, DC-7B, and DC-7C; and

(2) L1049B, C, D, E, F, G, and H, and the L1649A when modified in accordance with supplemental type certificates SA 4-1402.

(b) The zero fuel weight (maximum weight of the airplane with no disposable fuel and oil) and the structural landing weight may be increased beyond the maximum approved in full compliance with applicable regulations only if the Administrator finds that—

(1) The increase is not likely to reduce seriously the structural strength;

(2) The probability of sudden fatigue failure is not noticeably increased;

(3) The flutter, deformation, and vibration characteristics do not fall below those required by applicable regulations; and

(4) All other applicable weight limitations will be met.

(c) No zero fuel weight may be increased by more than five percent, and the increase in the structural landing weight may not exceed the amount, in pounds, of the increase in zero fuel weight.

(d) Each airplane must be inspected in accordance with the approved special inspection procedures, for operations at increased weights, established and issued by the manufacturer of the type of airplane.

(e) Each airplane operated under this section must be operated in accordance with the passenger-carrying performance operating limitations prescribed in this part.

(f) The Airplane Flight Manual for each airplane operated under this section must be appropriately revised to include the operating limitations and information needed for operation at the increased weights.

(g) Except as provided for the carrying of persons under §121.583 each airplane operated at an increased weight under this section must, before it is used in passenger service, be inspected under the special inspection procedures for return to passenger service established and issued by the manufacturer and approved by the Administrator.

§ 121.199 Nontransport category airplanes: Takeoff limitations.

(a) No person operating a non-transport category airplane may take off that airplane at a weight greater than the weight that would allow the airplane to be brought to a safe stop within the effective length of the runway, from any point during the takeoff before reaching 105 percent of minimum control speed (the minimum speed at which an airplane can be safely controlled in flight after an engine becomes inoperative) or 115 percent of
§ 121.203 Nontransport category airplanes: Landing limitations: Destination airport.

(a) No person operating a nontransport category airplane may take off that airplane at a weight that—

(1) Allowing for anticipated consumption of fuel and oil, is greater than the weight that would allow a full stop landing within 60 percent of the effective length of the most suitable runway at the destination airport; and

(2) Is greater than the weight allowable if the landing is to be made on the runway—

(i) With the greatest effective length in still air; and

(ii) Required by the probable wind, taking into account not more than 50 percent of the headwind component or not less than 150 percent of the tailwind component.

(b) For the purposes of this section, it is assumed that—

(1) The airplane passes directly over the intersection of the obstruction clearance plane and the runway at a
§ 121.205 Nontransport category airplanes: Landing limitations: Alternate airport.

No person may list an airport as an alternate airport in a dispatch or flight release for a nontransport category airplane unless that airplane (at the weight anticipated at the time of arrival) based on the assumptions contained in §121.203, can be brought to a full stop landing within 70 percent of the effective length of the runway.

§ 121.207 Provisionally certificated airplanes: Operating limitations.

In addition to the limitations in §91.317 of this chapter, the following limitations apply to the operation of provisionally certificated airplanes by certificate holders:

(a) In addition to crewmembers, each certificate holder may carry on such an airplane only those persons who are listed in §121.547(c) or who are specifically authorized by both the certificate holder and the Administrator.

(b) Each certificate holder shall keep a log of each flight conducted under this section and shall keep accurate and complete records of each inspection made and all maintenance performed on the airplane. The certificate holder shall make the log and records made under this section available to the manufacturer and the Administrator.

[Doc. No. 28154, 60 FR 65928, Dec. 20, 1995]

§ 121.211 Cabin interiors.

(a) Except as provided in paragraph (d) of this section, each airplane type certificated under Aero Bulletin 7A or part 04 of the Civil Air Regulations in effect before November 1, 1946 must meet the special airworthiness requirements in §§121.215 through 121.283.

(b) Each certificate holder must comply with the requirements of §§121.263 through 121.291.

(c) If the Administrator determines that, for a particular model of airplane used in cargo service, literal compliance with any requirement under paragraph (b) of this section would be extremely difficult and that compliance would not contribute materially to the objective sought, he may require compliance only with those requirements that are necessary to accomplish the basic objectives of this part.

(d) No person may operate under this part a nontransport category airplane type certificated after December 31, 1964, unless the airplane meets the special airworthiness requirements in §121.293.

§ 121.217 Internal doors.
In any case where internal doors are equipped with louvres or other ventilating means, there must be a means convenient to the crew for closing the flow of air through the door when necessary.

§ 121.219 Ventilation.
Each passenger or crew compartment must be suitably ventilated. Carbon monoxide concentration may not be more than one part in 20,000 parts of air, and fuel fumes may not be present. In any case where partitions between compartments have louvres or other means allowing air to flow between compartments, there must be a means convenient to the crew for closing the flow of air through the partitions, when necessary.

§ 121.221 Fire precautions.
(a) Each compartment must be designed so that, when used for storing cargo or baggage, it meets the following requirements:
(1) No compartment may include controls, wiring, lines, equipment, or accessories that would upon damage or failure, affect the safe operation of the airplane unless the item is adequately shielded, isolated, or otherwise protected so that it cannot be damaged by movement of cargo in the compartment and so that damage to or failure of the item would not create a fire hazard in the compartment.
(2) Cargo or baggage may not interfere with the functioning of the fire-protective features of the compartment.
(3) Materials used in the construction of the compartments, including tie-down equipment, must be at least flame resistant.
(4) Each compartment must include provisions for safeguarding against fires according to the classifications set forth in paragraphs (b) through (f) of this section.
(b) Class A. Cargo and baggage compartments are classified in the “A” category if—
(1) A fire therein would be readily discernible to a member of the crew while at his station; and
(2) All parts of the compartment are easily accessible in flight.
There must be a hand fire extinguisher available for each Class A compartment.
(c) Class B. Cargo and baggage compartments are classified in the “B” category if enough access is provided while in flight to enable a member of the crew to effectively reach all of the compartment and its contents with a hand fire extinguisher and the compartment is so designed that, when the access provisions are being used, no hazardous amount of smoke, flames, or extinguishing agent enters any compartment occupied by the crew or passengers. Each Class B compartment must comply with the following:
(1) It must have a separate approved smoke or fire detector system to give warning at the pilot or flight engineer station.
(2) There must be a hand fire extinguisher available for the compartment.
(3) It must be lined with fire-resistant material, except that additional service lining of flame-resistant material may be used.
(d) Class C. Cargo and baggage compartments are classified in the “C” category if they do not conform with the requirements for the “A”, “B”, “D”, or “E” categories. Each Class C compartment must comply with the following:
(1) It must have a separate approved smoke or fire detector system to give warning at the pilot or flight engineer station.
(2) It must have an approved built-in fire-extinguishing system controlled from the pilot or flight engineer station.
(3) It must be designed to exclude hazardous quantities of smoke, flames, or extinguishing agents from entering into any compartment occupied by the crew or passengers.
(4) It must have ventilation and draft controlled so that the extinguishing agent provided can control any fire that may start in the compartment.
(5) It must be lined with fire-resistant material, except that additional service lining of flame-resistant material may be used.
(e) Class D. Cargo and baggage compartments are classified in the “D” category if they are so designed and constructed that a fire occurring therein will be completely confined without
§ 121.223 Proof of compliance with § 121.221.

Compliance with those provisions of § 121.221 that refer to compartment accessibility, the entry of hazardous quantities of smoke or extinguishing agent into compartments occupied by the crew or passengers, and the dissipation of the extinguishing agent in Class “C” compartments must be shown by tests in flight. During these tests it must be shown that no inadvertent operation of smoke or fire detectors in other compartments within the airplane would occur as a result of fire contained in any one compartment, either during the time it is being extinguished, or thereafter, unless the extinguishing system floods those compartments simultaneously.

§ 121.225 Propeller deicing fluid.

If combustible fluid is used for propeller deicing, the certificate holder must comply with § 121.255.

§ 121.227 Pressure cross-feed arrangements.

(a) Pressure cross-feed lines may not pass through parts of the airplane used for carrying persons or cargo unless—
(1) There is a means to allow crewmembers to shut off the supply of fuel to these lines; or
(2) The lines are enclosed in a fuel and fume-proof enclosure that is ventilated and drained to the exterior of the airplane.

However, such an enclosure need not be used if those lines incorporate no fittings on or within the personnel or cargo areas and are suitably routed or protected to prevent accidental damage.

(b) Lines that can be isolated from the rest of the fuel system by valves at each end must incorporate provisions for relieving excessive pressures that may result from exposure of the isolated line to high temperatures.

§ 121.229 Location of fuel tanks.

(a) Fuel tanks must be located in accordance with § 121.255.

(b) No part of the engine nacelle skin that lies immediately behind a major air outlet from the engine compartment may be used as the wall of an integral tank.

(c) Fuel tanks must be isolated from personnel compartments by means of fume- and fuel-proof enclosures.

§ 121.231 Fuel system lines and fittings.

(a) Fuel lines must be installed and supported so as to prevent excessive vibration and so as to be adequate to withstand loads due to fuel pressure and accelerated flight conditions.

(b) Lines connected to components of the airplanes between which there may be relative motion must incorporate provisions for flexibility.
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(c) Flexible connections in lines that may be under pressure and subject to axial loading must use flexible hose assemblies rather than hose clamp connections.

(d) Flexible hose must be of an acceptable type or proven suitable for the particular application.

§ 121.233 Fuel lines and fittings in designated fire zones.

Fuel lines and fittings in each designated fire zone must comply with § 121.259.

§ 121.235 Fuel valves.

Each fuel valve must—
(a) Comply with § 121.257;
(b) Have positive stops or suitable index provisions in the “on” and “off” positions; and
(c) Be supported so that loads resulting from its operation or from accelerated flight conditions are not transmitted to the lines connected to the valve.

§ 121.237 Oil lines and fittings in designated fire zones.

Oil line and fittings in each designated fire zone must comply with § 121.259.

§ 121.239 Oil valves.

(a) Each oil valve must—
(1) Comply with § 121.257;
(2) Have positive stops or suitable index provisions in the “on” and “off” positions; and
(3) Be supported so that loads resulting from its operation or from accelerated flight conditions are not transmitted to the lines attached to the valve.
(b) The closing of an oil shutoff means must not prevent feathering the propeller, unless equivalent safety provisions are incorporated.

§ 121.241 Oil system drains.

Accessible drains incorporating either a manual or automatic means for positive locking in the closed position, must be provided to allow safe drainage of the entire oil system.

§ 121.243 Engine breather lines.

(a) Engine breather lines must be so arranged that condensed water vapor that may freeze and obstruct the line cannot accumulate at any point.

(b) Engine breathers must discharge in a location that does not constitute a fire hazard in case foaming occurs and so that oil emitted from the line does not impinge upon the pilots’ windshield.

(c) Engine breathers may not discharge into the engine air induction system.

§ 121.245 Fire walls.

Each engine, auxiliary power unit, fuel-burning heater, or other item of combustion equipment that is intended for operation in flight must be isolated from the rest of the airplane by means of firewalls or shrouds, or by other equivalent means.

§ 121.247 Fire-wall construction.

Each fire wall and shroud must—
(a) Be so made that no hazardous quantity of air, fluids, or flame can pass from the engine compartment to other parts of the airplane;
(b) Have all openings in the fire wall or shroud sealed with close-fitting fireproof grommets, bushings, or firewall fittings;
(c) Be made of fireproof material; and
(d) Be protected against corrosion.

§ 121.249 Cowling.

(a) Cowling must be made and supported so as to resist the vibration inertia, and air loads to which it may be normally subjected.
(b) Provisions must be made to allow rapid and complete drainage of the cowling in normal ground and flight attitudes. Drains must not discharge in locations constituting a fire hazard. Parts of the cowling that are subjected to high temperatures because they are near exhaust system parts or because of exhaust gas impingement must be made of fireproof material. Unless otherwise specified in these regulations all other parts of the cowling must be made of material that is at least fire resistant.

§ 121.251 Engine accessory section diaphragm.

Unless equivalent protection can be shown by other means, a diaphragm that complies with § 121.247 must be provided on air-cooled engines to isolate the engine power section and all
§ 121.253 Powerplant fire protection.

(a) Designated fire zones must be protected from fire by compliance with §§121.255 through 121.261.

(b) Designated fire zones are—

(1) Engine accessory sections;

(2) Installations where no isolation is provided between the engine and accessory compartment; and

(3) Areas that contain auxiliary power units, fuel-burning heaters, and other combustion equipment.

§ 121.255 Flammable fluids.

(a) No tanks or reservoirs that are a part of a system containing flammable fluids or gases may be located in designated fire zones, except where the fluid contained, the design of the system, the materials used in the tank, the shutoff means, and the connections, lines, and controls provide equivalent safety.

(b) At least one-half inch of clear airspace must be provided between any tank or reservoir and a firewall or shroud isolating a designated fire zone.

§ 121.257 Shutoff means.

(a) Each engine must have a means for shutting off or otherwise preventing hazardous amounts of fuel, oil, de-icer, and other flammable fluids from flowing into, within, or through any designated fire zone. However, means need not be provided to shut off flow in lines that are an integral part of an engine.

(b) The shutoff means must allow an emergency operating sequence that is compatible with the emergency operation of other equipment, such as feathering the propeller, to facilitate rapid and effective control of fires.

(c) Shutoff means must be located outside of designated fire zones, unless equivalent safety is provided, and it must be shown that no hazardous amount of flammable fluid will drain into any designated fire zone after a shut off.

(d) Adequate provisions must be made to guard against inadvertent operation of the shutoff means and to make it possible for the crew to reopen the shutoff means after it has been closed.

§ 121.259 Lines and fittings.

(a) Each line, and its fittings, that is located in a designated fire zone, if it carries flammable fluids or gases under pressure, or is attached directly to the engine, or is subject to relative motion between components (except lines and fittings forming an integral part of the engine), must be flexible and fire-resistant with fire-resistant, factory-fixed, detachable, or other approved fire-resistant ends.

(b) Lines and fittings that are not subject to pressure or to relative motion between components must be of fire-resistant materials.

§ 121.261 Vent and drain lines.

All vent and drain lines and their fittings, that are located in a designated fire zone, must, if they carry flammable fluids or gases, comply with §121.259, if the Administrator finds that the rupture or breakage of any vent or drain line may result in a fire hazard.

§ 121.263 Fire-extinguishing systems.

(a) Unless the certificate holder shows that equivalent protection against destruction of the airplane in case of fire is provided by the use of fireproof materials in the nacelle and other components that would be subjected to flame, fire-extinguishing systems must be provided to serve all designated fire zones.

(b) Materials in the fire-extinguishing system must not react chemically with the extinguishing agent so as to be a hazard.

§ 121.265 Fire-extinguishing agents.

Only methyl bromide, carbon dioxide, or another agent that has been shown to provide equivalent extinguishing action may be used as a fire-extinguishing agent. If methyl bromide or any other toxic extinguishing agent is used, provisions must be made to prevent harmful concentrations of fluid or fluid vapors from entering any personnel compartment either because of leakage during normal operation of the airplane or because of discharging the fire extinguisher on the ground or in flight.
§ 121.263 Induction system ice prevention.

A means for preventing the malfunctioning of each engine due to ice accumulation in the engine air induction system must be provided for each airplane.
§ 121.285 Carriage of cargo in passenger compartments.

(a) Except as provided in paragraph (b), (c), or (d) or this section, no certificate holder may carry cargo in the passenger compartment of an airplane.

(b) Cargo may be carried anywhere in the passenger compartment if it is carried in an approved cargo bin that meets the following requirements:

1. The bin must withstand the load factors and emergency landing conditions applicable to the passenger seats of the airplane in which the bin is installed, multiplied by a factor of 1.15, using the combined weight of the bin and the maximum weight of cargo that may be carried in the bin.

2. The maximum weight of cargo that the bin is approved to carry and any instructions necessary to insure proper weight distribution within the bin must be conspicuously marked on the bin.

3. The bin may not impose any load on the floor or other structure of the airplane that exceeds the load limitations of that structure.

4. The bin must be attached to the seat tracks or to the floor structure of the airplane, and its attachment must withstand the load factors and emergency landing conditions applicable to the passenger seats of the airplane in which the bin is installed, multiplied by either the factor 1.15 or the seat attachment factor specified for the airplane, whichever is greater, using the combined weight of the bin and the maximum weight of cargo that may be carried in the bin.

5. The bin may not be installed in a position that restricts access to or use of any required emergency exit, or of the aisle in the passenger compartment.

6. The bin must be fully enclosed and made of material that is at least flame resistant.

7. Suitable safeguards must be provided within the bin to prevent the cargo from shifting under emergency landing conditions.

8. The bin may not be installed in a position that obscures any passenger’s view of the “seat belt” sign, “no smoking” sign, or any required exit sign, unless an auxiliary sign or other approved means for proper notification of the passenger is provided.

(c) Cargo may be carried aft of a bulkhead or divider in any passenger compartment provided the cargo is restrained to the load factors in §25.561(b)(3) and is loaded as follows:

1. It is properly secured by a safety belt or other tiedown having enough strength to eliminate the possibility of shifting under all normally anticipated flight and ground conditions.

2. It is packaged or covered in a manner to avoid possible injury to passengers and passenger compartment occupants.

3. It does not impose any load on seats or the floor structure that exceeds the load limitation for those components.

4. Its location does not restrict access to or use of any required emergency or regular exit, or of the aisle in the passenger compartment.

5. Its location does not obscure any passenger’s view of the “seat belt” sign, “no smoking” sign, or required exit sign, unless an auxiliary sign or other approved means for proper notification of the passenger is provided.

(d) Cargo, including carry-on baggage, may be carried anywhere in the passenger compartment of a non-transport category airplane type certificated after December 31, 1964, if it is carried in an approved cargo rack, bin, or compartment installed in or on the airplane, if it is secured by an approved means, or if it is carried in accordance with each of the following:

1. For cargo, it is properly secured by a safety belt or other tiedown having enough strength to eliminate the possibility of shifting under all normally anticipated flight and ground conditions, or for carry-on baggage, it is restrained so as to prevent its movement during air turbulence.

2. It is packaged or covered to avoid possible injury to occupants.

3. It does not impose any load on seats or in the floor structure that exceeds the load limitation for those components.

4. It is not located in a position that obstructs the access to, or use of, any required emergency or regular exit, or the use of the aisle between the crew and the passenger compartment, or is
§ 121.287 Carriage of cargo in cargo compartments.

When cargo is carried in cargo compartments that are designed to require the physical entry of a crewmember to extinguish any fire that may occur during flight, the cargo must be loaded so as to allow a crewmember to effectively reach all parts of the compartment with the contents of a hand fire extinguisher.

§ 121.289 Landing gear: Aural warning device.

(a) Except for airplanes that comply with the requirements of § 25.729 of this chapter on or after January 6, 1992, each airplane must have a landing gear aural warning device that functions continuously under the following conditions:

(1) For airplanes with an established approach wing-flap position, whenever the wing flaps are extended beyond the maximum certificated approach climb configuration position in the Airplane Flight Manual and the landing gear is not fully extended and locked.

(2) For airplanes without an established approach climb wing-flap position, whenever the wing flaps are extended beyond the position at which landing gear extension is normally performed and the landing gear is not fully extended and locked.

§ 121.291 Demonstration of emergency evacuation procedures.

(a) Except as provided in paragraph (a)(1) of this section, each certificate holder must conduct an actual demonstration of emergency evacuation procedures in accordance with paragraph (a) of appendix D to this part to show that each type and model of airplane with a seating capacity of more than 44 passengers to be used in its passenger-carrying operations allows the evacuation of the full capacity, including crewmembers, in 90 seconds or less.

(1) An actual demonstration need not be conducted if that airplane type and model has been shown to be in compliance with this paragraph in effect on or after October 24, 1967, or, if during type certification, with § 25.803 of this chapter in effect on or after December 1, 1978.

(2) Any actual demonstration conducted after September 27, 1993, must be in accordance with paragraph (a) of appendix D to this part in effect on or after that date or with § 25.803 in effect on or after that date.

(b) Each certificate holder conducting operations with airplanes with a seating capacity of more than 44 passengers must conduct a partial demonstration of emergency evacuation procedures in accordance with paragraph (c) of this section upon:

(1) Initial introduction of a type and model of airplane into passenger-carrying operation, if the certificate holder
\section*{\$ 121.293 Special airworthiness requirements for nontransport category airplanes type certificated after December 31, 1964.}

No certificate holder may operate a nontransport category airplane manufactured after December 20, 1999 unless the airplane contains a takeoff warning system that meets the requirements of 14 CFR 25.703. However, the takeoff warning system does not have to cover any device for which it has been demonstrated that takeoff with that device in the most adverse position would not create a hazardous condition.

\section*{Subpart K—Instrument and Equipment Requirements}

\textbf{SOURCE:} Docket No. 6258, 29 F.R. 19205, Dec. 31, 1964, unless otherwise noted.

\section*{\$ 121.301 Applicability.}

This subpart prescribes instrument and equipment requirements for all certificate holders.

\section*{\$ 121.303 Airplane instruments and equipment.}

\textbf{(a)} Unless otherwise specified, the instrument and equipment requirements
§ 121.305 Flight and navigational equipment.

No person may operate an airplane unless it is equipped with the following flight and navigational instruments and equipment:

(a) An airspeed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to icing.

(b) A sensitive altimeter.

(c) A sweep-second hand clock (or approved equivalent).

(d) A free-air temperature indicator.

(e) A gyroscopic bank and pitch indicator (artificial horizon).

(f) A gyroscopic rate-of-turn indicator combined with an integral slip-ski'd indicator (turn-and-bank indicator) except that only a slip-ski'd indicator is required when a third attitude instrument system usable through flight attitudes of 360° of pitch and roll is installed in accordance with paragraph (k) of this section.

(g) A gyroscopic direction indicator (directional gyro or equivalent).

(h) A magnetic compass.

(i) A vertical speed indicator (rate-of-climb indicator).

(j) On the airplane described in this paragraph, in addition to two gyroscopic bank and pitch indicators (artificial horizons) for use at the pilot stations, a third such instrument is installed in accordance with paragraph (k) of this section:

(1) On each turbojet powered airplane.

(2) On each turbopropeller powered airplane having a passenger-seat configuration of more than 30 seats, excluding each crewmember seat, or a payload capacity of more than 7,500 pounds.

(3) On each turbopropeller powered airplane having a passenger-seat configuration of 30 seats or fewer, excluding each crewmember seat, and a payload capacity of 7,500 pounds or less that is manufactured on or after March 20, 1997.

(4) After December 20, 2010, on each turbopropeller powered airplane having a passenger seat configuration of 10–30 seats and a payload capacity of 7,500 pounds or less that was manufactured before March 20, 1997.

(k) When required by paragraph (j) of this section, a third gyroscopic bank and pitch indicator (artificial horizon) that:

(1) Is powered from a source independent of the electrical generating system;

(2) Continues reliable operation for a minimum of 30 minutes after total failure of the electrical generating system;

(3) Operates independently of any other attitude indicating system;

(4) Is operative without selection after total failure of the electrical generating system;

(5) Is located on the instrument panel in a position acceptable to the Administrator that will make it plainly visible to and usable by each pilot at his or her station; and
§ 121.307 Engine instruments.

Unless the Administrator allows or requires different instrumentation for turbine engine powered airplanes to provide equivalent safety, no person may conduct any operation under this part without the following engine instruments:

(a) A carburetor air temperature indicator for each engine.

(b) A cylinder head temperature indicator for each air-cooled engine.

(c) A fuel pressure indicator for each engine.

(d) A fuel flowmeter or fuel mixture indicator for each engine not equipped with an automatic altitude mixture control.

(e) A means for indicating fuel quantity in each fuel tank to be used.

(f) A manifold pressure indicator for each engine.

(g) An oil pressure indicator for each engine.

(h) An oil quantity indicator for each oil tank when a transfer or separate oil reserve supply is used.

(i) An oil-in temperature indicator for each engine.

(j) A tachometer for each engine.

(k) An independent fuel pressure warning device for each engine or a master warning device for all engines with a means for isolating the individual warning circuits from the master warning device.

(l) A device for each reversible propeller, to indicate to the pilot when the propeller is in reverse pitch, that complies with the following:

(1) The device may be actuated at any point in the reversing cycle between the normal low pitch stop position and full reverse pitch, but it may not give an indication at or above the normal low pitch stop position.

(2) The source of indication must be actuated by the propeller blade angle or be directly responsive to it.

§ 121.308 Lavatory fire protection.

(a) Except as provided in paragraphs (c) and (d) of this section, no person may operate a passenger-carrying airplane unless each lavatory in the airplane is equipped with a smoke detector system or equivalent that provides a warning light in the cockpit or provides a warning light or audio warning in the passenger cabin which would be readily detected by a flight attendant, taking into consideration the positioning of flight attendants throughout the passenger compartment during various phases of flight.

(b) Except as provided in paragraph (c) of this section, no person may operate a passenger-carrying airplane unless each lavatory in the airplane is equipped with a built-in fire extinguisher for each disposal receptacle for towels, paper, or waste located within the lavatory. The built-in fire extinguisher must be designed to discharge automatically into each disposal receptacle upon occurrence of a fire in the receptacle.

(c) Until December 22, 1997, a certificate holder described in §121.2(a) (1) or (2) may operate an airplane with a passenger seat configuration of 30 or fewer seats that does not comply with the smoke detector system requirements described in paragraph (a) of this section and the fire extinguisher requirements described in paragraph (b) of this section.

(d) After December 22, 1997, no person may operate a nontransport category airplane type certificated after December 31, 1964, with a passenger seat configuration of 10-19 seats unless that airplane complies with the smoke detector system requirements described in paragraph (a) of this section, except that the smoke detector system or equivalent must provide a warning light in the cockpit or an audio warning that would be readily detected by the flightcrew.

§ 121.309 Emergency equipment.

(a) General: No person may operate an airplane unless it is equipped with the emergency equipment listed in this section and in §121.310.
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(b) Each item of emergency and flotation equipment listed in this section and in §§ 121.310, 121.339, and 121.340—

(1) Must be inspected regularly in accordance with inspection periods established in the operations specifications to ensure its condition for continued serviceability and immediate readiness to perform its intended emergency purposes;

(2) Must be readily accessible to the crew and, with regard to equipment located in the passenger compartment, to passengers;

(3) Must be clearly identified and clearly marked to indicate its method of operation; and

(4) When carried in a compartment or container, must be carried in a compartment or container marked as to contents and the compartment or container, or the item itself, must be marked as to date of last inspection.

(c) Hand fire extinguishers for crew, passenger, cargo, and galley compartments. Hand fire extinguishers of an approved type must be provided for use in crew, passenger, cargo, and galley compartments in accordance with the following:

(1) The type and quantity of extinguishing agent must be suitable for the kinds of fires likely to occur in the compartment where the extinguisher is intended to be used and, for passenger compartments, must be designed to minimize the hazard of toxic gas concentrations.

(2) Cargo compartments. At least one hand fire extinguisher must be conveniently located for use in each class E cargo compartment that is accessible to crewmembers during flight.

(3) Galley compartments. At least one hand fire extinguisher must be conveniently located for use in each galley located in a compartment other than a passenger, cargo, or crew compartment.

(4) Flightcrew compartment. At least one hand fire extinguisher must be conveniently located on the flight deck for use by the flightcrew.

(5) Passenger compartments. Hand fire extinguishers for use in passenger compartments must be conveniently located and, when two or more are required, uniformly distributed throughout each compartment. Hand fire extinguishers shall be provided in passenger compartments as follows:

(1) For airplanes having passenger seats accommodating more than 6 but fewer than 31 passengers, at least one.

(2) For airplanes having passenger seats accommodating more than 30 but fewer than 61 passengers, at least two.

(3) For airplanes having passenger seats accommodating more than 60 passengers, there must be at least the following number of hand fire extinguishers:

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<tr>
<th>Minimum Number of Hand Fire Extinguishers</th>
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<tr>
<td>Passenger seating accommodations:</td>
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<tr>
<td>61 through 200</td>
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<td>201 through 300</td>
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(6) Notwithstanding the requirement for uniform distribution of hand fire extinguishers as prescribed in paragraph (c)(5) of this section, for those cases where a galley is located in a passenger compartment, at least one hand fire extinguisher must be conveniently located and easily accessible for use in the galley.

(7) At least two of the required hand fire extinguisher installed in passenger-carrying airplanes must contain Halon 1211 (bromochlorofluoromethane) or equivalent as the extinguishing agent. At least one hand fire extinguisher in the passenger compartment must contain Halon 1211 or equivalent.

(d) First aid and emergency medical equipment and protective gloves. (1) For treatment of injuries or medical emergencies that might occur during flight time or in minor accidents each passenger-carrying airplane must have the following equipment that meets the specifications and requirements of appendix A of this part:

(i) Approved first aid kits;

(ii) In airplanes for which a flight attendant is required, an emergency medical kit.

(2) Pairs of protective latex gloves, or equivalent nonpermeable gloves, equal in number to the number of first aid kits on board the aircraft. These gloves
§ 121.310  Additional emergency equipment.

(a) Means for emergency evacuation. Each passenger-carrying landplane emergency exit (other than over-the-wing) that is more than 6 feet from the ground with the airplane on the ground and the landing gear extended, must have an approved means to assist the occupants in descending to the ground. The assisting means for a floor-level emergency exit must meet the requirements of §25.809(f)(1) of this chapter in effect on April 30, 1972, except that, for any airplane for which the application for the type certificate was filed after that date, it must meet the requirements under which the airplane was type certificated. An assisting means that deploys automatically must be armed during taxiing, takeoffs, and landings. However, if the Administrator finds that the design of the exit makes compliance impractical, he may grant a deviation from the requirement of automatic deployment if the assisting means automatically erects upon deployment and, with respect to required emergency exits, if an emergency evacuation demonstration is conducted in accordance with §121.291(a). This paragraph does not apply to the rear window emergency exit of DC–3 airplanes operated with less than 36 occupants, including crewmembers and less than five exits authorized for passenger use.

(b) Interior emergency exit marking. The following must be complied with for each passenger-carrying airplane:

(1) Each passenger emergency exit, its means of access, and its means of opening must be conspicuously marked. The identity and location of each passenger emergency exit must be recognizable from a distance equal to the width of the cabin. The location of each passenger emergency exit must be indicated by a sign visible to occupants approaching along the main passenger aisle. There must be a locating sign—

(i) Above the aisle near each over-the-wing passenger emergency exit, or at another ceiling location if it is more practical because of low headroom;

(ii) Next to each floor level passenger emergency exit, except that one sign may serve two such exits if they both can be seen readily from that sign; and

(iii) On each bulkhead or divider that prevents fore and aft vision along the passenger cabin, to indicate emergency exits beyond and obscured by it, except that if this is not possible the sign may be placed at another appropriate location.

(2) Each passenger emergency exit marking and each locating sign must meet the following:

(i) Except as provided in paragraph (b)(2)(iii) of this section, for an airplane for which the application for the type certificate was filed prior to May 1, 1972, each passenger emergency exit marking and each locating sign must
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be manufactured to meet the requirements of §25.812(b) of this chapter in effect on April 30, 1972. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts. The colors may be reversed if it increases the emergency illumination of the passenger compartment. However, the Administrator may authorize deviation from the 2-inch background requirements if he finds that special circumstances exist that make compliance impractical and that the proposed deviation provides an equivalent level of safety.

(ii) For a transport category airplane for which the application for the type certificate was filed on or after May 1, 1972, each passenger emergency exit marking and each locating sign must be manufactured to meet the interior emergency exit marking requirements under which the airplane was type certificated. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 250 microlamberts.

(iii) For a nontransport category turbopropeller powered airplane type certificated after December 31, 1964, each passenger emergency exit marking and each locating sign must be manufactured to meet the requirements of §23.811(b) of this chapter. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

(c) Lighting for interior emergency exit markings.

(i) For a passenger-carrying airplane for which the application for the type certificate was filed prior to May 1, 1972, the location of each passenger emergency exit operating handle, and instructions for opening the exit, must be shown by a marking on or near the exit that is readable from a distance of 30 inches. In addition, for each Type I
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and Type II emergency exit with a locking mechanism released by rotary motion of the handle, the instructions for opening must be shown by—

(i) A red arrow with a shaft at least three-fourths inch wide and a head twice the width of the shaft, extending along at least 70° of arc at a radius approximately equal to three-fourths of the handle length; and

(ii) The word “open” in red letters 1 inch high placed horizontally near the head of the arrow.

(2) For a passenger-carrying airplane for which the application for the type certificate was filed on or after May 1, 1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the airplane was type certificated. On these airplanes, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

(f) Emergency exit access. Access to emergency exits must be provided as follows for each passenger-carrying transport category airplane:

(1) Each passage way between individual passenger areas, or leading to a Type I or Type II emergency exit, must be unobstructed and at least 20 inches wide.

(2) There must be enough space next to each Type I or Type II emergency exit to allow a crewmember to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required in paragraph (f)(1) of this section. However, the Administrator may authorize deviation from this requirement for an airplane certificated under the provisions of part 4b of the Civil Air Regulations in effect before December 20, 1951, if he finds that special circumstances exist that provide an equivalent level of safety.

(3) There must be access from the main aisle to each Type III and Type IV exit. The access from the aisle to these exits must not be obstructed by seats, berths, or other protrusions in a manner that would reduce the effectiveness of the exit. In addition—

(i) For an airplane for which the application for the type certificate was filed prior to May 1, 1972, the access must meet the requirements of §25.813(c) of this chapter in effect on April 30, 1972; and

(ii) For an airplane for which the application for the type certificate was filed on or after May 1, 1972, the access must meet the emergency exit access requirements under which the airplane was type certificated; except that,

(iii) After December 3, 1992, the access for an airplane type certificated after January 1, 1958, must meet the requirements of §25.813(c) of this chapter, effective June 3, 1992.

(iv) Contrary provisions of this section notwithstanding, the Manager of the Transport Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, may authorize deviation from the requirements of paragraph (f)(3)(iii) of this section if it is determined that special circumstances make compliance impractical. Such special circumstances include, but are not limited to, the following conditions when they preclude achieving compliance with §25.813(c)(1)(i) or (ii) without a reduction in the total number of passenger seats: emergency exits located in close proximity to each other; fixed installations such as lavatories, galleys, etc.; permanently mounted bulkheads; an insufficient number of rows ahead of or behind the exit to enable compliance without a reduction in the seat row pitch of more than one inch; or an insufficient number of such rows to enable compliance without a reduction in the seat row pitch to less than 30 inches. A request for such grant of deviation must include credible reasons as to why literal compliance with §25.813(c)(1)(i) or (ii) is impractical and a description of the steps taken to achieve a level of safety as close to that intended by §25.813(c)(1)(i) or (ii) as is practical.

(v) The Manager of the Transport Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, may also authorize a compliance date later than December 3, 1992, if it is determined that special circumstances make compliance by that date impractical. A request for such grant of deviation must outline the airplanes for which compliance will
be achieved by December 3, 1992, and include a proposed schedule for incremental compliance of the remaining airplanes in the operator's fleet. In addition, the request must include credible reasons why compliance cannot be achieved earlier.

(4) If it is necessary to pass through a passageway between passenger compartments to reach any required emergency exit from any seat in the passenger cabin, the passageway must not be obstructed. However, curtains may be used if they allow free entry through the passageway.

(5) No door may be installed in any partition between passenger compartments.

(6) If it is necessary to pass through a doorway separating the passenger cabin from other areas to reach required emergency exit from any passenger seat, the door must have a means to latch it in open position, and the door must be latched open during each takeoff and landing. The latching means must be able to withstand the loads imposed upon it when the door is subjected to the ultimate inertia forces, relative to the surrounding structure, listed in §25.561(b) of this chapter.

(g) Exterior exit markings. Each passenger emergency exit and the means of opening that exit from the outside must be marked on the outside of the airplane. There must be a 2-inch colored band outlining each passenger emergency exit on the side of the fuselage. Each outside marking, including the band, must be readily distinguishable from the surrounding fuselage area by contrast in color. The markings must comply with the following:

1. If the reflectance of the darker color is 15 percent or less, the reflectance of the lighter color must be at least 45 percent.

2. If the reflectance of the darker color is greater than 15 percent, at least a 30 percent difference between its reflectance and the reflectance of the lighter color must be provided.

3. Exits that are not in the side of the fuselage must have the external means of opening and applicable instructions marked conspicuously in red or, if red is not conspicuous against the background color, in bright chrome yellow, and, when the opening means for such an exit is located on only one side of the fuselage, a conspicuous marking to that effect must be provided on the other side. Reflectance is the ratio of the luminous flux reflected by a body to the luminous flux it receives.

(h) Exterior emergency lighting and escape route. (1) Except for nontransport category airplanes certificated after December 31, 1964, each passenger-carrying airplane must be equipped with exterior lighting that meets the following requirements:

   (i) For an airplane for which the application for the type certificate was filed prior to May 1, 1972, the requirements of §25.812 (f) and (g) of this chapter in effect on April 30, 1972.

   (ii) For an airplane for which the application for the type certificate was filed on or after May 1, 1972, the exterior emergency lighting requirements under which the airplane was type certificated.

   (2) Each passenger-carrying airplane must be equipped with a slip-resistant escape route that meets the following requirements:

   (i) For an airplane for which the application for the type certificate was filed prior to May 1, 1972, the requirements of §25.803(e) of this chapter in effect on April 30, 1972.

   (ii) For an airplane for which the application for the type certificate was filed on or after May 1, 1972, the slip-resistant escape route requirements under which the airplane was type certificated.

(i) Floor level exits. Each floor level door or exit in the side of the fuselage (other than those leading into a cargo or baggage compartment that is not accessible from the passenger cabin) that is 44 or more inches high and 20 or more inches wide, but not wider than 46 inches, each passenger ventral exit (except the ventral exits on M-404 and CV-240 airplanes), and each tail cone exit, must meet the requirements of this section for floor level emergency exits. However, the Administrator may grant a deviation from this paragraph if he finds that circumstances make full compliance impractical and that an acceptable level of safety has been achieved.
§ 121.311 Seats, safety belts, and shoulder harnesses.

(a) No person may operate an airplane unless there are available during the takeoff, en route flight, and landing—

(1) An approved seat or berth for each person on board the airplane who has reached his second birthday; and

(2) An approved safety belt for separate use by each person on board the airplane who has reached his second birthday, except that two persons occupying a berth may share one approved safety belt and two persons occupying a multiple lounge or divan seat may share one approved safety belt during en route flight only.

(b) Except as provided in this paragraph, each person on board an airplane operated under this part shall occupy an approved seat or berth with a separate safety belt properly secured about him or her during movement on the surface, takeoff, and landing. A safety belt provided for the occupant of a seat may not be used by more than one person who has reached his or her second birthday. Notwithstanding the preceding requirements, a child may:

(1) Be held by an adult who is occupying an approved seat or berth, provided the child has not reached his or her second birthday and the child does not occupy or use any restraining device; or

(2) Notwithstanding any other requirement of this chapter, occupy an approved child restraint system furnished by the certificate holder or one of the persons described in paragraph (b)(2)(i) of this section, provided:

(i) The child is accompanied by a parent, guardian, or attendant designated by the child’s parent or guardian to attend to the safety of the child during the flight;

(ii) Except as provided in paragraph (b)(2)(ii)(D) of this section, the approved child restraint system bears one or more labels as follows:

(A) Seats manufactured to U.S. standards between January 1, 1981, and February 25, 1985, must bear the label: “This child restraint system conforms to all applicable Federal motor vehicle safety standards.”

(B) Seats manufactured to U.S. standards on or after February 26, 1985, must bear two labels:

(1) “This child restraint system conforms to all applicable Federal motor vehicle safety standards”; and

(2) “THIS RESTRAINT IS CERTIFIED FOR USE IN MOTOR VEHICLES AND AIRCRAFT” in red lettering;

(C) Seats that do not qualify under paragraphs (b)(2)(ii)(A) and (b)(2)(ii)(B) of this section must bear either a label

(j) Additional emergency exits. Approved emergency exits in the passenger compartments that are in excess of the minimum number of required emergency exits must meet all of the applicable provisions of this section except paragraphs (f)(1), (2), and (3) of this section and must be readily accessible.

(k) On each large passenger-carrying turbojet-powered airplane, each ventral exit and tailcone exit must be—

(1) Designed and constructed so that it cannot be opened during flight; and

(2) Marked with a placard readable from a distance of 30 inches and installed at a conspicuous location near the means of opening the exit, stating that the exit has been designed and constructed so that it cannot be opened during flight.

(l) Portable lights. No person may operate a passenger-carrying airplane unless it is equipped with flashlight stowage provisions accessible from each flight attendant seat.

(m) Except as provided by §121.627(c) and except for an airplane used in operations under this part on October 16, 1987, and having an emergency exit configuration installed and authorized for operation prior to October 16, 1987, for an airplane that is required to have more than one passenger emergency exit for each side of the fuselage, no passenger emergency exit shall be more than 60 feet from any adjacent passenger emergency exit on the same side of the same deck of the fuselage, as measured parallel to the airplane’s longitudinal axis between the nearest exit edges.

[Doc. No. 2033, 30 FR 3205, Mar. 9, 1965]

EDITORIAL NOTE: For Federal Register citations affecting §121.310, see the List of CFR Sections Affected in the Finding Aids section of this volume.
§ 121.311

showing approval of a foreign government or a label showing that the seat was manufactured under the standards of the United Nations;

(D) Notwithstanding any other provisions of this section, booster-type child restraint systems (as defined in Federal Motor Vehicle Standard No. 213 (49 CFR 571.213)), vest- and harness-type child restraint systems, and lap held child restraints are not approved for use in aircraft; and

(iii) The certificate holder complies with the following requirements:

(A) The restraint system must be properly secured to an approved forward-facing seat or berth;

(B) The child must be properly secured in the restraint system and must not exceed the specified weight limit for the restraint system; and

(C) The restraint system must bear the appropriate label(s).

(c) Except as provided in paragraph (c)(3) of this section, the following prohibitions apply to certificate holders:

(1) No certificate holder may permit a child, in an aircraft, to occupy a booster-type child restraint system, a vest-type child restraint system, a harness-type child restraint system, or a lap held child restraint system during take off, landing, and movement on the surface.

(2) Except as required in paragraph (c)(1) of this section, no certificate holder may prohibit a child, if requested by the child’s parent, guardian, or designated attendant, from occupying a child restraint system furnished by the child’s parent, guardian, or designated attendant provided—

(i) The child holds a ticket for an approved seat or berth or such seat or berth is otherwise made available by the certificate holder for the child’s use;

(ii) The requirements of paragraph (b)(2)(l) of this section are met;

(iii) The requirements of paragraph (b)(2)(ii) of this section are met; and

(iv) The child restraint system has one or more of the labels described in paragraphs (b)(2)(ii)(A) through (b)(2)(ii)(C) of this section.

(3) This section does not prohibit the certificate holder from providing child restraint systems authorized by this section or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.

(d) Each sideward facing seat must comply with the applicable requirements of §25.785(c) of this chapter.

(e) Except as provided in paragraphs (e)(1) through (e)(3) of this section, no certificate holder may take off or land an airplane unless each passenger seat back is in the upright position. Each passenger shall comply with instructions given by a crewmember in compliance with this paragraph.

(i) This paragraph does not apply to seat backs placed in other than the upright position in compliance with §121.310(f)(3).

(ii) This paragraph does not apply to seats on which cargo or persons who are unable to sit erect for a medical reason are carried in accordance with procedures in the certificate holder’s manual if the seat back does not obstruct any passenger’s access to the aisle or to any emergency exit.

(iii) On airplanes with no flight attendant, the certificate holder may take off or land as long as the flightcrew instructs each passenger to place his or her seat back in the upright position for takeoff and landing.

(f) No person may operate a transport category airplane that was type certified after January 1, 1958, or a non-transport category airplane manufactured after March 20, 1997, unless it is equipped at each flight deck station with a combined safety belt and shoulder harness that meets the applicable requirements specified in §25.785 of this chapter, effective March 6, 1980, except that—

(1) Shoulder harnesses and combined safety belt and shoulder harnesses that were approved and installed before March 6, 1980, may continue to be used; and

(2) Safety belt and shoulder harness restraint systems may be designed to the inertia load factors established under the certification basis of the airplane.

(g) Each flight attendant must have a seat for takeoff and landing in the passenger compartment that meets the requirements of §25.785 of this chapter, effective March 6, 1980, except that—
§ 121.312 Materials for compartment interiors.

(a) All interior materials; transport category airplanes and nontransport category airplanes type certificated before January 1, 1965. Except for the materials covered by paragraph (b) of this section, all materials in each compartment of a transport category airplane, or a nontransport category airplane type certificated before January 1, 1965, used by the crewmembers and passengers, must meet the requirements of §25.853 of this chapter in effect as follows, or later amendment thereto:

(i) Airplane with passenger seating capacity of 20 or more—(i) Manufactured after August 19, 1988, but prior to August 20, 1990. Except as provided in paragraph (a)(3)(ii) of this section, each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1988, but prior to August 20, 1990, must comply with the heat release rate testing provisions of §25.853(d) in effect March 6, 1995 (formerly §25.853(a-1) in effect on August 20, 1986) (see App. L of this part), except that the total heat release over the first 2 minutes of sample exposure must not exceed 100 kilowatt minutes per square meter and the peak heat release rate must not exceed 100 kilowatts per square meter.

(ii) Manufactured after August 19, 1990. Each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1990, must comply with the heat release rate and smoke testing provisions of §25.853(d) in effect March 6, 1995 (formerly §25.853(a-1)(see app. L of this part) in effect on September 26, 1988).

(b) Substantially complete replacement of the cabin interior on or after May 1, 1972—

(i) Airplane for which the application for type certificate was filed prior to May 1, 1972. Except as provided in paragraph (a)(3)(i) or (a)(3)(ii) of this section, each airplane for which the application for type certificate was filed prior to May 1, 1972, must comply with the provisions of §25.853 in effect on April 30, 1972, regardless of passenger capacity, if there is a substantially complete replacement of the cabin interior after April 30, 1972.

(ii) Airplane for which the application for type certificate was filed on or after May 1, 1972. Except as provided in paragraph (a)(3)(i) or (a)(3)(ii) of this section, each airplane for which the application for type certificate was filed on or after May 1, 1972, must comply with the material requirements under which the airplane was type certificated, regardless of passenger capacity, if there is a substantially complete replacement of the cabin interior on or after that date.

(3) Airplane type certificated after January 1, 1958, with passenger capacity of 20 or more—

(i) Manufactured after August 19, 1988, but prior to August 20, 1990. Except as provided in paragraph (a)(3)(ii) of this section, each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1988, but prior to August 20, 1990, must comply with the heat release rate testing provisions of §25.853(d) in effect March 6, 1995 (formerly §25.853(a-1) in effect on August 20, 1986) (see App. L of this part), except that the total heat release over the first 2 minutes of sample exposure must not exceed 100 kilowatt minutes per square meter and the peak heat release rate must not exceed 100 kilowatts per square meter.

(ii) Manufactured after August 19, 1990. Each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1990, must comply with the heat release rate and smoke testing provisions of §25.853(d) in effect March 6, 1995 (formerly §25.853(a-1)(see app. L of this part) in effect on September 26, 1988).

(iii) Manufactured after August 19, 1990. Each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1990, must comply with the heat release rate and smoke testing provisions of §25.853(d) in effect March 6, 1995 (formerly §25.853(a-1)(see app. L of this part) in effect on September 26, 1988).

(iv) Manufactured after August 19, 1990. Each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1990, must comply with the heat release rate and smoke testing provisions of §25.853(d) in effect March 6, 1995 (formerly §25.853(a-1)(see app. L of this part) in effect on September 26, 1988).
§ 121.313 Miscellaneous equipment.

No person may conduct any operation unless the following equipment is installed in the airplane:

(5) Contrary provisions of this section notwithstanding, galley carts and galley standard containers that do not meet the flammability and smoke emission requirements of §25.853(d) in effect March 6, 1995 (formerly §25.853(a–1)) (see app. L of this part) may be used in airplanes that must meet the requirements of paragraphs (a)(1)(i), (a)(1)(ii), (a)(3)(i), or (a)(3)(ii) of this section, provided the galley carts or standard containers were manufactured prior to March 6, 1995.

(b) Seat cushions. Seat cushions, except those on flight crewmember seats, in each compartment occupied by crew or passengers, must comply with the requirements pertaining to seat cushions in §25.853(c) effective on November 26, 1984, on each airplane as follows:

(1) Each transport category airplane type certificated after January 1, 1958;

(2) On or after December 20, 2010, each nontransport category airplane type certificated after December 31, 1964.

(c) All interior materials; airplanes type certificated in accordance with SFAR No. 41 of 14 CFR part 21. No person may operate an airplane that conforms to an amended or supplemental type certificate issued in accordance with SFAR No. 41 of 14 CFR part 21 for a maximum certified takeoff weight in excess of 12,500 pounds unless the airplane meets the compartment interior requirements set forth in §25.853(a) in effect March 6, 1995 (formerly §25.853(a), (b), (b–1), (b–2), and (b–3) of this chapter in effect on September 26, 1978) (see app. L of this part).

(d) All interior materials; other airplanes. For each material or seat cushion to which a requirement in paragraphs (a), (b), or (c) of this section does not apply, the material and seat cushion in each compartment used by the crewmembers and passengers must meet the applicable requirement under which the airplane was type certificated.

[Doc. No. 28154, 60 FR 65930, Dec. 20, 1995]
§ 121.314 Cargo and baggage compartments.

For each transport category airplane type certificated after January 1, 1958:

(a) Each Class C or Class D compartment, as defined in §25.857 of this Chapter in effect on June 16, 1986 (see Appendix L to this part), that is greater than 200 cubic feet in volume must have ceiling and sidewall liner panels which are constructed of:

1. Glass fiber reinforced resin;
2. Materials which meet the test requirements of part 25, appendix F, part III of this chapter; or

For compliance with paragraph (a) of this section, the term “liner” includes any design feature, such as a joint or fastener, which would affect the capability of the liner to safely contain a fire.

(b) After March 19, 2001, each Class D compartment, regardless of volume, must meet the standards of §§25.857(c) and 25.858 of this Chapter for a Class C compartment unless the operation is an all-cargo operation in which case each Class D compartment may meet the standards in §25.857(e) for a Class E compartment.

(c) Reports of conversions and retrofits.

1. Until such time as all Class D compartments in aircraft operated under this part by the certificate have been converted or retrofitted with appropriate detection and suppression systems, each certificate holder must submit written progress reports to the FAA that contain the information specified below.

2. The serial number of each airplane listed in the operations specifications issued to the certificate holder for operation under this part in which all Class D compartments have been converted to Class C or Class E compartments;
(ii) The serial number of each airplane listed in the operations specification issued to the certificate holder for operation under this part, in which all Class D compartments have been retrofitted to meet the fire detection and suppression requirements for Class C or the fire detection requirements for Class E; and

(iii) The serial number of each airplane listed in the operations specifications issued to the certificate holder for operation under this part that has at least one Class D compartment that has not been converted or retrofitted.

(2) The written report must be submitted to the Certificate Holding District Office by July 1, 1998, and at each three-month interval thereafter.

§ 121.315 Cockpit check procedure.

(a) Each certificate holder shall provide an approved cockpit check procedure for each type of aircraft.

(b) The approved procedures must include each item necessary for flight crewmembers to check for safety before starting engines, taking off, or landing, and in engine and systems emergencies. The procedures must be designed so that a flight crewmember will not need to rely upon his memory for items to be checked.

(c) The approved procedures must be readily usable in the cockpit of each aircraft and the flight crew shall follow them when operating the aircraft.

§ 121.316 Fuel tanks.

Each turbine powered transport category airplane operated after October 30, 1991, must meet the requirements of § 25.963(e) of this chapter in effect on October 30, 1989.

[Doc. No. 25614, 54 FR 40354, Sept. 29, 1989]

§ 121.317 Passenger information.

(a) Except as provided in paragraph (l) of this section, the “Fasten Seat Belt” sign shall be turned on during any movement on the surface, for each takeoff, for each landing, and at any other time considered necessary by the pilot in command.

(b) No person may operate an aircraft on a flight segment on which smoking is prohibited unless the “No Smoking” passenger information signs are lighted during the entire flight segment, or one or more “No Smoking” placards meeting the requirements of § 25.1541 are posted during the entire flight segment. If both the lighted signs and the placards are used, the signs must remain lighted during the entire flight segment. Smoking is prohibited on scheduled flight segments:

(1) Between any two points within Puerto Rico, the United States Virgin Islands, the District of Columbia, or any State of the United States (other than Alaska or Hawaii) or between any two points in any one of the above-mentioned jurisdictions (other than Alaska or Hawaii);

(2) Within the State of Alaska or within the State of Hawaii;

(3) Scheduled in the current Worldwide or North American Edition of the Official Airline Guide for 6 hours or less in duration and between any point listed in paragraph (c)(1) of this section and any point in Alaska or Hawaii, or between any point in Alaska and any point in Hawaii.

(d) No person may operate a passenger-carrying airplane under this part unless at least one legible sign or placard that reads “Fasten Seat Belt While Seated” is visible from each passenger seat. These signs or placards need not meet the requirements of paragraph (a) of this section.

(e) No person may operate an airplane unless there is installed in each lavatory a sign or placard that reads: “Federal law provides for a penalty of up to $2,000 for tampering with the smoke detector installed in this lavatory.” These signs or placards need not meet the requirements of paragraph (a) of this section.

(f) Each passenger required by § 121.313(b) to occupy a seat or berth shall fasten his or her safety belt about
§ 121.318  Public address system.

No person may operate an airplane with a seating capacity of more than 19 passengers unless it is equipped with a public address system which—

(a) Is capable of operation independent of the crewmember interphone system required by §121.319, except for handsets, headsets, microphones, selector switches, and signaling devices;

(b) Is approved in accordance with §21.305 of this chapter;

(c) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(d) For each required floor-level passenger emergency exit which has an adjacent flight attendant seat, has a microphone which is readily accessible to the seated flight attendant, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated flight attendants;

(e) Is capable of operation within 10 seconds by a flight attendant at each of those stations in the passenger compartment from which its use is accessible;

(f) Is audible at all passenger seats, lavatories, and flight attendant seats and work stations; and

(g) For transport category airplanes manufactured on or after November 27, 1990, meets the requirements of §25.1423 of this chapter.

[Doc. No. 24995, 54 FR 43826, Oct. 27, 1989]

§ 121.319  Crewmember interphone system.

(a) No person may operate an airplane with a seating capacity of more than 19 passengers unless the airplane is equipped with a crewmember interphone system that:

(1) [Reserved]

(2) Is capable of operation independent of the public address system required by §121.318(a) except for handsets, headsets, microphones, selector switches, and signaling devices; and

(3) Meets the requirements of paragraph (b) of this section.

(b) The crewmember interphone system required by paragraph (a) of this section must be approved in accordance with §21.305 of this chapter and meet the following requirements:

(1) It must provide a means of two-way communication between the pilot compartment and—

(i) Each passenger compartment; and

(ii) Each galley located on other than the main passenger deck level.

(2) It must be accessible for immediate use from each of two flight crewmember stations in the pilot compartment;
§ 121.327 Supplemental oxygen: Reciprocating engine powered airplanes.

(a) General. Except where supplemental oxygen is provided in accordance with §121.331, no person may operate an airplane unless supplemental oxygen is furnished and used as set forth in paragraphs (b) and (c) of this section. The amount of supplemental oxygen required for a particular operation

(3) It must be accessible for use from at least one normal flight attendant station in each passenger compartment;

(4) It must be capable of operation within 10 seconds by a flight attendant at those stations in each passenger compartment from which its use is accessible; and

(5) For large turbojet-powered airplanes:

(i) It must be accessible for use at enough flight attendant stations so that all floor-level emergency exits (or entryways to those exits in the case of exits located within galleys) in each passenger compartment are observable from one or more of those stations so equipped;

(ii) It must have an alerting system incorporating aural or visual signals for use by flight crewmembers to alert flight attendants and for use by flight attendants to alert flight crewmembers;

(iii) The alerting system required by paragraph (b)(5)(ii) of this section must have a means for the recipient of a call to determine whether it is a normal call or an emergency call; and

(iv) When the airplane is on the ground, it must provide a means of two-way communication between ground personnel and either of at least two flight crewmembers in the pilot compartment. The interphone system station for use by ground personnel must be so located that personnel using the system may avoid visible detection from within the airplane.

(b) Instrument lights providing enough light to make each required instrument, switch, or similar instrument, easily readable and installed so that the direct rays are shielded from the flight crewmembers’ eyes and that no objectionable reflections are visible to them. There must be a means of controlling the intensity of illumination unless it is shown that nondimming instrument lights are satisfactory.

(c) An airspeed-indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to icing.

(d) A sensitive altimeter.

§ 121.325 Instruments and equipment for operations under IFR or over-the-top.

No person may operate an airplane under IFR or over-the-top conditions unless it is equipped with the following instruments and equipment, in addition to those required by §§121.305 through 121.321:

(a) An airspeed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to icing.

(b) A sensitive altimeter.

(c) Instrument lights providing enough light to make each required instrument, switch, or similar instrument, easily readable and so installed that the direct rays are shielded from the flight crewmembers’ eyes and that no objectionable reflections are visible to them, and a means of controlling the intensity of illumination unless it is shown that nondimming instrument lights are satisfactory.
§ 121.329 Supplemental oxygen for sustained: Turbine engine powered airplanes.

(a) General. When operating a turbine engine powered airplane, each certificate holder shall equip the airplane with sustaining oxygen and dispensing equipment for use as set forth in this section:

(1) The amount of oxygen provided must be at least the quantity necessary to comply with paragraphs (b) and (c) of this section.

(2) The amount of sustaining and first-aid oxygen required for a particular operation to comply with the rules in this part is determined on the basis of cabin pressure altitudes and flight duration, consistent with the operating procedures established for each operation and route.

(3) The requirements for airplanes with pressurized cabins are determined on the basis of cabin pressure altitude and the assumption that a cabin pressurization failure will occur at the altitude or point of flight that is most critical from the standpoint of oxygen need, and that after the failure the airplane will descend in accordance with the emergency procedures specified in the Airplane Flight Manual, without exceeding its operating limitations, to a flight altitude that will allow successful termination of the flight.

(4) Following the failure, the cabin pressure altitude is considered to be the same as the flight altitude unless it is shown that no probable failure of the cabin or pressurization equipment will result in a cabin pressure altitude equal to the flight altitude. Under those circumstances, the maximum cabin pressure altitude attained may be used as a basis for certification or determination of oxygen supply, or both.

(b) Crewmembers. Each certificate holder shall provide a supply of oxygen...
for crewmembers in accordance with the following:

(1) At cabin pressure altitudes above 10,000 feet, oxygen must be provided for and used by each member of the flight crew on flight deck duty and must be provided for other crewmembers for that part of the flight at those altitudes that is of more than 30 minutes duration.

(2) At cabin pressure altitudes above 12,000 feet, oxygen must be provided for, and used by, each member of the flight crew on flight deck duty, and must be provided for other crewmembers during the entire flight at those altitudes.

(3) When a flight crewmember is required to use oxygen, he must use it continuously except when necessary to remove the oxygen mask or other dispenser in connection with his regular duties. Standby crewmembers who are on call or are definitely going to have flight deck duty before completing the flight must be provided with an amount of supplemental oxygen equal to that provided for crewmembers on duty other than on flight duty. If a standby crewmember is not on call and will not be on flight deck duty during the remainder of the flight, he is considered to be a passenger for the purposes of supplemental oxygen requirements.

(c) Passengers. Each certificate holder shall provide a supply of oxygen for passengers in accordance with the following:

(1) For flights at cabin pressure altitudes above 10,000 feet, up to and including 14,000 feet, enough oxygen for that part of the flight at those altitudes that is of more than 30 minutes duration, for 10 percent of the passengers.

(2) For flights at cabin pressure altitudes above 14,000 feet, up to and including 15,000 feet, enough oxygen for that part of the flight at those altitudes for 30 percent of the passengers.

(3) For flights at cabin pressure altitudes above 15,000 feet, enough oxygen for each passenger carried during the entire flight at those altitudes.
§ 121.333 Supplemental oxygen for emergency descent and for first aid; turbine engine powered airplanes with pressurized cabins.

(a) General. When operating a turbine engine powered airplane with a pressurized cabin, the certificate holder shall furnish oxygen and dispensing equipment to comply with paragraphs (b) through (e) of this section in the event of cabin pressurization failure.

(b) Crewmembers. When operating at flight altitudes above 10,000 feet, the certificate holder shall supply enough oxygen to comply with §121.329, but not less than a two-hour supply for each flight crewmember on flight deck duty. The required two hours supply is that quantity of oxygen necessary for a constant rate of descent from the airplane's maximum certificated operating altitude to 10,000 feet in ten minutes and followed by 110 minutes at 10,000 feet. The oxygen required in the event of cabin pressurization failure by §121.337 may be included in determining the supply required for flight crewmembers on flight deck duty.

(c) Use of oxygen masks by flight crewmembers. (1) When operating at flight altitudes above flight level 250, each flight crewmember on flight deck duty must be provided with an oxygen mask so designed that it can be rapidly placed on his face from its ready position, properly secured, sealed, and supplying oxygen upon demand; and so designed that after being placed on the face it does not prevent immediate communication between the flight crewmember and other crewmembers over the airplane intercommunication system. When it is not being used at flight altitudes above flight level 250, the oxygen mask must be kept in condition for ready use and located so as to be within the immediate reach of the flight crewmember while at his duty station.

(2) When operating at flight altitudes above flight level 250, one pilot at the controls of the airplane shall at all times wear and use an oxygen mask secured, sealed, and supplying oxygen, in accordance with the following:

(i) The one pilot need not wear and use an oxygen mask at or below the following flight levels if each flight crewmember on flight deck duty has a quick-donning type of oxygen mask that the certificate holder has shown can be placed on the face from its ready position, properly secured, sealed, and supplying oxygen upon demand, with one hand and within five seconds:

(A) For airplanes having a passenger seat configuration of more than 30 seats, excluding any required crewmember seat, or a payload capacity of more than 7,500 pounds, at or below flight level 410.

(B) For airplanes having a passenger seat configuration of less than 31 seats, excluding any required crewmember seat, and a payload capacity of 7,500 pounds or less, at or below flight level 350.

(ii) Whenever a quick-donning type of oxygen mask is to be used under this section, the certificate holder shall also show that the mask can be put on without disturbing eye glasses and without delaying the flight crewmember from proceeding with his assigned emergency duties. The oxygen mask after being put on must not prevent immediate communication between the flight crewmember and other crewmembers over the airplane intercommunication system.

(3) Notwithstanding paragraph (c)(2) of this section, if for any reason at any time it is necessary for one pilot to leave his station at the controls of the
§ 121.335 Equipment standards.

(a) Reciprocating engine powered airplanes. The oxygen apparatus, the minimum rates of oxygen flow, and the supply of oxygen necessary to comply with §121.327 must meet the standards established in section 46.651 of the Civil Air Regulations as in effect on July 20, 1950, except that if the certificate holder shows full compliance with those standards to be impracticable, the Administrator may authorize any change in those standards that he finds will provide an equivalent level of safety.

(b) Turbine engine powered airplanes. The oxygen apparatus, the minimum rate of oxygen flow, and the supply of oxygen necessary to comply with §§121.329 and 121.333 must meet the standards established in section 46.651 of the Civil Air Regulations as in effect on September 1, 1958, except that if the certificate holder shows full compliance with those standards to be impracticable, the Administrator may authorize any changes in those standards that he finds will provide an equivalent level of safety.
§ 121.337 Protective breathing equipment.

(a) The certificate holder shall furnish approved protective breathing equipment (PBE) meeting the equipment, breathing gas, and communication requirements contained in paragraph (b) of this section.

(b) Pressurized and nonpressurized cabin airplanes. Except as provided in paragraph (f) of this section, no person may operate an airplane unless protective breathing equipment meeting the requirements of this section is provided as follows:

(1) General. The equipment must protect the flightcrew from the effects of smoke, carbon dioxide or other harmful gases or an oxygen deficient environment caused by other than an airplane depressurization while on flight deck duty and must protect crewmembers from the above effects while combating fires on board the airplane.

(2) The equipment must be inspected regularly in accordance with inspection guidelines and the inspection periods established by the equipment manufacturer to ensure its condition for continued serviceability and immediate readiness to perform its intended emergency purposes. The inspection periods may be changed upon a showing by the certificate holder that the changes would provide an equivalent level of safety.

(3) That part of the equipment protecting the eyes must not impair the wearer's vision to the extent that a crewmember's duties cannot be accomplished and must allow corrective glasses to be worn without impairment of vision or loss of the protection required by paragraph (b)(1) of this section.

(4) The equipment, while in use, must allow the flightcrew to communicate using the airplane radio equipment and to communicate by interphone with each other while at their assigned duty stations. The equipment, while in use, must also allow crewmember interphone communications between each of two flight crewmember stations in the pilot compartment and at least one normal flight attendant station in each passenger compartment.

(5) The equipment, while in use, must allow any crewmember to use the airplane interphone system at any of the flight attendant stations referred to in paragraph (b)(4) of this section.

(6) The equipment may also be used to meet the supplemental oxygen requirements of this part provided it meets the oxygen equipment standards of §121.335 of this part.

(7) Protective breathing gas duration and supply system equipment requirements are as follows:

(i) The equipment must supply breathing gas for 15 minutes at a pressure altitude of 8,000 feet for the following:

(A) Flight crewmembers while performing flight deck duties; and

(B) Crewmembers while combating an in-flight fire.

(ii) The breathing gas system must be free from hazards in itself, in its method of operation, and in its effect upon other components.

(iii) For breathing gas systems other than chemical oxygen generators, there must be a means to allow the crew to readily determine, during the equipment preflight described in paragraph (c) of this section, that the gas supply is fully charged.

(iv) For each chemical oxygen generator, the supply system equipment must meet the requirements of §25.1450 (b) and (c) of this chapter.

(B) Smoke and fume protection. Protective breathing equipment with a fixed or portable breathing gas supply meeting the requirements of this section must be conveniently located on the flight deck and be easily accessible for immediate use by each required flight crewmember at his or her assigned duty station.

(9) Fire combatting. Except for nontransport category airplanes type certificated after December 31, 1964, protective breathing equipment with a fixed or portable breathing gas supply meeting the requirements of this section must be easily accessible and conveniently located for immediate use by crewmembers in combating fires as follows:

(i) One PBE is required for each hand fire extinguisher located for use in a galley other than a galley located in a passenger, cargo, or crew compartment.
(ii) One on the flight deck, except that the Administrator may authorize another location for this PBE if special circumstances exist that make compliance impractical and the proposed deviation would provide an equivalent level of safety.

(iii) In each passenger compartment, one on the flight deck, except that the Administrator may authorize another location for this PBE if special circumstances exist that make compliance impractical and the proposed deviation would provide an equivalent level of safety.

In each passenger compartment, one for each hand fire extinguisher required by §121.309 of this part, to be located within 3 feet of each required hand fire extinguisher, except that the Administrator may authorize a deviation allowing locations of PBE more than 3 feet from required hand fire extinguisher locations if special circumstances exist that make compliance impractical and if the proposed deviation provides an equivalent level of safety.

(c) Equipment preflight. (1) Before each flight, each item of PBE at flight crewmember duty stations must be checked by the flight crewmember who will use the equipment to ensure that the equipment—

(i) For other than chemical oxygen generator systems, is functioning, is serviceable, fits properly (unless a universal-fit type), and is connected to supply terminals and that the breathing gas supply and pressure are adequate for use; and

(ii) For chemical oxygen generator systems, is serviceable and fits properly (unless a universal-fit type).

(2) Each item of PBE located at other than a flight crewmember duty station must be checked by a designated crewmember to ensure that each is properly stowed and serviceable, and, for other than chemical oxygen generator systems, the breathing gas supply is fully charged. Each certificate holder, in its operations manual, must designate at least one crewmember to perform those checks before he or she takes off in that airplane for his or her first flight of the day.

§ 121.340 Emergency flotation means.

(a) Except as provided in paragraph (b) of this section, no person may operate an airplane in any overwater operation unless it is equipped with life preservers in accordance with §121.339(a)(1) or with an approved flotation means for each occupant. This means must be within easy reach of each seated occupant and must be readily removable from the airplane.

(b) Upon application by the air carrier or commercial operator, the Administrator may approve the operation of an airplane over water without the life preservers or flotation means required by paragraph (a) of this section, if the air carrier or commercial operator shows that the water over which the airplane is to be operated is not of such size and depth that life preservers or flotation means would be required for the survival of its occupants in the event the flight terminates in that water.


§ 121.341 Equipment for operations in icing conditions.

(a) Except as permitted in paragraph (c)(2) of this section, unless an airplane is type certificated under the transport category airworthiness requirements relating to ice protection, or unless an airplane is a non-transport category airplane type certificated after December 31, 1994, that has the ice protection provisions that meet section 34 of appendix A of part 135 of this chapter, no person may operate an airplane in icing conditions unless it is equipped with means for the prevention or removal of ice on windshields, wings, empennage, propellers, and other parts of the airplane where ice formation will adversely affect the safety of the airplane.

(b) No person may operate an airplane in icing conditions at night unless means are provided for illuminating or otherwise determining the formation of ice on the parts of the wings that are critical from the standpoint of ice accumulation. Any illuminating that is used must be of a type that will not cause glare or reflection that would handicap crewmembers in the performance of their duties.

(c) Non-transport category airplanes type certificated after December 31, 1964. Except for an airplane that has ice protection provisions that meet section 34 of appendix A of part 135 of this chapter, or those for transport category airplane type certification, no person may operate—

(1) Under IFR into known or forecast light or moderate icing conditions;

(2) Under VFR into known light or moderate icing conditions; unless the airplane has functioning deicing anti-icing equipment protecting each propeller, windshield, wing, stabilizing or control surface, and each airspeed, altimeter, rate of climb, or flight attitude instrument system; or

(3) Into known or forecast severe icing conditions.

(d) If current weather reports and briefing information relied upon by the pilot in command indicate that the forecast icing condition that would otherwise prohibit the flight will not be encountered during the flight because of changed weather conditions since the forecast, the restrictions in paragraph (c) of this section based on forecast conditions do not apply.


§ 121.342 Pitot heat indication systems.

No person may operate a transport category airplane or, after December 20, 1999, a nontransport category airplane type certificated after December 31, 1964, that is equipped with a flight instrument pitot heating system unless the airplane is also equipped with an operable pitot heat indication system.
§ 121.343 Flight recorders.

(a) Except as provided in paragraphs (b), (c), (d), (e), and (f) of this section, no person may operate a large airplane that is certificated for operations above 25,000 feet altitude or is turbine-engine powered unless it is equipped with one or more approved flight recorders that record data from which the following may be determined within the ranges, accuracies, and recording intervals specified in appendix B of this part:

(1) Time;
(2) Altitude;
(3) Airspeed;
(4) Vertical acceleration;
(5) Heading; and
(6) Time of each radio transmission either to or from air traffic control.

(b) No person may operate a large airplane type certificated up to and including September 30, 1969, for operations above 25,000 feet altitude, or a turbine-engine powered airplane certificated before the same date, unless it is equipped before May 26, 1989 with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The following information must be able to be determined within the ranges, accuracies, and recording intervals specified in appendix B of this part:

(1) Time;
(2) Altitude;
(3) Airspeed;
(4) Vertical acceleration;
(5) Heading;
(6) Time of each radio transmission either to or from air traffic control;
(7) Pitch attitude;
(8) Roll attitude;
(9) Longitudinal acceleration;
(10) Control column or pitch control surface position; and
(11) Thrust of each engine.

(c) Except as provided in paragraph (l) of this section, no person may operate an airplane specified in paragraph (b) of this section that is manufactured after May 26, 1989, as well as airplanes specified in paragraph (a) of this section that have been type certificated after September 30, 1969, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The following information must be able to be determined within the ranges, accuracies, and recording intervals specified in appendix B of this part:

(1) Time;
(2) Altitude;
(3) Airspeed;
(4) Vertical acceleration;
(5) Heading;
(6) Time of each radio transmission either to or from air traffic control;
(7) Pitch attitude;
(8) Roll attitude;
(9) Longitudinal acceleration;
(10) Control column or pitch control surface position; and
(11) Thrust of each engine.

(d) No person may operate an airplane specified in paragraph (b) of this section that is manufactured after May 26, 1989, as well as airplanes specified in paragraph (a) of this section that have been type certificated after September 30, 1969, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The following information must be able to be determined within the ranges, accuracies, and recording intervals specified in appendix B of this part:

(1) Time;
(2) Altitude;
(3) Airspeed;
(4) Vertical acceleration;
(5) Heading;
(6) Time of each radio transmission either to or from air traffic control;
(7) Pitch attitude;
(8) Roll attitude;
(9) Longitudinal acceleration;
(10) Pitch trim position;
(11) Control column or pitch control surface position;
(12) Control wheel or lateral control surface position;
(13) Rudder pedal or yaw control surface position;
(14) Thrust of each engine;
(15) Position of each thrust reverser;
(16) Trailing edge flap or cockpit flap control position; and
(17) Leading edge flap or cockpit flap control position.

For the purpose of this section, manufactured means the point in time at which the airplane inspection acceptance records reflect that the airplane is
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complete and meets the FAA-approved type design data.

(e) After October 11, 1991, no person may operate a large airplane equipped with a digital data bus and ARINC 717 digital flight data acquisition unit (DFDAU) or equivalent unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. Any parameters specified in appendix B of this part that are available on the digital data bus must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified.

(f) After October 11, 1991, no person may operate an airplane specified in paragraph (b) of this section that is manufactured after October 11, 1991, nor an airplane specified in paragraph (a) of this section that has been type certificated after September 30, 1969, and manufactured after October 11, 1991, unless it is equipped with one or more flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The parameters specified in appendix B of this part must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified.

(g) Whenever a flight recorder required by this section is installed, it must be operated continuously from the instant the airplane begins the takeoff roll until it has completed the landing roll at an airport.

(h) Except as provided in paragraph (i) of this section, and except for recorded data erased as authorized in this paragraph, each certificate holder shall keep the recorded data prescribed in paragraph (a), (b), (c), or (d) of this section, as appropriate, until the airplane has been operated for at least 25 hours of the operating time specified in §121.359(a). A total of 1 hour of recorded data may be erased for the purpose of testing the flight recorder or the flight recorder system. Any erasure made in accordance with this paragraph must be of the oldest recorded data accumulated at the time of testing. Except as provided in paragraph (i) of this section, no record need be kept more than 60 days.

(i) In the event of an accident or occurrence that requires immediate notification of the National Transportation Safety Board under part 830 of its regulations and that results in termination of the flight, the certificate holder shall remove the recording media from the airplane and keep the recorded data required by paragraph (a), (b), (c), or (d) of this section, as appropriate, for at least 60 days or for a longer period upon the request of the Board or the Administrator.

(j) Each flight recorder required by this section must be installed in accordance with the requirements of §25.1459 of this chapter in effect on August 31, 1977. The correlation required by §25.1459(c) of this chapter need be established only on one airplane of any group of airplanes—

(1) That are of the same type;

(2) On which the model flight recorder and its installation are the same; and

(3) On which there is no difference in the type design with respect to the installation of those first pilot's instruments associated with the flight recorder. The most recent instrument calibration, including the recording medium from which this calibration is derived, and the recorder correlation must be retained by the certificate holder.

(k) Each flight recorder required by this section that records the data specified in paragraph (a), (b), (c), or (d) of this section, as appropriate, must have an approved device to assist in locating that recorder under water.

(l) No person may operate an airplane specified in paragraph (b) of this section that meets the Stage 2 noise levels of part 36 of this chapter and is subject to §91.801(c) of this chapter unless it is equipped with one or more approved flight data recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The information specified in paragraphs (c)(1) through (c)(11) of this section must be able to be determined within the ranges, accuracies and recording intervals specified in appendix B of this part. In addition—
§ 121.344 Digital flight data recorders for transport category airplanes.

(a) Except as provided in paragraph (l) of this section, no person may operate under this part a turbine-engine-powered transport category airplane unless it is equipped with one or more approved flight recorders that use a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The operational parameters required to be recorded by digital flight data recorders required by this section are as follows: The phrase “when an information source is installed” following a parameter indicates that recording of that parameter is not intended to require a change in installed equipment:

(1) Time;
(2) Pressure altitude;
(3) Indicated airspeed;
(4) Heading—primary flight crew reference (if selectable, record discrete, true or magnetic);
(5) Normal acceleration (Vertical);
(6) Pitch attitude;
(7) Roll attitude;
(8) Manual radio transmitter keying, or CVR/DFDR synchronization reference;
(9) Thrust/power of each engine—primary flight crew reference;
(10) Autopilot engagement status;
(11) Longitudinal acceleration;
(12) Pitch control input;
(13) Lateral control input;
(14) Rudder pedal input;
(15) Primary pitch control surface position;
(16) Primary lateral control surface position;
(17) Primary yaw control surface position;
(18) Lateral acceleration;
(19) Pitch trim surface position or parameters of paragraph (a)(82) of this section if currently recorded;
(20) Trailing edge flap or cockpit flap control selection (except when parameters of paragraph (a)(85) of this section apply);
(21) Leading edge flap or cockpit flap control selection (except when parameters of paragraph (a)(86) of this section apply);
(22) Each Thrust reverser position (or equivalent for propeller airplane);
(23) Ground spoiler position or speed brake selection (except when parameters of paragraph (a)(87) of this section apply);
(24) Outside or total air temperature;
(25) Automatic Flight Control System (AFCS) modes and engagement status, including autothrottle;
(26) Radio altitude (when an information source is installed);
(27) Localizer deviation, MLS Azimuth;
(28) Glideslope deviation, MLS Elevation;
(29) Marker beacon passage;
(30) Master warning;
(31) Air/ground sensor (primary airplane system reference nose or main gear);
(32) Angle of attack (when information source is installed);
(33) Hydraulic pressure low (each system);
(34) Ground speed (when an information source is installed);
(35) Ground proximity warning system;
(36) Landing gear position or landing gear cockpit control selection;
(37) Drift angle (when an information source is installed);
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(38) Wind speed and direction (when an information source is installed);
(39) Latitude and longitude (when an information source is installed);
(40) Stick shaker/pusher (when an information source is installed);
(41) Windshear (when an information source is installed);
(42) Throttle/power lever position;
(43) Additional engine parameters (as designated in Appendix M of this part);
(44) Traffic alert and collision avoidance system;
(45) DME 1 and 2 distances;
(46) Nav 1 and 2 selected frequency;
(47) Selected barometric setting (when an information source is installed);
(48) Selected altitude (when an information source is installed);
(49) Selected speed (when an information source is installed);
(50) Selected mach (when an information source is installed);
(51) Selected vertical speed (when an information source is installed);
(52) Selected heading (when an information source is installed);
(53) Selected flight path (when an information source is installed);
(54) Selected decision height (when an information source is installed);
(55) EFIS display format;
(56) Multi-function/engine/alerts display format;
(57) Thrust command (when an information source is installed);
(58) Thrust target (when an information source is installed);
(59) Fuel quantity in CG trim tank (when an information source is installed);
(60) Primary Navigation System Reference;
(61) Icing (when an information source is installed);
(62) Engine warning each engine vibration (when an information source is installed);
(63) Engine warning each engine over temp. (when an information source is installed);
(64) Engine warning each engine oil pressure low (when an information source is installed);
(65) Engine warning each engine over speed (when an information source is installed);
(66) Yaw trim surface position;
(67) Roll trim surface position;
(68) Brake pressure (selected system);
(69) Brake pedal application (left and right);
(70) Yaw or sideslip angle (when an information source is installed);
(71) Engine bleed valve position (when an information source is installed);
(72) De-icing or anti-icing system selection (when an information source is installed);
(73) Computed center of gravity (when an information source is installed);
(74) AC electrical bus status;
(75) DC electrical bus status;
(76) APU bleed valve position (when an information source is installed);
(77) Hydraulic pressure (each system);
(78) Loss of cabin pressure;
(79) Computer failure;
(80) Heads-up display (when an information source is installed);
(81) Para-visual display (when an information source is installed);
(82) Cockpit trim control input position—pitch;
(83) Cockpit trim control input position—roll;
(84) Cockpit trim control input position—yaw;
(85) Trailing edge flap and cockpit flap control position;
(86) Leading edge flap and cockpit flap control position;
(87) Ground spoiler position and speed brake selection; and
(88) All cockpit flight control input forces (control wheel, control column, rudder pedal).

(b) For all turbine-engine powered transport category airplanes manufactured on or before October 11, 1991, by August 20, 2001.

(1) For airplanes not equipped as of July 16, 1996, with a flight data acquisition unit (FDAU), the parameters listed in paragraphs (a)(1) through (a)(18) of this section must be recorded within the ranges and accuracies specified in Appendix B of this part, and—

(i) For airplanes with more than two engines, the parameter described in paragraph (a)(18) is not required unless sufficient capacity is available on the existing recorder to record that parameter;
(ii) Parameters listed in paragraphs (a)(12) through (a)(17) each may be recorded from a single source.

(2) For airplanes that were equipped as of July 16, 1996, with a flight data acquisition unit (FDAU), the parameters listed in paragraphs (a)(1) through (a)(22) of this section must be recorded within the ranges, accuracies, and recording intervals specified in Appendix M of this part. Parameters listed in paragraphs (a)(12) through (a)(17) each may be recorded from a single source.

(3) The approved flight recorder required by this section must be installed at the earliest time practicable, but no later than the next heavy maintenance check after August 18, 1999 and no later than August 20, 2001. A heavy maintenance check is considered to be any time an airplane is scheduled to be out of service for 4 or more days and is scheduled to include access to major structural components.

(c) For all turbine-engine powered transport category airplanes manufactured on or before October 11, 1991—

(1) That were equipped as of July 16, 1996, with one or more digital data bus(es) and an ARINC 717 digital flight data acquisition unit (DFDAU) or equivalent, the parameters specified in paragraphs (a)(1) through (a)(22) of this section must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix M of this part by August 20, 2001. Parameters listed in paragraphs (a)(12) through (a)(14) each may be recorded from a single source.

(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix M of this part.

(3) That were subject to §121.343(e) of this part, all conditions of §121.343(e) must continue to be met until compliance with paragraph (c)(1) of this section is accomplished.

(d) For all turbine-engine powered transport category airplanes that were manufactured after October 11, 1991—

(1) The parameters listed in paragraph (a)(1) through (a)(34) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix M of this part.

(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix M of this part by August 20, 2001.

(e) For all turbine-engine powered transport category airplanes that are manufactured after August 18, 2000—

(1) The parameters listed in paragraph (a)(1) through (57) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix M of this part.

(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix M of this part.

(f) For all turbine-engine powered transport category airplanes that are manufactured after August 19, 2002 the parameters listed in paragraph (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix M of this part.

(g) Whenever a flight data recorder required by this section is installed, it must be operated continuously from the instant the airplane begins its takeoff roll until it has completed its landing roll.

(h) Except as provided in paragraph (i) of this section, and except for recorded data erased as authorized in this paragraph, each certificate holder shall keep the recorded data prescribed by this section, as appropriate, until the airplane has been operated for at least 25 hours of the operating time specified in §121.359(a) of this part. A
§ 121.344a Digital flight data recorders for 10-19 seat airplanes.

(a) Except as provided in paragraph (f) of this section, no person may operate under this part a turbine-engine-powered airplane having a passenger seating configuration, excluding any required crewmember seat, of 10 to 19 seats, that was brought onto the U.S. register after, or was registered outside the United States and added to the operator's U.S. operations specifications after, October 11, 1991, unless it is equipped with one or more approved flight recorders that use a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. On or before August 20, 2001, airplanes brought onto the U.S. register after October 11, 1991, must comply with either the requirements in this section or the applicable paragraphs in §135.152 of this chapter. In addition, by August 20, 2001:

(1) The following airplanes that were manufactured before August 18, 1997 need not comply with this section, but must continue to comply with applicable paragraphs of §121.343 of this chapter, as appropriate:
   (i) Airplanes that meet the State 2 noise levels of part 36 of this chapter and are subject to §91.801(c) of this chapter, until January 1, 2000. On and after January 1, 2000, any Stage 2 airplane otherwise allowed to be operated under Part 91 of this chapter must comply with the applicable flight data recorder requirements of this section for that airplane.

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(1) The parameters listed in §§121.344(a)(1) through 121.344(a)(18) of this part must be recorded with the ranges, accuracies, and resolutions specified in Appendix B of part 135 of this chapter, except that—

(i) Either the parameter listed in §121.344(a)(12) or (a)(15) of this part must be recorded; either the parameters listed in §121.344(a)(13) or (a)(16) of this part must be recorded; and either the parameter listed in §121.344(a)(14) or (a)(17) of this part must be recorded.

(ii) For airplanes with more than two engines, the parameter described in §121.344(a)(18) of this part must also be recorded if sufficient capacity is available on the existing recorder to record that parameter;

(iii) Parameters listed in §§121.344(a)(12) through 121.344(a)(17) of this part each may be recorded from a single source;

(iv) Any parameter for which no value is contained in Appendix B of part 135 of this chapter must be recorded within the ranges, accuracies, and resolutions specified in Appendix M of this part.

(2) Commensurate with the capacity of the recording system, all additional parameters listed in §121.344(a) of this part for which information sources are installed and which are connected to the recording system, must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix M of this part by August 20, 2001.

(c) For all turbine-engine-powered airplanes having a passenger seating configuration, excluding any required crewmember seats, of 10 to 19 seats, that are manufactured after August 19, 2002, the parameters listed in §121.344(a)(1) through (a)(88) of this part must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix M of this part.

(d) Each flight data recorder system required by this section must be installed in accordance with the requirements of §23.1459(a), (b), (d), and (e) of this chapter. A correlation must be established between the values recorded by the flight data recorder and the corresponding values being measured. The correlation must contain a sufficient number of correlation points to accurately establish the conversion from the recorded values to engineering units or discrete state over the full operating range of the parameter. A single correlation may be established for any group of airplanes—

(1) That are of the same type;

(2) On which the flight recorder system and its installation are the same; and

(3) On which there is no difference in the type design with respect to the installation of those sensors associated with the flight data recorder system. Correlation documentation must be maintained by the certificate holder.

(e) All airplanes subject to this section are also subject to the requirements and exceptions stated in §§121.344(g) through 121.344(k) of this part.

(f) For airplanes that were manufactured before August 18, 1997, the following airplane types need not comply with this section, but must continue to comply with applicable paragraphs of
§ 121.345Radio equipment.

(a) No person may operate an airplane unless it is equipped with radio equipment required for the kind of operation being conducted.

(b) Where two independent (separate and complete) radio systems are required by §§ 121.347 and 121.349, each system must have an independent antenna installation except that, where rigidly supported nonwire antennas or other antenna installations of equivalent reliability are used, only one antenna is required.

(c) ATC transponder equipment installed within the time periods indicated below must meet the performance and environmental requirements of the following TSO’s:
   (1) Through January 1, 1992: (i) Any class of TSO-C74b or any class of TSO-C74c as appropriate, provided that the equipment was manufactured before January 1, 1990; or
   (ii) The appropriate class of TSO-C112 (Mode S).
   (2) After January 1, 1992: The appropriate class of TSO-C112 (Mode S). For purposes of paragraph (c) (2) of this section, “installation” does not include—
   (i) Temporary installation of TSO-C74b or TSO-C74c substitute equipment, as appropriate, during maintenance of the permanent equipment;
   (ii) Reinstallation of equipment after temporary removal for maintenance; or
   (iii) For fleet operations, installation of equipment in a fleet aircraft after removal of the equipment for maintenance from another aircraft in the same operator’s fleet.


§ 121.347Radio equipment for operations under VFR over routes navigated by pilotage.

(a) No person may operate an airplane under VFR over routes that can be navigated by pilotage, unless it is equipped with the radio equipment necessary under normal operating conditions to fulfill the following:
   (1) Communicate with at least one appropriate ground station from any point on the route.
   (2) Communicate with appropriate traffic control facilities from any point within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport in which flights are intended.
   (3) Receive meteorological information from any point en route by either of two independent systems. One of the means provided to comply with this subparagraph may be used to comply with paragraphs (a)(1) and (2) of this section.

(b) No person may operate an airplane at night under VFR over routes than can be navigated by pilotage unless that airplane is equipped with the radio equipment necessary under normal operating conditions to fulfill the functions specified in paragraph (a) of this section and to receive radio navigational signals applicable to the route flown, except that a marker beacon receiver or ILS receiver is not required.


§ 121.349Radio equipment for operations under VFR over routes not navigated by pilotage or for operations under IFR or over-the-top.

(a) No person may operate an airplane under VFR over routes that cannot be navigated by pilotage or for operations conducted under IFR or over-the-top, unless the airplane is equipped with that radio equipment necessary under normal operating conditions to fulfill the functions specified in §121.347(a) and to receive satisfactorily by either of two independent systems radio navigational signals from all primary en route and approach navigational facilities intended to be used.
§ 121.351 Radio equipment for extended overwater operations and for certain other operations.

(a) Except as provided in paragraph (c) of this section, no person may conduct an extended overwater operation unless the airplane is equipped with the radio communication equipment necessary to comply with §121.349, an independent system that complies with §121.347 (a)(1), and two long-range navigation systems when VOR or ADF radio navigation equipment is unusable along a portion of the route.

(b) No certificate holder conducting a flag or supplemental operation or a domestic operation within the State of Alaska may conduct an operation without the equipment specified in paragraph (a) of this section, if the Administrator finds that equipment to be necessary for search and rescue operations because of the nature of the terrain to be flown over.

(c) Notwithstanding the requirements of paragraph (a) of this section, installation and use of a single LRNS and a single LRCS may be authorized by the Administrator and approved in the certificate holder's operations specifications for operations and routes in certain geographic areas. The following are among the operational factors the Administrator may consider in granting an authorization:

1. The ability of the flightcrew to reliably fix the position of the airplane within the degree of accuracy required by ATC,

2. The length of the route being flown, and

3. The duration of the very high frequency communications gap.

§121.353 Emergency equipment for operations over uninhabited terrain areas: Flag, supplemental, and certain domestic operations.

Unless the airplane has the following equipment, no person may conduct a flag or supplemental operation or a domestic operation within the States of Alaska or Hawaii over an uninhabited
area or any other area that (in its operations specifications) the Administrator specifies required equipment for search and rescue in case of an emergency:

(a) Suitable pyrotechnic signaling devices.

(b) An approved survival type emergency locator transmitter. Batteries used in this transmitter must be replaced (or recharged, if the battery is rechargeable) when the transmitter has been in use for more than 1 cumulative hour, or when 50 percent of their useful life (or for rechargeable batteries, 50 percent of their useful life of charge) has expired, as established by the transmitter manufacturer under its approval. The new expiration date for replacing (or recharging) the battery must be legibly marked on the outside of the transmitter. The battery useful life (or useful life of charge) requirements of this paragraph do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.

(c) Enough survival kits, appropriately equipped for the route to be flown for the number of occupants of the airplane.


§ 121.356 Traffic Alert and Collision Avoidance System.

(a) Unless otherwise authorized by the Administrator, each certificate holder operating a large airplane that has a passenger seating configuration, excluding any pilot seat, of more than 30 seats, shall equip its airplanes with an approved TCAS II traffic alert and collision avoidance system and the appropriate class of Mode S transponder according to the following schedule:

<table>
<thead>
<tr>
<th>Date Required equipage</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 30, 1990 ...... At least 20% of all covered airplanes, if the certificate holder operates more than 30 such airplanes.</td>
</tr>
<tr>
<td>December 30, 1991 ...... 50% of all covered airplanes.</td>
</tr>
<tr>
<td>December 30, 1993 ...... 100% of all covered airplanes.</td>
</tr>
</tbody>
</table>

(b) Unless otherwise authorized by the Administrator, after December 31, 1995, no person may operate a passenger or combination cargo/passenger (combi) airplane that has a passenger seat configuration, excluding any pilot seat, of 10 to 30 seats unless it is equipped with an approved traffic alert and collision avoidance system. If a TCAS II system is installed, it must be capable of coordinating with TCAS units that meet TSO C–119.

(c) The appropriate manuals required by §121.131 shall contain the following information on the TCAS II System or TCAS I System, as appropriate, as required by this section:

(1) Appropriate procedures for—
   (i) The operation of the equipment; and
   (ii) Proper flightcrew action with respect to the equipment.
§ 121.357 Airborne weather radar equipment requirements.

(a) No person may operate any transport category airplane (except C-46 type airplanes) or a nontransport category airplane certificated after December 31, 1964, unless approved airborne weather radar equipment has been installed in the airplane.

(b) [Reserved]

(c) Each person operating an airplane required to have approved airborne weather radar equipment installed shall, when using it under this part, operate it in accordance with the following:

1. Dispatch. No person may dispatch an airplane (or begin the flight of an airplane in the case of a certificate holder, that does not use a dispatch system) under IFR or night VFR conditions when current weather reports indicate that thunderstorms, or other potentially hazardous weather conditions that can be detected with airborne weather radar, may reasonably be expected along the route to be flown, unless the airborne weather radar equipment is in satisfactory operating condition.

2. If the airborne weather radar becomes inoperative en route, the airplane must be operated in accordance with the approved instructions and procedures specified in the operations manual for such an event.

(d) This section does not apply to airplanes used solely within the State of Hawaii or within the State of Alaska and that part of Canada west of longitude 130 degrees W, between latitude 70 degrees N, and latitude 53 degrees N, or during any training, test, or ferry flight.

(e) Notwithstanding any other provision of this chapter, an alternate electrical power supply is not required for airborne weather radar equipment.

§ 121.358 Low-altitude windshear system equipment requirements.

(a) Airplanes manufactured after January 2, 1991. No person may operate a turbine-powered airplane manufactured after January 2, 1991, unless it is equipped with either an approved airborne windshear warning and flight guidance system, an approved airborne detection and avoidance system, or an approved combination of these systems.

(b) Airplanes manufactured before January 3, 1991. Except as provided in paragraph (c) of this section, after January 2, 1991, no person may operate a turbine-powered airplane manufactured before January 3, 1991 unless it meets one of the following requirements as applicable:

1. The makes/models/series listed below must be equipped with either an approved airborne windshear warning and flight guidance system, an approved airborne detection and avoidance system, or an approved combination of these systems:
   (i) A-300-600;
   (ii) A-310—all series;
   (iii) A-320—all series;
   (iv) B-737-300, 400, and 500 series;
   (v) B-747-400;
   (vi) B-757—all series;
   (vii) B-767—all series;
   (viii) F-100—all series;
   (ix) MD-11—all series; and
   (x) MD-80 series equipped with an EFIS and Honeywell-970 digital flight guidance computer.

2. All other turbine-powered airplanes not listed above must be equipped with as a minimum requirement, an approved airborne windshear warning system. These airplanes may be equipped with an approved airborne windshear detection and avoidance system, or an approved combination of these systems.
(c) Extension of the compliance date. A certificate holder may obtain an extension of the compliance date in paragraph (b) of this section if it obtains FAA approval of a retrofit schedule. To obtain approval of a retrofit schedule and show continued compliance with that schedule, a certificate holder must do the following:

(1) Submit a request for approval of a retrofit schedule by June 1, 1990, to the Flight Standards Division Manager in the region of the certificate holding district office.

(2) Show that all of the certificate holder's airplanes required to be equipped in accordance with this section will be equipped by the final compliance date established for TCAS II retrofit.

(3) Comply with its retrofit schedule and submit status reports containing information acceptable to the Administrator. The initial report must be submitted by January 2, 1991, and subsequent reports must be submitted every six months thereafter until completion of the schedule. The reports must be submitted to the certificate holder's assigned Principal Avionics Inspector.

(d) Definitions. For the purposes of this section the following definitions apply:

(1) Turbine-powered airplane includes, e.g., turbofan-, turbojet-, propfan-, and ultra-high bypass fan-powered airplanes. The definition specifically excludes turbopropeller-powered airplanes.

(2) An airplane is considered manufactured on the date the inspection acceptance records reflect that the airplane is complete and meets the FAA Approved Type Design data.

[Doc. No. 25954, 55 FR 13242, Apr. 9, 1990]

§121.359 Cockpit voice recorders.

(a) No certificate holder may operate a large turbine engine powered airplane or a large pressurized airplane with four reciprocating engines unless an approved cockpit voice recorder is installed in that airplane and is operated continuously from the start of the use of the checklist (before starting engines for the purpose of flight), to completion of the final checklist at the termination of the flight.

(b) [Reserved]

(c) The cockpit voice recorder required by paragraph (a) of this section must meet the following application standards:

(1) The requirements of part 25 of this chapter in effect on August 31, 1977.

(2) After September 1, 1980, each recorder container must—

(i) Be either bright orange or bright yellow;

(ii) Have reflective tape affixed to the external surface to facilitate its location under water; and

(iii) Have an approved underwater locating device on or adjacent to the container which is secured in such a manner that they are not likely to be separated during crash impact, unless the cockpit voice recorder, and the flight recorder required by §121.343, are installed adjacent to each other in such a manner that they are not likely to be separated during crash impact.

(d) No person may operate a multi-engine, turbine-powered airplane having a passenger seat configuration of 10–19 seats unless it is equipped with an approved cockpit voice recorder that:

(1) Is installed in compliance with §23.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); §25.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g) of this chapter, as applicable; and

(2) Is operated continuously from the use of the checklist before the flight to completion of the final checklist at the end of the flight.

(e) No person may operate a multi-engine, turbine-powered airplane having a passenger seat configuration of 20 to 30 seats unless it is equipped with an approved cockpit voice recorder that—

(1) Is installed in compliance with §23.1457 or §25.1457 of this chapter, as applicable; and

(2) Is operated continuously from the use of the checklist before the flight to completion of the final checklist at the end of the flight.

(f) In complying with this section, an approved cockpit voice recorder having an erasure feature may be used, so that at any time during the operation of the recorder, information recorded more than 30 minutes earlier may be erased or otherwise obliterated.

(g) For those aircraft equipped to record the uninterrupted audio signals...
received by a boom or a mask microphone, the flight crewmembers are required to use the boom microphone below 18,000 feet mean sea level. No person may operate a large turbine engine powered airplane or a large pressurized airplane with four reciprocating engines manufactured after October 11, 1991, or on which a cockpit voice recorder has been installed after October 11, 1991, unless it is equipped to record the uninterrupted audio signal received by a boom or mask microphone in accordance with §25.1457(c)(5) of this chapter.

(h) In the event of an accident or occurrence requiring immediate notification of the National Transportation Safety Board under part 830 of its regulations, which results in the termination of the flight, the certificate holder shall keep the recorded information for at least 60 days or, if requested by the Administrator or the Board, for a longer period. Information obtained from the record is used to assist in determining the cause of accidents or occurrences in connection with investigations under part 830. The Administrator does not use the record in any civil penalty or certificate action.

§ 121.361 Applicability.

(a) Except as provided by paragraph (b) of this section, this subpart prescribes requirements for maintenance, preventive maintenance, and alterations for all certificate holders.

(b) The Administrator may amend a certificate holder's operations specifications to permit deviation from those provisions of this subpart that

§ 121.360 Ground proximity warning-glide slope deviation alerting system.

(a) No person may operate a turbine-powered airplane unless it is equipped with a ground proximity warning system that meets the performance and environmental standards of TSO-C92 (available from the FAA, 800 Independence Avenue SW., Washington, DC 20591) or incorporates TSO-approved ground proximity warning equipment.

(b) For the ground proximity warning system required by this section, the Airplane Flight Manual shall contain—

(i) Appropriate procedures for—

(ii) Deactivation for planned abnormal and emergency conditions;

(iii) Inhibition of Mode 4 warnings based on flaps being in other than the landing configuration if the system incorporates a Mode 4 flap warning inhibition control; and

(2) An outline of all input sources that must be operating.

(c) No person may deactivate a ground proximity warning system required by this section except in accordance with the procedures contained in the Airplane Flight Manual.

(d) Whenever a ground proximity warning system required by this section is deactivated, an entry shall be made in the airplane maintenance record that includes the date and time of deactivation.

(e) No person may operate a turbine-powered airplane unless it is equipped with a ground proximity warning/glide slope deviation alerting system that meets the performance and environmental standards contained in TSO-C92 or TSO-C92b or incorporates TSO-approved ground proximity warning-glide slope deviation alerting equipment.

(f) No person may operate a turbojet powered airplane equipped with a system required by paragraph (e) of this section, that incorporates equipment that meets the performance and environmental standards of TSO-C92b or is approved under that TSO, using other than Warning Envelopes 1 or 3 for Warning Modes 1 and 4.

Subpart L—Maintenance, Preventive Maintenance, and Alterations

Source: Docket No. 6258, 29 FR 19205, Dec. 31, 1964, unless otherwise noted.

§ 121.361 Applicability.

(a) Except as provided by paragraph (b) of this section, this subpart prescribes requirements for maintenance, preventive maintenance, and alterations for all certificate holders.

(b) The Administrator may amend a certificate holder's operations specifications to permit deviation from those provisions of this subpart that
§ 121.363 Responsibility for airworthiness.

(a) Each certificate holder is primarily responsible for—

(1) The airworthiness of its aircraft, including airframes, aircraft engines, propellers, appliances, and parts thereof; and

(2) The performance of the maintenance, preventive maintenance, and alteration of its aircraft, including airframes, aircraft engines, propellers, appliances, emergency equipment, and parts thereof, in accordance with its manual and the regulations of this chapter.

(b) A certificate holder may make arrangements with another person for the performance of any maintenance, preventive maintenance, or alterations. However, this does not relieve the certificate holder of the responsibility specified in paragraph (a) of this section.

§ 121.365 Maintenance, preventive maintenance, and alteration organization.

(a) Each certificate holder that performs any of its maintenance (other than required inspections), preventive maintenance, or alterations, and each person with whom it arranges for the performance of that work must have an organization adequate to perform the work.

(b) Each certificate holder that performs any inspections required by its manual shall arrange, in accordance with §121.369(b)(2) or (3) in this subpart referred to as required inspections) and each person with whom it arranges for the performance of that work must have an organization adequate to perform that work.

(c) Each person performing required inspections in addition to other maintenance, preventive maintenance, or alterations, shall organize the performance of those functions so as to separate the required inspection functions from the other maintenance, preventive maintenance, and alteration functions. The separation shall be below the level of administrative control at which overall responsibility for the required inspection functions and other maintenance, preventive maintenance, and alteration functions are exercised.

§ 121.367 Maintenance, preventive maintenance, and alterations programs.

Each certificate holder shall have an inspection program and a program covering other maintenance, preventive maintenance, and alterations that ensures that—

(a) Maintenance, preventive maintenance, and alterations performed by it, or by other persons, are performed in accordance with the certificate holder's manual;

(b) Competent personnel and adequate facilities and equipment are provided for the proper performance of maintenance, preventive maintenance, and alterations; and

(c) Each aircraft released to service is airworthy and has been properly maintained for operation under this part.

§ 121.369 Manual requirements.

(a) The certificate holder shall put in its manual a chart or description of the certificate holder's organization required by §121.365 and a list of persons with whom it has arranged for the performance of any of its required inspections, other maintenance, preventive maintenance, or alterations, including a general description of that work.
§ 121.371 Required inspection personnel.

(a) No person may use any person to perform required inspections unless the person performing the inspection is appropriately certificated, properly trained, qualified, and authorized to do so.

(b) No person may allow any person to perform a required inspection unless, at that time, the person performing that inspection is under the supervision and control of an inspection unit.

(c) No person may perform a required inspection if he performed the item of work required to be inspected.

(d) Each certificated holder shall maintain, or shall determine that each person with whom it arranges to perform its required inspections maintains, a current listing of persons who have been trained, qualified, and authorized to conduct required inspections. The persons must be identified by name, occupational title, and the inspections that they are authorized to perform. The certificated holder (or person with whom it arranges to perform its required inspections) shall give written information to each person so authorized describing the extent of his responsibilities, authorities, and
inspectional limitations. The list shall be made available for inspection by the Administrator upon request.

§ 121.373 Continuing analysis and surveillance.

(a) Each certificate holder shall establish and maintain a system for the continuing analysis and surveillance of the performance and effectiveness of its inspection program and the program covering other maintenance, preventive maintenance, and alterations and for the correction of any deficiency in those programs, regardless of whether those programs are carried out by the certificate holder or by another person.

(b) Whenever the Administrator finds that either or both of the programs described in paragraph (a) of this section does not contain adequate procedures and standards to meet the requirements of this part, the certificate holder shall, after notification by the Administrator, make any changes in those programs that are necessary to meet those requirements.

(c) A certificate holder may petition the Administrator to reconsider the notice to make a change in a program. The petition must be filed with the FAA certificate-holding district office charged with the overall inspection of the certificate holder's operations within 30 days after the certificate holder receives the notice. Except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the Administrator.

§ 121.375 Maintenance and preventive maintenance training program.

Each certificate holder or person performing maintenance or preventive maintenance functions for it shall have a training program to ensure that each person (including inspection personnel) who determines the adequacy of work done is fully informed about procedures and techniques and new equipment in use and is competent to perform his duties.

§ 121.377 Maintenance and preventive maintenance personnel duty time limitations.

Within the United States, each certificate holder (or person performing maintenance or preventive maintenance functions for it) shall relieve each person performing maintenance or preventive maintenance from duty for a period of at least 24 consecutive hours during any seven consecutive days, or the equivalent thereof within any one calendar month.

§ 121.378 Certificate requirements.

(a) Except for maintenance, preventive maintenance, alterations, and required inspections performed by repair stations certificated under the provisions of subpart C of part 145, each person who is directly in charge of maintenance, preventive maintenance, or alteration, and each person performing required inspections must hold an appropriate airman certificate.

(b) For the purposes of this section, a person directly in charge is each person assigned to a position in which he is responsible for the work of a shop or station that performs maintenance, preventive maintenance, alterations, or other functions affecting aircraft airworthiness. A person who is directly in charge need not physically observe and direct each worker constantly but must be available for consultation and decision on matters requiring instruction or decision from higher authority than that of the persons performing the work.

§ 121.379 Authority to perform and approve maintenance, preventive maintenance, and alterations.

(a) A certificate holder may perform, or it may make arrangements with other persons to perform, maintenance, preventive maintenance, and alterations as provided in its continuous airworthiness maintenance program and its maintenance manual. In addition, a certificate holder may perform these functions for another certificate holder as provided in the continuous airworthiness maintenance program.
and maintenance manual of the other certificate holder.

(b) A certificate holder may approve any aircraft, airframe, aircraft engine, propeller, or appliance for return to service after maintenance, preventive maintenance, or alterations that are performed under paragraph (a) of this section. However, in the case of a major repair or major alteration, the work must have been done in accordance with technical data approved by the Administrator.


§ 121.380 Maintenance recording requirements.

(a) Each certificate holder shall keep (using the system specified in the manual required in §121.369) the following records for the periods specified in paragraph (c) of this section:

(1) All the records necessary to show that all requirements for the issuance of an airworthiness release under §121.709 have been met.

(2) Records containing the following information:

(i) The total time in service of the airframe.

(ii) Except as provided in paragraph (b) of this section, the total time in service of each engine and propeller.

(iii) The current status of life-limited parts of each airframe, engine, propeller, and appliance.

(iv) The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.

(v) The identification of the current inspection status of the aircraft, including the times since the last inspections required by the inspection program under which the aircraft and its appliances are maintained.

(vi) The current status of applicable airworthiness directives, including the date and methods of compliance, and, if the airworthiness directive involves recurring action, the time and date when the next action is required.

(vii) A list of current major alterations to each airframe, engine, propeller, and appliance.

(b) A certificate holder need not record the total time in service of an engine or propeller on a transport category airplane that has a passenger seat configuration of more than 30 seats or a nontransport category airplane type certificated before January 1, 1958, until the following, whichever occurs first:

(1) March 20, 1997; or

(2) The date of the first overhaul of the engine or propeller, as applicable, after January 19, 1996.

(c) Each certificate holder shall retain the records required to be kept by this section for the following periods:

(1) Except for the records of the last complete overhaul of each airframe, engine, propeller, and appliance, the records specified in paragraph (a)(1) of this section shall be retained until the work is repeated or superseded by other work or for one year after the work is performed.

(2) The records of the last complete overhaul of each airframe, engine, propeller, and appliance shall be retained until the work is superseded by work of equivalent scope and detail.

(3) The records specified in paragraph (a)(2) of this section shall be retained and transferred with the aircraft at the time the aircraft is sold.

(d) The certificate holder shall make all maintenance records required to be kept by this section available for inspection by the Administrator or any authorized representative of the National Transportation Safety Board (NTSB).

[Doc. No. 10658, 37 FR 15983, Aug. 9, 1972, as amended by Amdt. 121-251, 60 FR 65933, Dec. 20, 1995]

§ 121.380a Transfer of maintenance records.

Each certificate holder who sells a U.S. registered aircraft shall transfer to the purchaser, at the time of sale, the following records of that aircraft, in plain language form or in coded form at the election of the purchaser, if the coded form provides for the preservation and retrieval of information in a manner acceptable to the Administrator:

(a) The record specified in §121.380(a)(2).

(b) The records specified in §121.380(a)(1) which are not included in the records covered by paragraph (a) of this section, except that the purchaser may permit the seller to keep physical
§ 121.381 Custody of such records. However, custody of records in the seller does not relieve the purchaser of his responsibility under §121.380(c) to make the records available for inspection by the Administrator or any authorized representative of the National Transportation Safety Board (NTSB).

[Doc. No. 10658, 37 FR 15984, Aug. 9, 1972]

Subpart M—Airman and Crewmember Requirements

SOURCE: Docket No. 6258, 29 FR 19212, Dec. 31, 1964, unless otherwise noted.

§ 121.381 Applicability.

This subpart prescribes airman and crewmember requirements for all certificate holders.

§ 121.383 Airman: Limitations on use of services.

(a) No certificate holder may use any person as an airman nor may any person serve as an airman unless that person—

(1) Holds an appropriate current airman certificate issued by the FAA;

(2) Has any required appropriate current airman and medical certificates in his possession while engaged in operations under this part; and

(3) Is otherwise qualified for the operation for which he is to be used.

(b) Each airman covered by paragraph (a)(2) of this section shall present either or both certificates for inspection upon the request of the Administrator.

(c) No certificate holder may use the services of any person as a pilot on an airplane engaged in operations under this part if that person has reached his 60th birthday. No person may serve as a pilot on an airplane engaged in operations under this part if that person has reached his 60th birthday.


§ 121.385 Composition of flight crew.

(a) No certificate holder may operate an airplane with less than the minimum flight crew in the airworthiness certificate or the airplane Flight Manual approved for that type airplane and required by this part for the kind of operation being conducted.

(b) In any case in which this part requires the performance of two or more functions for which an airman certificate is necessary, that requirement is not satisfied by the performance of multiple functions at the same time by one airman.

(c) The minimum pilot crew is two pilots and the certificate holder shall designate one pilot as pilot in command and the other second in command.


§ 121.387 Flight engineer.

No certificate holder may operate an airplane for which a type certificate was issued before January 2, 1964, having a maximum certificated takeoff weight of more than 80,000 pounds without a flight engineer certificate. For each airplane type certificated after January 1, 1964, the requirement for a flight engineer is determined under the type certification requirements of §25.1523.

[Doc. No. 5025, 30 FR 6067, Apr. 29, 1965]

§ 121.389 Flight navigator and specialized navigation equipment.

(a) No certificate holder may operate an airplane outside the 48 contiguous States and the District of Columbia, when its position cannot be reliably fixed for a period of more than 1 hour, without—

(1) A flight crewmember who holds a current flight navigator certificate; or

(2) Specialized means of navigation approved in accordance with §121.355 which enables a reliable determination to be made of the position of the airplane by each pilot seated at his duty station.

(b) Notwithstanding paragraph (a) of this section, the Administrator may also require a flight navigator or specialized navigation equipment, or both, when specialized means of navigation are necessary for 1 hour or less. In making this determination, the Administrator considers—

(1) The speed of the airplane;
§ 121.393 Crewmember requirements at stops where passengers remain on board.

At stops where passengers remain on board, the certificate holder must meet the following requirements:

(a) On each airplane for which a flight attendant is not required by §121.391(a), the certificate holder must ensure that a person who is qualified in the emergency evacuation procedures for the airplane, as required in §121.417, and who is identified to the passengers, remains:

(1) On board the airplane; or
(2) Nearby the airplane, in a position to adequately monitor passenger safety, and:

(b) If, in conducting the emergency evacuation demonstration required under §121.291 (a) or (b), the certificate holder used more flight attendants than is required under paragraph (a) of this section for the maximum seating capacity of the airplane used in the demonstration, he may not, thereafter, take off that airplane—

(1) In its maximum seating capacity configuration with fewer flight attendants than the number used during the emergency evacuation demonstration; or

(2) In any reduced seating capacity configuration with fewer flight attendants than the number required by paragraph (a) of this section for that seating capacity plus the number of flight attendants used during the emergency evacuation demonstration that were in excess of those required under paragraph (a) of this section.

(c) The number of flight attendants approved under paragraphs (a) and (b) of this section are set forth in the certificate holder’s operations specifications.

(d) During takeoff and landing, flight attendants required by this section shall be located as near as practicable to required floor level exists and shall be uniformly distributed throughout the airplane in order to provide the most effective egress of passengers in event of an emergency evacuation. During taxi, flight attendants required by this section must remain at their duty stations with safety belts and shoulder harnesses fastened except to perform duties related to the safety of the airplane and its occupants.

§ 121.391 Flight attendants.

(a) Each certificate holder shall provide at least the following flight attendants on each passenger-carrying airplane used:

(1) For airplanes having a maximum payload capacity of more than 7,500 pounds and having a seating capacity of more than 9 but less than 51 passengers—one flight attendant.

(2) For airplanes having a maximum payload capacity of 7,500 pounds or less and having a seating capacity of more than 19 but less than 51 passengers—one flight attendant.

(3) For airplanes having a seating capacity of more than 50 but less than 101 passengers—two flight attendants.

(4) For airplanes having a seating capacity of more than 100 passengers—two flight attendants plus one additional flight attendant for each unit (or part of a unit) of 50 passenger seats above a seating capacity of 100 passengers.

(b) If, in conducting the emergency evacuation demonstration required under §121.291 (a) or (b), the certificate holder used more flight attendants than is required under paragraph (a) of this section for the maximum seating capacity of the airplane used in the demonstration, he may not, thereafter, take off that airplane—

(1) In its maximum seating capacity configuration with fewer flight attendants than the number used during the emergency evacuation demonstration; or

(2) In any reduced seating capacity configuration with fewer flight attendants than the number required by paragraph (a) of this section for that seating capacity plus the number of flight attendants used during the emergency evacuation demonstration that were in excess of those required under paragraph (a) of this section.

(c) Operations where a flight navigator or special navigation equipment, or both, are required are specified in the operations specifications of the air carrier or commercial operator.

§ 121.395 Aircraft dispatcher: Domestic and flag operations.

Each certificate holder conducting domestic or flag operations shall provide enough qualified aircraft dispatchers at each dispatch center to ensure proper operational control of each flight.

[Doc. No. 28154, 61 FR 2611, Jan. 26, 1996]
(2) Transition training. The training required for crewmembers and dispatchers who have qualified and served in the same capacity on another airplane of the same group.

(3) Upgrade training. The training required for crewmembers who have qualified and served as second in command or flight engineer on a particular airplane type, before they serve as pilot in command or second in command, respectively, on that airplane.

(4) Differences training. The training required for crewmembers and dispatchers who have qualified and served on a particular type airplane, when the Administrator finds differences training is necessary before a crewmember serves in the same capacity on a particular variation of that airplane.

(5) Programmed hours. The hours of training prescribed in this subpart which may be reduced by the Administrator upon a showing by the certificate holder that circumstances justify a lesser amount.

(6) Inflight. Refers to maneuvers, procedures, or functions that must be conducted in the airplane.

(7) Training center. An organization governed by the applicable requirements of part 142 of this chapter that provides training, testing, and checking under contract or other arrangement to certificate holders subject to the requirements of this part.

(8) Requalification training. The training required for crewmembers previously trained and qualified, but who have become unqualified due to not having met within the required period the recurrent training requirements of §121.427 or the proficiency check requirements of §121.441.

§ 121.401 Training program: General.

(a) Each certificate holder shall:

(1) Establish, obtain the appropriate initial and final approval of, and provide, a training program that meets the requirements of this subpart and appendices E and F and that insures that each crewmember, aircraft dispatcher, flight instructor, and check airman, and each person assigned duties for the carriage and handling of dangerous articles and magnetized materials, is adequately trained to perform his assigned duties.

(2) Provide adequate ground and flight training facilities and properly qualified ground instructors for the training required by this subpart;

(3) Provide and keep current with respect to each airplane type and, if applicable, the particular variations within that airplane type, appropriate training material, examinations, forms, instructions, and procedures for use in conducting the training and checks required by this part; and

(4) Provide enough flight instructors, simulator instructors, and approved check airmen to conduct required flight training and flight checks, and simulator training courses permitted under this part.

(b) Whenever a crewmember or aircraft dispatcher who is required to take recurrent training, a flight check, or a competence check, takes the check or completes the training in the calendar month before or after the calendar month in which that training or check is required, he is considered to have taken or completed it in the calendar month in which it was required.

(c) Each instructor, supervisor, or check airman who is responsible for a particular ground training subject, segment of flight training, course of training, flight check, or competence check under this part shall certify as to the proficiency and knowledge of the crewmember, aircraft dispatcher, flight instructor, or check airman concerned upon completion of that training or check. That certification shall be made a part of the crewmember’s or dispatcher’s record. When the certification required by this paragraph is made by an entry in a computerized recordkeeping system, the certifying instructor, supervisor, or check airman must be identified with that entry. However, the signature of the certifying instructor, supervisor, or check airman is not required for computerized entries.

(d) Training subjects that are applicable to more than one airplane or crewmember position and that have been satisfactorily completed in connection with prior training for another
§ 121.402 Training program: Special rules.

(a) Other than the certificate holder, only another certificate holder certificated under this part or a flight training center certificated under part 142 of this chapter is eligible under this subpart to provide flight training, testing, and checking under contract or other arrangement to those persons subject to the requirements of this subpart.

(b) A certificate holder may contract with, or otherwise arrange to use the services of, a training center certificated under part 142 of this chapter to provide training, testing, and checking required by this part only if the training center—

(1) Holds applicable training specifications issued under part 142 of this chapter;

(2) Has facilities, training equipment, and courseware meeting the applicable requirements of part 142 of this chapter;

(3) Has approved curriculums, curriculum segments, and portions of curriculum segments applicable for use in training courses required by this subpart; and

(4) Has sufficient instructor and check airmen qualified under the applicable requirements of §§121.411 or 121.413 to provide training, testing, and checking to persons subject to the requirements of this subpart.

§ 121.403 Training program: Curriculum.

(a) Each certificate holder must prepare and keep current a written training program curriculum for each type of airplane with respect to dispatchers and each crewmember required for that type airplane. The curriculum must include ground and flight training required by this part.

(b) Each training program curriculum must include:

(1) A list of principal ground training subjects, including emergency training subjects, that are provided.

(2) A list of all the training devices mockups, systems trainers, procedures trainers, or other training aids that the certificate holder will use.

(3) Detailed descriptions or pictorial displays of the approved normal, abnormal, and emergency maneuvers, procedures and functions that will be performed during each flight training phase or flight check, indicating those maneuvers, procedures and functions that are to be performed during the inflight portions of flight training and flight checks.

(4) A list of airplane simulators or other training devices approved under §121.407, including approvals for particular maneuvers, procedures or functions.

(5) The programmed hours of training that will be applied to each phase of training.

(6) A copy of each statement issued by the Administrator under §121.405(d) for reduction of programmed hours of training.
§ 121.404 Compliance dates: Crew and dispatcher resource management training.

After March 19, 1998, no certificate holder may use a person as a flight crewmember, and after March 19, 1999, no certificate holder may use a person as a flight attendant or aircraft dispatcher unless that person has completed approved crew resource management (CRM) or dispatcher resource management (DRM) initial training, as applicable, with that certificate holder or with another certificate holder.

[Doc. No. 28154, 61 FR 30435, June 14, 1996]

§ 121.405 Training program and revision: Initial and final approval.

(a) To obtain initial and final approval of a training program, or a revision to an approved training program, each certificate holder must submit to the Administrator—

(1) An outline of the proposed program or revision, including an outline of the proposed or revised curriculum, that provides enough information for a preliminary evaluation of the proposed training program or revised training program; and

(2) Additional relevant information as may be requested by the Administrator.

(b) If the proposed training program or revision complies with this subpart the Administrator grants initial approval in writing after which the certificate holder may conduct the training in accordance with that program. The Administrator then evaluates the effectiveness of the training program and advises the certificate holder of deficiencies, if any, that must be corrected.

(c) The Administrator grants final approval of the training program or revision if the certificate holder shows that the training conducted under the initial approval set forth in paragraph (b) of this section ensures that each person that successfully completes the training is adequately trained to perform his assigned duties.

(d) In granting initial and final approval of training programs or revisions, including reductions in programmed hours specified in this subpart, the Administrator considers the training aids, devices, methods, and procedures listed in the certificate holder's curriculum as set forth in §121.403 that increase the quality and effectiveness of the teaching-learning process.

If approval of reduced programmed hours of training is granted, the Administrator provides the certificate holder with a statement of the basis for the approval.

(e) Whenever the Administrator finds that revisions are necessary for the continued adequacy of a training program that has been granted final approval, the certificate holder shall, after notification by the Administrator, make any changes in the program that are found necessary by the Administrator. Within 30 days after the certificate holder receives such notice, it may file a petition to reconsider the notice with the certificate-holding district office. The filing of a petition to reconsider stays the notice pending a decision by the Administrator. However, if the Administrator finds that there is an emergency that requires immediate action in the interest of safety in air transportation, he may, upon a statement of the reasons, require a change effective without stay.

(f) Each certificate holder described in §135.3 (b) and (c) of this chapter must include the material required by §121.403 in the manual required by §135.21 of this chapter.

(g) The Administrator may grant a deviation to certificate holders described in §135.3 (b) and (c) of this chapter to allow reduced programmed hours of ground training required by §121.419 if it is found that a reduction is warranted based on the certificate holder's operations and the complexity of the make, model, and series of the aircraft used.


§ 121.406 Credit for previous CRM/DRM training.

(a) For flightcrew members, the Administrator may credit CRM training received before March 19, 1998 toward all or part of the initial ground CRM training required by §121.419.
§ 121.407 Training program: Approval of airplane simulators and other training devices.

(a) Each airplane simulator and other training device that is used in a training course permitted under §121.409, in checks required under subpart O of this part or as permitted in appendices E and F to this part must:

(1) Be specifically approved for—
   (i) The certificate holder;
   (ii) The type airplane and, if applicable, the particular variation within type, for which the training or check is being conducted; and
   (iii) The particular maneuver, procedure, or crewmember function involved.

(2) Maintain the performance, functional, and other characteristics that are required for approval.

(3) Be modified to conform with any modification to the airplane being simulated that results in changes to performance, functional, or other characteristics required for approval.

(4) Be given a daily functional pre-flight check before being used.

(5) Have a daily discrepancy log kept with each discrepancy entered in that log by the appropriate instructor or check airman at the end of each training or check flight.

(b) A particular airplane simulator or other training device may be approved for use by more than one certificate holder.

(c) An airplane simulator may be used instead of the airplane to satisfy the in-flight requirements of §§121.439 and 121.441 and appendices E and F of this part, if the simulator—

(1) Is approved under this section and meets the appropriate simulator requirements of appendix H of this part; and

(2) Is used as part of an approved program that meets the training requirements of §121.424(a) and (c) and appendix H of this part.

(d) An airplane simulator approved under this section must be used instead of the airplane to satisfy the pilot flight training requirements prescribed in the certificate holder’s approved low-altitude windshear flight training program set forth in §121.409(d) of this part.

§ 121.409 Training courses using airplane simulators and other training devices.

(a) Training courses utilizing airplane simulators and other training devices may be included in the certificate holder’s approved training program for use as provided in this section.

(b) A course of training in an airplane simulator may be included for use as provided in §121.411 if that course—

(1) Provides at least 4 hours of training at the pilot controls of an airplane simulator as well as a proper briefing before and after the training;

(2) Provides training in at least the procedures and maneuvers set forth in appendix F to this part; or

(3) Provides line-oriented training that—
   (i) Utilizes a complete flight crew;
   (ii) Includes at least the maneuvers and procedures (abnormal and emergency) that may be expected in line operations;
   (iii) Is representative of the flight segment appropriate to the operations being conducted by the certificate holder; and

(4) Is given by an instructor who meets the applicable requirements of §121.412.
The satisfactory completion of the course of training must be certified by either the Administrator or a qualified check airman.

(c) The programmed hours of flight training set forth in this subpart do not apply if the training program for the airplane type includes—
(1) A course of pilot training in an airplane simulator as provided in §121.424(d); or
(2) A course of flight engineer training in an airplane simulator or other training device as provided in §121.425(c).

(d) Each certificate holder required to comply with §121.356 of this part must use an approved simulator for each airplane type in each of its pilot training courses that provides training in at least the procedures and maneuvers set forth in the certificate holder’s approved low-altitude wind shear flight training program. The approved low-altitude wind shear flight training, if applicable, must be included in each of the pilot flight training courses prescribed in §§121.409(b), 121.418, 121.424, and 121.427 of this part.

§ 121.411 Qualifications: Check airmen (airplane) and check airmen (simulator).

(a) For the purposes of this section and §121.413:
(1) A check airman (airplane) is a person who is qualified, and permitted, to conduct flight checks or instruction in an airplane, in a flight simulator, or in a flight training device for a particular type airplane.
(2) A check airman (simulator) is a person who is qualified to conduct flight checks or instruction, but only in a flight simulator or in a flight training device for a particular type airplane.
(3) Check airmen (airplane) and check airmen (simulator) are those check airmen who perform the functions described in §121.401(a)(4).

(b) No certificate holder may use a person, nor may any person serve as a check airman (airplane) in a training program established under this subpart unless, with respect to the airplane type involved, that person—
(1) Holds the airman certificates and ratings required to serve as a pilot in command, a flight engineer, or a flight navigator, as applicable, in operations under this part;
(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part;
(3) Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part;
(4) Has satisfactorily completed the applicable training requirements of §121.413 including in-flight training and practice for initial and transition training;
(5) Holds at least a Class III medical certificate unless serving as a required crewmember, in which case holds a Class I or Class II medical certificate as appropriate;
(6) Has satisfied the recency of experience requirements of §121.439; and
(7) Has been approved by the Administrator for the check airman duties involved.

(c) No certificate holder may use a person nor may any person serve as a check airman (simulator) in a training program established under this subpart unless, with respect to the airplane type involved, that person meets the provisions of paragraph (b) of this section, or—
(1) Holds the airman certificates and ratings, except medical certificate, required to serve as a pilot in command, a flight engineer, or a flight navigator, as applicable, in operations under this part;
(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part.

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navigator in operations under this part;
(3) Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command, flight engineer, or flight navigator in operations under this part;
(4) Has satisfactorily completed the applicable training requirements of §121.413 and
(5) Has been approved by the Administrator for the check airman (simulator) duties involved.
(d) Completion of the requirements in paragraphs (b) (2), (3), and (4) or (c) (2), (3), and (4) of this section, as applicable, shall be entered in the individual's training record maintained by the certificate holder.
(e) Check airmen who have reached their 60th birthday or who do not hold an appropriate medical certificate may function as check airmen, but may not serve as pilot flightcrew members in operations under this part.
(f) A check airman (simulator) must accomplish the following—
(1) Fly at least two flight segments as a required crewmember for the type airplane involved within the 12-month period preceding the performance of any check airman duty in a flight simulator; or
(2) Satisfactorily complete an approved line-observation program within the period prescribed by that program and that must precede the performance of any check airman duty in a flight simulator.
(g) The flight segments or line-observation program required in paragraph (f) of this section are considered to be completed in the month required if completed in the calendar month before or in the calendar month after the month in which it is due.

[Doc. No. 28471, 61 FR 30741, June 17, 1996]

§ 121.412 Qualifications: Flight instructors (airplane) and flight instructors (simulator).

(a) For the purposes of this section and §121.414:
(1) A flight instructor (airplane) is a person who is qualified to instruct in an airplane, in a flight simulator, or in a flight training device for a particular type airplane.
(2) A flight instructor (simulator) is a person who is qualified to instruct, but only in a flight simulator, in a flight training device, or both, for a particular type airplane.
(3) Flight instructors (airplane) and flight instructors (simulator) are those instructors who perform the functions described in §121.401(a)(4).
(b) No certificate holder may use a person nor may any person serve as a flight instructor (airplane) in a training program established under this subpart unless, with respect to the airplane type involved, that person—
(1) Holds the airman certificates and rating required to serve as a pilot in command, a flight engineer, or a flight navigator, as applicable, in operations under this part;
(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part;
(3) Has satisfactorily completed the applicable training requirements of §121.414, including in-flight training and practice for initial and transition training;
(4) Has satisfactorily completed the applicable training requirements of §121.414, including in-flight training and practice for initial and transition training;
(5) Holds at least a Class III medical certificate unless serving as a required crewmember, in which case holds a Class I or a Class II medical certificate as appropriate.
(6) Has satisfied the recency of experience requirements of §121.429.
(c) No certificate holder may use a person, nor may any person serve as a flight instructor (simulator) in a training program established under this subpart, unless, with respect to the airplane type involved, that person meets the provisions of paragraph (b) of this section, or—
(1) Holds the airman certificates and ratings, except medical certificate, required to serve as a pilot in command, a flight engineer, or a flight navigator, as applicable, in operations under this part except before March 19, 1997 that
person need not hold a type rating for the airplane type involved provided that he or she only provides the instruction described in §§ 121.409(b) and 121.411;

(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part;

(3) Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part; and

(4) Has satisfactorily completed the applicable training requirements of § 121.414.

(d) Completion of the requirements in paragraphs (b) (2), (3), and (4) or (c) (2), (3), and (4) of this section as applicable shall be entered in the individual’s training record maintained by the certificate holder.

(e) Flight instructors who have reached their 60th birthday, or who do not hold an appropriate medical certificate, may function as flight instructors, but may not serve as pilot flight crewmembers in operations under this part.

(f) A flight instructor (simulator) must accomplish the following—

(1) Fly at least two flight segments as a required crewmember for the type of airplane within the 12-month period preceding the performance of any flight instructor duty in a flight simulator (and must hold a Class I or Class II medical certificate as appropriate); or

(2) Satisfactorily complete an approved line-observation program within the period prescribed by that program and that must precede the performance of any check airman duty in a flight simulator.

(g) The flight segments or line-observation program required in paragraph (f) of this section is considered completed in the month required if completed in the calendar month after the month in which it is due.


§ 121.413 Initial and transition training and checking requirements: Check airmen (airplane), check airmen (simulator).

(a) No certificate holder may use a person nor may any person serve as a check airman unless—

(1) That person has satisfactorily completed initial or transition check airman training; and

(2) Within the preceding 24 calendar months that person satisfactorily conducts a proficiency or competency check under the observation of an FAA inspector or an aircrew designated examiner employed by the operator. The observation check may be accomplished in part or in full in an airplane, in a flight simulator, or in a flight training device. This paragraph applies after March 19, 1997.

(b) The observation check required by paragraph (a)(2) of this section is considered to have been completed in the month required if completed in the calendar month before, or the calendar month after, the month in which it is due.

(c) The initial ground training for check airmen must include the following:

(1) Check airman duties, functions, and responsibilities.

(2) The applicable Code of Federal Regulations and the certificate holder’s policies and procedures.

(3) The appropriate methods, procedures, and techniques for conducting the required checks.

(4) Proper evaluation of student performance including the detection of—

(i) Improper and insufficient training; and

(ii) Personal characteristics of an applicant that could adversely affect safety.

(5) The appropriate corrective action in the case of unsatisfactory checks.

(6) The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the airplane.
(d) The transition ground training for check airmen must include approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the airplane to which the check airman is assigned.

(e) The initial and transition flight training for pilot check airmen (airplane), flight engineer check airmen (airplane), and flight navigator check airmen (airplane) must include the following:

1. The safety measures for emergency situations that are likely to develop during a check.
2. The potential results of improper, untimely, or non-execution of safety measures during a check.
3. For pilot check airman (airplane)—
   (i) Training and practice in conducting flight checks from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence to conduct the pilot flight checks required by this part; and
   (ii) The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during a check.
4. For flight engineer check airmen (airplane) and flight navigator check airmen (airplane), training to ensure competence to perform assigned duties.

(f) The requirements of paragraph (e) of this section may be accomplished in full or in part in flight, in a flight simulator, or in a flight training device, as appropriate.

(g) The initial ground training for flight instructors must include the following:

1. Flight instructor duties, functions, and responsibilities.
2. The applicable Code of Federal Regulations and the certificate holder’s policies and procedures.
3. The appropriate methods, procedures, and techniques for conducting flight instruction.
4. Proper evaluation of student performance including the detection of—
   (i) Improper and insufficient training; and
   (ii) Personal characteristics of an applicant that could adversely affect safety.
5. The corrective action in the case of unsatisfactory training progress.
6. The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the airplane.
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§ 121.415 Crewmember and dispatcher training requirements.

(a) Each training program must provide the following ground training as appropriate to the particular assignment of the crewmember or dispatcher:
   (1) Basic indoctrination ground training for newly hired crewmembers or dispatchers including 40 programmed hours of instruction, unless reduced under §121.405 or as specified in §121.401(d), in at least the following—
      (i) Duties and responsibilities of crewmembers or dispatchers, as applicable;
      (ii) Appropriate provisions of the Federal Aviation Regulations;
      (iii) Contents of the certificate holder’s operating certificate and operations specifications (not required for flight attendants); and
      (iv) Appropriate portions of the certificate holder’s operating manual.
   (2) The initial and transition ground training specified in §§121.419 through 121.422, as applicable.
   (3) Emergency training as specified in §121.417 (not required for dispatchers).
   (b) Each training program must provide the flight training specified in §§121.424 through 121.426, as applicable.
   (c) Each training program must provide recurrent ground and flight training as provided in §121.427.
   (d) Each training program must provide the differences training specified in §121.418 if the Administrator finds that, due to differences between airplanes of the same type operated by the certificate holder, additional training is necessary to insure that each crewmember and dispatcher is adequately trained to perform his assigned duties.
   (e) Upgrade training as specified in §§121.419 and 121.424 for a particular type airplane may be included in the training program for crewmembers who
§ 121.417 Crewmember emergency training.

(a) Each training program must provide the emergency training set forth in this section with respect to each airplane, type, model, and configuration, each required crewmember, and each kind of operation conducted, insofar as appropriate for each crewmember and the certificate holder.

(b) Emergency training must provide the following:

(1) Instruction in emergency assignments and procedures, including coordination among crewmembers.

(2) Individual instruction in the location, function, and operation of emergency equipment including—

(i) Equipment used in ditching and evacuation;

(ii) First aid equipment and its proper use;

(iii) Portable fire extinguishers, with emphasis on type of extinguisher to be used on different classes of fires; and

(iv) Emergency exits in the emergency mode with the evacuation slide/raft pack attached (if applicable), with training emphasis on the operation of the exits under adverse conditions.

(3) Instruction in the handling of emergency situations including—

(i) Rapid decompression;

(ii) Fire in flight or on the surface, and smoke control procedures with emphasis on electrical equipment and related circuit breakers found in cabin areas including all galleys, service centers, lifts, lavatories and movie screens;

(iii) Ditching and other evacuation, including the evacuation of persons and their attendants, if any, who may need the assistance of another person to move expeditiously to an exit in the event of an emergency.

(iv) Illness, injury, or other abnormal situations involving passengers or crewmembers to include familiarization with the emergency medical kit; and

(v) Hijacking and other unusual situations.

(4) Review and discussion of previous aircraft accidents and incidents pertaining to actual emergency situations.

(c) Each crewmember must accomplish the following emergency training during the specified training periods, using those items of installed emergency equipment for each type of airplane in which he or she is to serve (Alternate recurrent training required by §121.433(c) of this part may be accomplished by approved pictorial presentation or demonstration):

(1) One-time emergency drill requirements to be accomplished during initial training. Each crewmember must perform—

(i) At least one approved protective breathing equipment (PBE) drill in which the crewmember combats an actual or simulated fire using at least one type of installed hand fire extinguisher or approved fire extinguisher that is appropriate for the type of actual fire or simulated fire to be fought while using the type of installed PBE required by §121.337 or approved PBE simulation device as defined by paragraph (d) of this section for combating fires aboard airplanes;

(ii) At least one approved firefighting drill in which the crewmember combats an actual fire using at least one
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type of installed hand fire extinguisher or approved fire extinguisher that is appropriate for the type of fire to be fought. This firefighting drill is not required if the crewmember performs the PBE drill of paragraph (c)(1)(i) by combating an actual fire; and

(iii) An emergency evacuation drill with each person egressing the airplane or approved training device using at least one type of installed emergency evacuation slide. The crewmember may either observe the airplane exits being opened in the emergency mode and the associated exit slide/raft pack being deployed and inflated, or perform the tasks resulting in the accomplishment of these actions.

(2) Additional emergency drill requirements to be accomplished during initial training and once each 24 calendar months during recurrent training. Each crewmember must—

(i) Perform the following emergency drills and operate the following equipment:

(A) Each type of emergency exit in the normal and emergency modes, including the actions and forces required in the deployment of the emergency evacuation slides;

(B) Each type of installed hand fire extinguisher;

(C) Each type of emergency oxygen system to include protective breathing equipment;

(D) Donning, use, and inflation of individual flotation means, if applicable; and

(E) ditching, if applicable, including but not limited to, as appropriate:

(1) Cockpit preparation and procedures;

(2) Crew coordination;

(3) Passenger briefing and cabin preparation;

(4) Donning and inflation of life preservers;

(5) Use of life-lines; and

(6) Boarding of passengers and crew into a slide/raft pack.

(ii) observe the following drills:

(A) Removal from the airplane (or training device) of each type of slide/raft pack; and

(D) Emergency evacuation including the use of a slide.

(d) After September 1, 1993, no crewmember may serve in operations under this part unless that crewmember has performed the PBE drill and the firefighting drill described by paragraphs (c)(1)(i) and (c)(1)(ii) of this section, as part of a one-time training requirement of paragraphs (c)(1) or (c)(2) of this section as appropriate. Any crewmember who performs the PBE drill and the firefighting drill prescribed in paragraphs (c)(1)(i) and (c)(1)(ii) of this section after May 26, 1987, is deemed to be in compliance with this regulation upon presentation of information or documentation, in a form and manner acceptable to the Director, Flight Standards Service, showing that the appropriate drills have been accomplished.

(e) Crewmembers who serve in operations above 25,000 feet must receive instruction in the following:

(1) Respiration.

(2) Hypoxia.

(3) Duration of consciousness without supplemental oxygen at altitude.

(4) Gas expansion.

(5) Gas bubble formation.

(6) Physical phenomena and incidents of decompression.

(f) For the purposes of this section the following definitions apply:

(1) Actual fire means an ignited combustible material, in controlled conditions, of sufficient magnitude and duration to accomplish the training objectives outlined in paragraphs (c)(1)(i) and (c)(1)(ii) of this section.

(2) Approved fire extinguisher means a training device that has been approved by the Administrator for use in meeting the training requirements of §121.417(c).

(3) Approved PBE simulation device means a training device that has been approved by the Administrator for use in meeting the training requirements of §121.417(c).

(4) Combats, in this context, means to properly fight an actual or simulated fire using an appropriate type of fire extinguisher until that fire is extinguished.
§ 121.418 Differences training: Crewmembers and dispatchers.

(a) Differences training for crewmembers and dispatchers must consist of at least the following as applicable to their assigned duties and responsibilities:

(1) Instruction in each appropriate subject or part thereof required for initial ground training in the airplane unless the Administrator finds that particular subjects are not necessary.

(2) Flight training in each appropriate maneuver or procedure required for initial flight training in the airplane unless the Administrator finds that particular maneuvers or procedures are not necessary.

(3) The number of programmed hours of ground and flight training determined by the Administrator to be necessary for the airplane, the operation, and the crewmember or aircraft dispatcher involved.

Differences training for all variations of a particular type airplane may be included in initial, transition, upgrade, and recurrent training for the airplane.

§ 121.419 Pilots and flight engineers: Initial, transition, and upgrade ground training.

(a) Initial, transition, and upgrade ground training for pilots and flight engineers must include instruction in at least the following as applicable to their assigned duties:

(1) General subjects—

(i) The certificate holder’s dispatch or flight release procedures;

(ii) Principles and methods for determining weight and balance, and runway limitations for takeoff and landing;

(iii) EFD meteorology to insure a practical knowledge of weather phenomena, including the principles of frontal systems, icing, fog, thunderstorms, and high altitude weather situations;

(iv) Air traffic control systems, procedures, and phraseology;

(v) Navigation and the use of navigation aids, including instrument approach procedures;

(vi) Normal and emergency communication procedures;

(vii) Visual cues prior to and during descent below DH or MDA;

(viii) Approved crew resource management initial training; and

(ix) Other instructions as necessary to ensure his competence.

(2) For each airplane type—

(A) A general description;

(B) Performance characteristics;

(C) Engines and propellers;

(D) Major components;

(E) Major airplane systems (i.e., flight controls, electrical, hydraulic); other systems as appropriate; principles of normal, abnormal, and emergency operations; appropriate procedures and limitations;

(F) Procedures for—

(A) Recognizing and avoiding severe weather situations;

(B) Escaping from severe weather situations, in case of inadvertent encounters, including low-altitude windshear, and

(C) Operating in or near thunderstorms (including best penetrating altitudes), turbulent air (including clear air turbulence), icing, hail, and other potentially hazardous meteorological conditions;

(D) Operating limitations;

(E) Fuel consumption and cruise control;

(F) Flight planning;

(G) Each normal and emergency procedure; and

(b) Initial ground training for pilots and flight engineers must consist of at least the following programmed hours of instruction in the required subjects specified in paragraph (a) of this section and in §121.415(a) unless reduced under §121.405:

1. Group I airplanes—
   (i) Reciprocating powered, 64 hours; and
   (ii) Turbopropeller powered, 80 hours.

2. Group II airplanes, 120 hours.

§ 121.420 Flight navigators: Initial and transition ground training.

(a) Initial and transition ground training for flight navigators must include instruction in the subjects specified in §121.419(a) as appropriate to his assigned duties and responsibilities and in the following with respect to the particular type airplane:

1. Limitations on climb, cruise, and descent speeds.

2. Each item of navigational equipment installed including appropriate radio, radar, and other electronic equipment.


4. Airspeed, temperature, and pressure indicating instruments or systems.

5. Compass limitations and methods of compensation.

6. Cruise control charts and data, including fuel consumption rates.

7. Any other instruction as necessary to ensure his competence.

(b) Initial and transition ground training for flight navigators must consist of at least the following programmed hours of instruction in the subjects specified in paragraph (a) of this section and in §121.415(a) unless reduced under §121.405:

1. Group I airplanes—
   (i) Reciprocating powered, 16 hours; and
   (ii) Turbopropeller powered, 32 hours.

2. Group II airplanes, 32 hours.

§ 121.421 Flight attendants: Initial and transition ground training.

(a) Initial and transition ground training for flight attendants must include instruction in at least the following:

1. General subjects—
   (i) The authority of the pilot in command;
   (ii) Passenger handling, including the procedures to be followed in the case of deranged persons or other persons whose conduct might jeopardize safety; and
   (iii) Approved crew resource management initial training.

2. For each airplane type—
   (i) A general description of the airplane emphasizing physical characteristics that may have a bearing on ditching, evacuation, and inflight emergency procedures and on other related duties;
   (ii) The use of both the public address system and the means of communicating with other flight crewmembers, including emergency means in the case of attempted hijacking or other unusual situations; and
   (iii) Proper use of electrical galley equipment and the controls for cabin heat and ventilation.

(b) Initial and transition ground training for flight attendants must include a competence check to determine ability to perform assigned duties and responsibilities.

(c) Initial ground training for flight attendants must consist of at least the following programmed hours of instruction in the subjects specified in paragraph (a) of this section and in §121.415(a) unless reduced under §121.405:

1. Group I airplanes—
   (i) Reciprocating powered, 8 hours; and
   (ii) Turbopropeller powered, 8 hours.

2. Group II airplanes, 16 hours.

§ 121.422 Aircraft dispatchers: Initial and transition ground training.

(a) Initial and transition ground training for aircraft dispatchers must include instruction in at least the following:

1. Group I airplanes—
   (i) Reciprocating powered, 16 hours; and
   (ii) Turbopropeller powered, 32 hours.

2. Group II airplanes, 32 hours.
§ 121.424 Pilots: Initial, transition, and upgrade flight training.

(a) Initial, transition, and upgrade training for pilots must include flight training and practice in the maneuvers and procedures set forth in the certificate holder's approved low-altitude windshear flight training program and in appendix E to this part, as applicable.

(b) The maneuvers and procedures required by paragraph (a) of this section must be performed inflight except—

(1) That windshear maneuvers and procedures must be performed in a simulator in which the maneuvers and procedures are specifically authorized to be accomplished; and

(2) To the extent that certain other maneuvers and procedures may be performed in an airplane simulator, an appropriate training device, or a static airplane as permitted in appendix E to this part.

(c) Except as permitted in paragraph (d) of this section, the initial flight training required by paragraph (a) of this section must include at least the following programmed hours of flight training and practice unless reduced under §121.405:

(1) Group I airplanes—

(i) Reciprocating powered, 30 hours; and

(ii) Turbopropeller powered, 40 hours.

(2) Group II airplanes, 40 hours.

(d) Initial ground training for aircraft dispatchers must consist of at least the following programmed hours of instruction in the subjects specified in paragraph (a) of this section and in §121.415(a) unless reduced under §121.405:

(1) Group I airplanes—

(i) Reciprocating powered, 30 hours; and

(ii) Turbopropeller powered, 40 hours.

(2) Group II airplanes, 40 hours.

(d) If the certificate holder’s approved training program includes a course of training utilizing an airplane simulator under §121.409 (c) and (d) of this part, each pilot must successfully complete—

1. With respect to §121.409(c) of this part—
   i. Training and practice in the simulator in at least all of the maneuvers and procedures set forth in appendix E to this part for initial flight training that are capable of being performed in an airplane simulator without a visual system; and
   ii. A flight check in the simulator or the airplane to the level of proficiency of a pilot in command or second in command, as applicable, in at least the maneuvers and procedures set forth in appendix F to this part that are capable of being performed in an airplane simulator without a visual system.

2. With respect to §121.409(d) of this part, training and practice in at least the maneuvers and procedures set forth in the certificate holder’s approved low-altitude windshear flight training program that are capable of being performed in an airplane simulator in which the maneuvers and procedures are specifically authorized.

§121.425 Flight engineers: Initial and transition flight training.

(a) Initial and transition flight training for flight engineers must include at least the following:

1. Training and practice in procedures related to the carrying out of flight engineer duties and functions. This training and practice may be accomplished either inflight, in an airplane simulator, or in a training device.

2. A flight check that includes—
   i. Preflight inspection;
   ii. Inflight performance of assigned duties accomplished from the flight engineer station during taxi, runup, takeoff, climb, cruise, descent, approach, and landing;
   iii. Accomplishment of other functions, such as fuel management and preparation of fuel consumption records, and normal and emergency or alternate operation of all airplane flight systems, performed either inflight, in an airplane simulator, or in a training device.

Flight engineers possessing a commercial pilot certificate with an instrument, category and class rating, or pilots already qualified as second in command and reverting to flight engineer, may complete the entire flight check in an approved airplane simulator.

(b) Except as permitted in paragraph (c) of this section, the initial flight training required by paragraph (a) of this section must include at least the same number of programmed hours of flight training and practice that are specified for a second in command pilot under §121.424(c) unless reduced under §121.405.

(c) If the certificate holder’s approved training program includes a course of training utilizing an airplane simulator or other training device under §121.409(c), each flight engineer must successfully complete in the simulator or other training device—

1. Training and practice in at least all of the assigned duties, procedures, and functions required by paragraph (a) of this section; and

2. A flight check to a flight engineer level of proficiency in the assigned duties, procedures, and functions.

§121.426 Flight navigators: Initial and transition flight training.

(a) Initial and transition flight training for flight navigators must include flight training and a flight check that are adequate to insure his proficiency in the performance of his assigned duties.

(b) The flight training and checks specified in paragraph (a) of this section must be performed—

1. Inflight or in an appropriate training device; or

2. In operations under this part if performed under supervision of a qualified flight navigator.

§121.427 Recurrent training.

(a) Recurrent training must ensure that each crew member or dispatcher is
§ 121.429 Adequately trained and currently proficient.

(a) Recurrent ground training for crewmembers and dispatchers must include at least the following:

(1) A quiz or other review to determine the state of the crewmember’s or dispatcher’s knowledge with respect to the airplane and position involved.

(2) Instruction as necessary in the subjects required for initial ground training by § 121.415(a), as appropriate, including emergency training (not required for aircraft dispatchers).

(3) For flight attendants and dispatchers, a competence check as required by §§ 121.421(b) and 121.422(b), respectively.

(4) Approved recurrent CRM training. For flight crewmembers, this training or portions thereof may be accomplished during an approved simulator line operational flight training (LOFT) session. The recurrent CRM training requirement does not apply until a person has completed the applicable initial CRM training required by §§ 121.419, 121.421, or 121.422.

(c) Recurrent ground training for crewmembers and dispatchers must consist of at least the following programmed hours unless reduced under § 121.405:

(1) For pilots and flight engineers—
   (i) Group I, reciprocating powered airplanes, 16 hours; and
   (ii) Group I turbopropeller powered airplanes, 20 hours; and
   (iii) Group II airplanes, 25 hours.

(2) For flight navigators—
   (i) Group I reciprocating powered airplanes, 12 hours; and
   (ii) Group I turbopropeller powered airplanes, 16 hours; and
   (iii) Group II airplanes, 16 hours.

(3) For flight attendants—
   (i) Group I reciprocating powered airplanes, 4 hours; and
   (ii) Group I turbopropeller powered airplanes, 5 hours; and
   (iii) Group II airplanes, 12 hours.

(d) Recurrent flight training for flight crewmembers must include at least the following:

(1) For pilots, flight training in an approved simulator in maneuvers and procedures set forth in the certificate holder’s approved low-altitude windshear flight training program and flight training in maneuvers and procedures set forth in appendix F to this part, or in a flight training program approved by the Administrator, except as follows—
   (i) The number of programmed inflight hours is not specified; and
   (ii) Satisfactory completion of a proficiency check may be substituted for recurrent flight training as permitted in § 121.433(c).

(2) For flight engineers, flight training as provided by § 121.425(a) except as follows—
   (i) The specified number of inflight hours is not required; and
   (ii) The flight check, other than the preflight inspection, may be conducted in an airplane simulator or other training device. The preflight inspection may be conducted in an airplane, or by using an approved pictorial means that realistically portrays the location and detail or preflight inspection items and provides for the portrayal of abnormal conditions. Satisfactory completion of an approved line-oriented simulator training program may be substituted for the flight check.

(3) For flight navigators, enough inflight training and an inflight check to insure competency with respect to operating procedures and navigation equipment to be used and familiarity with essential navigation information pertaining to the certificate holder’s routes that require a flight navigator.

(d) Recurrent flight training for air traffic controllers must include at least the following:

(1) Flight training in an approved simulator in maneuvers and procedures set forth in the certificate holder’s approved low-altitude windshear training program and flight training in maneuvers and procedures set forth in appendix F to this part, or in a flight training program approved by the Administrator, except as follows—
   (i) The number of programmed inflight hours is not specified; and
   (ii) Satisfactory completion of a proficiency check may be substituted for recurrent flight training as permitted in § 121.433(c).

(b) Recurrent ground training for crewmembers and dispatchers must include at least the following:

(1) A quiz or other review to determine the state of the crewmember’s or dispatcher’s knowledge with respect to the airplane and position involved.

(2) Instruction as necessary in the subjects required for initial ground training by § 121.415(a), as appropriate, including emergency training (not required for aircraft dispatchers).

(3) For flight attendants and dispatchers, a competence check as required by §§ 121.421(b) and 121.422(b), respectively.

(4) Approved recurrent CRM training. For flight crewmembers, this training or portions thereof may be accomplished during an approved simulator line operational flight training (LOFT) session. The recurrent CRM training requirement does not apply until a person has completed the applicable initial CRM training required by §§ 121.419, 121.421, or 121.422.

(c) Recurrent ground training for crewmembers and dispatchers must consist of at least the following programmed hours unless reduced under § 121.405:

(1) For pilots and flight engineers—
   (i) Group I, reciprocating powered airplanes, 16 hours; and
   (ii) Group I turbopropeller powered airplanes, 20 hours; and
   (iii) Group II airplanes, 25 hours.

(2) For flight navigators—
   (i) Group I reciprocating powered airplanes, 12 hours; and
   (ii) Group I turbopropeller powered airplanes, 16 hours; and
   (iii) Group II airplanes, 16 hours.

(3) For flight attendants—
   (i) Group I reciprocating powered airplanes, 4 hours; and
   (ii) Group I turbopropeller powered airplanes, 5 hours; and
   (iii) Group II airplanes, 12 hours.

(d) Recurrent flight training for flight crewmembers must include at least the following:

(1) For pilots, flight training in an approved simulator in maneuvers and procedures set forth in the certificate holder’s approved low-altitude windshear flight training program and flight training in maneuvers and procedures set forth in appendix F to this part, or in a flight training program approved by the Administrator, except as follows—
   (i) The number of programmed inflight hours is not specified; and
   (ii) Satisfactory completion of a proficiency check may be substituted for recurrent flight training as permitted in § 121.433(c).

(2) For flight engineers, flight training as provided by § 121.425(a) except as follows—
   (i) The specified number of inflight hours is not required; and
   (ii) The flight check, other than the preflight inspection, may be conducted in an airplane simulator or other training device. The preflight inspection may be conducted in an airplane, or by using an approved pictorial means that realistically portrays the location and detail or preflight inspection items and provides for the portrayal of abnormal conditions. Satisfactory completion of an approved line-oriented simulator training program may be substituted for the flight check.

(3) For flight navigators, enough inflight training and an inflight check to insure competency with respect to operating procedures and navigation equipment to be used and familiarity with essential navigation information pertaining to the certificate holder’s routes that require a flight navigator.

§ 121.429 Prohibited drugs.

(a) Each certificate holder shall provide each employee performing a function listed in appendix I to this part and his or her supervisor with the training specified in that appendix.
§ 121.433 Training required.

(a) Initial training. No certificate holder may use any person nor may any person serve as a required crewmember on an airplane unless that person has satisfactorily completed, in a training program approved under subpart N of this part, initial ground and flight training for that type airplane and for the particular crewmember position, except as follows:

(1) In the case of flight training conducted under the supervision of a flight instructor, a pilot may serve as a required crewmember on an airplane, except he may not serve as a required crewmember on an airplane unless he has satisfactorily completed the training required by this section, unless the certificate holder permits training center personnel certified under part 141 of this chapter to provide training, testing, and checking under contract or other arrangement to those persons subject to the requirements of this section.

(2) For the purpose of this section, the airplane groups and terms and definitions prescribed in §121.400 and the following definitions apply:

Consolidation is the process by which a person through practice and practical experience increases proficiency in newly acquired knowledge and skills.

Line operating flight time is flight time performed in operations under this part.

Operating cycle is a complete flight segment consisting of a takeoff, climb, enroute portion, descent, and a landing.
§ 121.433a Training requirements: Handling and carriage of dangerous articles and magnetized materials.

(a) No certificate holder may use any person to perform and no person may perform, any assigned duties and responsibilities for the handling or carriage of dangerous articles and magnetized materials governed by Title 49 CFR, unless within the preceding 12 calendar months—

(i) For flight crewmembers, he has satisfactorily completed recurrent ground and flight training for that airplane and crewmember position and a flight check as applicable;

(ii) For flight attendants and dispatchers, he has satisfactorily completed recurrent ground training and a competence check; and

(iii) In addition, for pilots in command, he has satisfactorily completed within the preceding 6 calendar months, recurrent flight training in addition to the recurrent flight training required in paragraph (c)(1)(i) of this section, in an airplane in which he serves as pilot in command in operations under this part.

(b) For pilots, a proficiency check as provided in §121.441 of this part may be substituted for the recurrent flight training required by this paragraph and the approved simulator course of training under §121.409(b) of this part may be substituted for alternate periods of recurrent flight training required in that airplane, except as provided in paragraphs (d) and (e) of this section.

(d) For each airplane in which a pilot serves as pilot in command, he must satisfactorily complete either recurrent flight training or a proficiency check within the preceding 12 calendar months.

(e) Notwithstanding paragraphs (c)(2) and (d) of this section, a proficiency check as provided in §121.441 of this part may not be substituted for training in those maneuvers and procedures set forth in a certificate holder’s approved low-altitude windshear flight training program when that program is included in a recurrent flight training course as required by §121.409(d) of this part.

§ 121.434 Operating experience, operating cycles, and consolidation of knowledge and skills.

(a) No certificate holder may use a person nor may any person serve as a required crewmember of an airplane unless the person has satisfactorily completed, on that type airplane and in that crewmember position, the operating experience, operating cycles, and the line operating flight time for consolidation of knowledge and skills, required by this section, except as follows:

1. Crewmembers other than pilots in command may serve as provided herein for the purpose of meeting the requirements of this section.

2. Pilots who are meeting the pilot in command requirements may serve as second in command.

3. Separate operating experience, operating cycles, and line operating flight time for consolidation of knowledge and skills are not required for variations within the same type airplane.

(b) In acquiring the operating experience, operating cycles, and line operating flight time for consolidation of knowledge and skills, crewmembers must comply with the following:

1. In the case of a flight crewmember, he must hold the appropriate certificates and ratings for the crewmember position and the airplane, except that a pilot who is meeting the pilot in command requirements must hold the appropriate certificates and ratings for a pilot in command in the airplane.

2. The operating experience, operating cycles, and line operating flight time for consolidation of knowledge and skills must be acquired after satisfactory completion of the appropriate ground and flight training for the particular airplane type and crewmember position.

3. The experience must be acquired in flight during operations under this part. However, in the case of an aircraft not previously used by the certificate holder in operations under this part, operating experience acquired in the aircraft during proving flights or ferry flights may be used to meet this requirement.

(c) Pilot crewmembers must acquire operating experience and operating cycles as follows:

1. A pilot in command must—
   (i) Perform the duties of a pilot in command under the supervision of a check pilot; and
   (ii) In addition, if a qualifying pilot in command is acquiring the operating experience in paragraphs (c)(1) (i) and (ii) of this section, a check pilot who is also serving as the pilot in command may occupy the observer’s seat, if the transitioning pilot has made at least two takeoffs and landings in the type airplane used, and has satisfactorily demonstrated to the check pilot that he is qualified to perform the duties of a pilot in command of that type of airplane.

2. A second in command pilot must perform the duties of a second in command under the supervision of an appropriately qualified check pilot.

3. The hours of operating experience and operating cycles for all pilots are as follows:
   (i) For initial training, 15 hours in Group I reciprocating powered airplanes, 20 hours in Group I turbo-propeller powered airplanes, and 25 hours in Group II airplanes. Operating
(ii) For transition training, except as provided in paragraph (c)(3)(iii) of this section, 10 hours in Group I reciprocating powered airplanes, 12 hours in Group I turbopropeller powered airplanes, 25 hours for pilots in command in Group II airplanes, and 15 hours for second in command pilots in Group II airplanes. Operating experience in both airplane groups must include at least 4 operating cycles (at least 2 as the pilot flying the airplane).

(iii) In the case of transition training where the certificate holder's approved training program includes a course of training in an airplane simulator under §121.409(c), each pilot in command must comply with the requirements prescribed in paragraph (c)(3)(i) of this section for initial training.

(d) A flight engineer must perform the duties of a flight engineer under the supervision of a check airman or a qualified flight engineer for at least the following number of hours:
   (1) Group I reciprocating powered airplanes, 8 hours.
   (2) Group I turbopropeller powered airplanes, 10 hours.
   (3) Group II airplanes, 12 hours.

(e) A flight attendant must, for at least 5 hours, perform the assigned duties of a flight attendant under the supervision of a check airman or a qualified flight engineer for at least the following number of hours:
   (1) Group I reciprocating powered airplanes, 8 hours.
   (2) Group I turbopropeller powered airplanes, 10 hours.
   (3) Group II airplanes, 12 hours.

(f) Flight crewmembers may substitute one additional takeoff and landing for each hour of flight to meet the operating experience requirements of this section, up to a maximum reduction of 50% of flight hours, except those in Group II initial training, and second in command pilots in Group II transition training. Notwithstanding the reductions in programmed hours permitted under §§121.405 and 121.409, the hours of operating experience for flight crewmembers are not subject to reduction other than as provided in this paragraph and paragraph (e) of this section.

(g) Except as provided in paragraph (h) of this section, pilot in command and second in command crewmembers must each acquire at least 100 hours of line operating flight time for consolidation of knowledge and skills (including operating experience required under paragraph (c) of this section) within 120 days after the satisfactory completion of:
   (1) Any part of the flight maneuvers and procedures portion of either an airline transport pilot certificate with type rating practical test or an additional type rating practical test, or
   (2) A §121.441 proficiency check.

(h) The following exceptions apply to the consolidation requirement of paragraph (g) of this section:
   (1) Pilots who have qualified and served as pilot in command or second in command on a particular type airplane in operations under this part before August 25, 1995 are not required to complete line operating flight time for consolidation of knowledge and skills.
   (2) Pilots who have completed the line operating flight time requirement for consolidation of knowledge and skills while serving as second in command on a particular type airplane in operations under this part after August 25, 1995 are not required to repeat the line operating flight time before serving as pilot in command on the same type airplane.

(3) If, before completing the required 100 hours of line operating flight time, a pilot serves as a pilot in another airplane type operated by the certificate holder, the pilot may not serve as a
Federal Aviation Administration, DOT § 121.438

pilot in the airplane for which the pilot has newly qualified unless the pilot satisfactorily completes refresher training as provided in the certificate holder’s approved training program and that training is conducted by an appropriately qualified instructor or check pilot.

(4) If the required 100 hours of line operating flight time are not completed within 120 days, the certificate holder may extend the 120-day period to no more than 150 days if—

(i) The pilot continues to meet all other applicable requirements of subpart O of this part; and

(ii) On or before the 120th day the pilot satisfactorily completes refresher training conducted by an appropriately qualified instructor or check pilot as provided in the certificate holder’s approved training program, or a check pilot determines that the pilot has retained an adequate level of proficiency after observing that pilot in a supervised line operating flight.

(5) The Administrator, upon application by the certificate holder, may authorize deviations from the requirements of paragraph (g) of this section, by an appropriate amendment to the operations specifications, to the extent warranted by any of the following circumstances:

(i) A newly certificated certificate holder does not employ any pilots who meet the minimum requirements of paragraph (g) of this section.

(ii) An existing certificate holder adds to its fleet an airplane type not before proven for use in its operations.

(iii) A certificate holder establishes a new domicile to which it assigns pilots who will be required to become qualified on the airplanes operated from that domicile.

(i) Notwithstanding the reductions in programmed hours permitted under §§ 121.405 and 121.409 of subpart N of this part, the hours of operating experience for flight crewmembers are not subject to reduction other than as provided in paragraphs (e) and (f) of this section.

§ 121.439 Pilot qualification: Recent experience.

(a) No certificate holder may use any person nor may any person serve as a required pilot flight crewmember, unless within the preceding 90 days, that person has made at least three takeoffs and landings in the type airplane in which that person is to serve. The takeoffs and landings required by this paragraph may be performed in a visual simulator approved under §121.407 to include takeoff and landing maneuvers. In addition, any person who fails to make the three required takeoffs and landings within any consecutive 90-day period must reestablish recency of experience as provided in paragraph (b) of this section.

(b) In addition to meeting all applicable training and checking requirements of this part, a required pilot flight crewmember who has not met the requirements of paragraph (a) of this section must reestablish recency of experience as follows:

1. Under the supervision of a check airman, make at least three takeoffs and landings in the type airplane in which that person is to serve.
2. The takeoffs and landings required in paragraph (b)(1) of this section must include—
   i. At least one takeoff with a simulated failure of the most critical powerplant;
   ii. At least one landing from an ILS approach to the lowest ILS minimum authorized for the certificate holder;
   iii. At least one landing to a full stop.

(c) A required pilot flight crewmember who performs the maneuvers prescribed in paragraph (b) of this section in a visual simulator must—

1. Have previously logged 100 hours of flight time in the same type airplane in which he is to serve;
2. Be observed on the first two landings made in operations under this part by an approved check airman who acts as pilot in command and occupies a pilot seat. The landings must be made in weather minimums that are not less...
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than those contained in the certificate holder’s operations specifications for Category I Operations, and must be made within 45 days following completion of simulator training.

(d) When using a simulator to accomplish any of the requirements of paragraph (a) or (b) of this section, each required flight crewmember position must be occupied by an appropriately qualified person and the simulator must be operated as if in a normal inflight environment without use of the repositioning features of the simulator.

(e) A check airman who observes the takeoffs and landings prescribed in paragraphs (b)(1) and (c) of this section shall certify that the person being observed is proficient and qualified to perform flight duty in operations under this part and may require any additional maneuvers that are determined necessary to make this certifying statement.

§ 121.440 Line checks.

(a) No certificate holder may use any person nor may any person serve as pilot in command of an airplane unless, within the preceding 12 calendar months, that person has passed a line check in which he satisfactorily performs the duties and responsibilities of a pilot in command in one of the types of airplanes he is to fly.

(b) A pilot in command line check for domestic and flag operations must—

(1) Be given by a pilot check airman who is currently qualified on both the route and the airplane; and

(2) Consist of at least one flight over a typical part of the certificate holder’s route, or over a foreign or Federal airway, or over a direct route.

(c) A pilot in command line check for supplemental operations must—

(1) Be given by a pilot check airman who is currently qualified on the airplane; and

(2) Consist of at least one flight over a part of a Federal airway, foreign airway, or advisory route over which the pilot may be assigned.


§ 121.441 Proficiency checks.

(a) No certificate holder may use any person nor may any person serve as a required pilot flight crewmember unless that person has satisfactorily completed either a proficiency check, or an approved simulator course of training under § 121.409, as follows:

(1) For a pilot in command, a proficiency check within the preceding 12 calendar months and, in addition, within the preceding 6 calendar months, either a proficiency check or the simulator training.

(2) For all other pilots—

(i) Within the preceding 24 calendar months either a proficiency check or the line-oriented simulator training course under § 121.409; and

(ii) Within the preceding 12 calendar months, either a proficiency check or any simulator training course under § 121.409.

(b) Except as provided in paragraphs (c) and (d) of this section, a proficiency check must meet the following requirements:

(1) It must include at least the procedures and maneuvers set forth in appendix F to this part unless otherwise specifically provided in that appendix.

(2) It must be given by the Administrator or a pilot check airman.

(c) An approved airplane simulator or other appropriate training device may be used in the conduct of a proficiency check as provided in appendix F to this part.

(d) A person giving a proficiency check may, in his discretion, waive any of the maneuvers or procedures for which a specific waiver authority is set forth in appendix F to this part if—

(1) The Administrator has not specifically required the particular maneuver or procedure to be performed;

(2) The pilot being checked is, at the time of the check, employed by a certificate holder as a pilot; and

(3) The pilot being checked is currently qualified for operations under
§ 121.443 Pilot in command qualification: Route and airports.

(a) Each certificate holder shall provide a system acceptable to the Administrator for disseminating the information required by paragraph (b) of this section to the pilot in command and appropriate flight operation personnel.

The system must also provide an acceptable means for showing compliance with §121.445.

(b) No certificate holder may use any person, nor may any person serve, as pilot in command unless the certificate holder has provided that person current information concerning the following subjects pertinent to the areas over which that person is to serve, and to each airport and terminal area into which that person is to operate, and ensures that that person has adequate knowledge of, and the ability to use, the information:

1. Weather characteristics appropriate to the season.
3. Communication procedures, including airport visual aids.
5. Minimum safe flight levels.
6. En route and terminal area arrival and departure procedures, holding procedures and authorized instrument approach procedures for the airports involved.
7. Congested areas and physical layout of each airport in the terminal area in which the pilot will operate.
8. Notices to Airmen.

[Doc. No. 17897, 45 FR 41594, June 19, 1980; Amdt. 121-159, 45 FR 43154, June 26, 1980]

§ 121.445 Pilot in command airport qualification: Special areas and airports.

(a) The Administrator may determine that certain airports (due to items such as surrounding terrain, obstructions, or complex approach or departure procedures) are special airports requiring special airport qualifications and that certain areas or routes, or both, require a special type of navigation qualification.

(b) Except as provided in paragraph (c) of this section, no certificate holder may use any person, nor may any person serve, as pilot in command to or from an airport determined to require special airport qualifications unless, within the preceding 12 calendar months:

1. The pilot in command or second in command has made an entry to that airport (including a takeoff and landing) while serving as a pilot flight crewmember; or
§ 121.457 Testing for prohibited drugs.

(a) Each certificate holder or operator shall test each of its employees who performs a function listed in appendix I to this part in accordance with that appendix.

(b) No certificate holder or operator may use any contractor to perform a function listed in appendix I to this part unless that contractor tests each employee performing such a function for the certificate holder or operator in accordance with that appendix.

[Doc. No. 25148, 53 FR 47057, Nov. 21, 1988, as amended by Amdt. 121-251, 60 FR 65934, Dec. 20, 1995]
§ 121.458 Misuse of alcohol.

(a) General. This section applies to employees who perform a function listed in appendix J to this part for a certificate holder (covered employees). For the purpose of this section, a person who meets the definition of covered employee in appendix J is considered to be performing the function for the certificate holder.

(b) Alcohol concentration. No covered employee shall report for duty or remain on duty requiring the performance of safety-sensitive functions while having an alcohol concentration of 0.04 or greater. No certificate holder having actual knowledge that an employee has an alcohol concentration of 0.04 or greater shall permit the employee to perform or continue to perform safety-sensitive functions.

(c) On-duty use. No covered employee shall use alcohol while performing safety-sensitive functions. No certificate holder having actual knowledge that a covered employee is using alcohol while performing safety-sensitive functions shall permit the employee to perform or continue to perform safety-sensitive functions.

(d) Pre-duty use. (1) No covered employee shall perform flight crew-member or flight attendant duties within 8 hours after using alcohol. No certificate holder having actual knowledge that such an employee has used alcohol within 8 hours shall permit the employee to perform or continue to perform the specified duties.

(2) No covered employee shall perform safety-sensitive duties other than those specified in paragraph (d)(1) of this section within 4 hours after using alcohol. No certificate holder having actual knowledge that such an employee has used alcohol within 4 hours shall permit the employee to perform or continue to perform safety-sensitive functions.

(e) Use following an accident. No covered employee who has actual knowledge of an accident involving an aircraft for which he or she performed a safety-sensitive function at or near the time of the accident shall use alcohol for 8 hours following the accident, unless he or she has been given a post-accident test under appendix J of this part, or the employer has determined that the employee’s performance could not have contributed to the accident.

(f) Refusal to submit to a required alcohol test. No covered employee shall refuse to submit to a post-accident, random, reasonable suspicion, or follow-up alcohol test required under appendix J to this part. No certificate holder shall permit an employee who refuses to submit to such a test to perform or continue to perform safety-sensitive functions.

[Amtd. 121-237, 59 FR 7389, Feb. 15, 1994]

§ 121.459 Testing for alcohol.

(a) Each certificate holder must establish an alcohol misuse prevention program in accordance with the provisions of appendix J to this part.

(b) No certificate holder shall use any person who meets the definition of covered employee in appendix J to this part to perform a safety-sensitive function listed in that appendix unless such person is subject to testing for alcohol misuse in accordance with the provisions of appendix J.

[Amtd. 121-237, 59 FR 7390, Feb. 15, 1994]
§ 121.465 Aircraft dispatcher duty time limitations: Domestic and flag operations.

(a) Each certificate holder conducting domestic or flag operations shall establish the daily duty period for a dispatcher so that it begins at a time that allows him or her to become thoroughly familiar with existing and anticipated weather conditions along the route before he or she dispatches any airplane. He or she shall remain on duty until each airplane dispatched by him or her has completed its flight, or has gone beyond his or her jurisdiction, or until he or she is relieved by another qualified dispatcher.

(b) Except in cases where circumstances or emergency conditions beyond the control of the certificate holder require otherwise—

(1) No certificate holder conducting domestic or flag operations may schedule a dispatcher for more than 10 consecutive hours of duty;

(2) If a dispatcher is scheduled for more than 10 hours of duty in 24 consecutive hours, the certificate holder shall provide him or her a rest period of at least eight hours at or before the end of 10 hours of duty.
§ 121.467 Flight attendant duty period limitations and rest requirements: Domestic, flag, and supplemental operations.

(a) For purposes of this section—

Calendar day means the period of elapsed time, using Coordinated Universal Time or local time, that begins at midnight and ends 24 hours later at the next midnight.

Duty period means the period of elapsed time between reporting for an assignment involving flight time and release from that assignment by the certificate holder conducting domestic, flag, or supplemental operations. The time is calculated using either Coordinated Universal Time or local time to reflect the total elapsed time.

Flight attendant means an individual, other than a flight crewmember, who is assigned by a certificate holder conducting domestic, flag, or supplemental operations, in accordance with the required minimum crew complement under the certificate holder’s operations specifications or in addition to that minimum complement, to duty in an aircraft during flight time and whose duties include but are not necessarily limited to cabin-safety-related responsibilities.

Rest period means the period free of all restraint or duty for a certificate holder conducting domestic, flag, or supplemental operations and free of all responsibility for work or duty should the occasion arise.

(b) Except as provided in paragraph (c) of this section, a certificate holder conducting domestic, flag, or supplemental operations may assign a duty period to a flight attendant only when the applicable duty period limitations and rest requirements of this paragraph are met.

(1) Except as provided in paragraphs (b)(4), (b)(5), and (b)(6) of this section, no certificate holder conducting domestic, flag, or supplemental operations may assign a flight attendant to a scheduled duty period of more than 14 hours.

(2) Except as provided in paragraph (b)(3) of this section, a flight attendant scheduled to a duty period of 14 hours or less as provided under paragraph (b)(1) of this section must be given a scheduled rest period of at least 9 consecutive hours. This rest period must occur between the completion of the scheduled duty period and the commencement of the subsequent duty period.

(3) The rest period required under paragraph (b)(2) of this section may be scheduled or reduced to 8 consecutive hours if the flight attendant is provided a subsequent rest period of at least 10 consecutive hours; this subsequent rest period must be scheduled to begin no later than 24 hours after the beginning of the reduced rest period and must occur between the completion of the scheduled duty period and the commencement of the subsequent duty period.

(4) A certificate holder conducting domestic, flag, or supplemental operations may assign a flight attendant to a scheduled duty period of more than 14 hours, but no more than 16 hours, if the certificate holder has assigned to the flight or flights in that duty period at least one flight attendant in addition to the minimum flight attendant complement required for the flight or flights in that duty period at least one flight attendant in addition to the minimum flight attendant complement required for the flight or flights in that duty period under the certificate holder’s operations specifications.

(5) A certificate holder conducting domestic, flag, or supplemental operations may assign a flight attendant to a scheduled duty period of more than 16 hours, but no more than 18 hours, if the certificate holder has assigned to the flight or flights in that duty period at
least two flight attendants in addition to the minimum flight attendant complement required for the flight or flights in that duty period under the certificate holder's operations specifications.

(6) A certificate holder conducting domestic, flag, or supplemental operations may assign a flight attendant to a scheduled duty period of more than 18 hours, but no more than 20 hours, if the scheduled duty period includes one or more flights that land or take off outside the 48 contiguous states and the District of Columbia, and if the certificate holder has assigned to the flight or flights in that duty period at least three flight attendants in addition to the minimum flight attendant complement required for the flight or flights in that duty period under the domestic certificate holder's operations specifications.

(7) Except as provided in paragraph (b)(8) of this section, a flight attendant scheduled to a duty period of more than 14 hours but no more than 20 hours, as provided in paragraphs (b)(4), (b)(5), and (b)(6) of this section, must be given a scheduled rest period of at least 12 consecutive hours. This rest period must occur between the completion of the scheduled duty period and the commencement of the subsequent duty period.

(8) The rest period required under paragraph (b)(7) of this section may be scheduled or reduced to 10 consecutive hours if the flight attendant is provided a subsequent rest period of at least 14 consecutive hours; this subsequent rest period must be scheduled to begin no later than 24 hours after the beginning of the reduced rest period and must occur between the completion of the scheduled duty period and the commencement of the subsequent duty period.

(9) Notwithstanding paragraphs (b)(4), (b)(5), and (b)(6) of this section, if a certificate holder conducting domestic, flag, or supplemental operations elects to reduce the rest period to 10 hours as authorized by paragraph (b)(8) of this section, the certificate holder may not schedule a flight attendant for a duty period of more than 14 hours during the 24-hour period commencing after the beginning of the reduced rest period.

(10) No certificate holder conducting domestic, flag, or supplemental operations may assign a flight attendant any duty period with the certificate holder unless the flight attendant has had at least the minimum rest required under this section.

(11) No certificate holder conducting domestic, flag, or supplemental operations may assign a flight attendant to perform any duty with the certificate holder during any required rest period.

(12) Time spent in transportation, not local in character, that a certificate holder conducting domestic, flag, or supplemental operations requires of a flight attendant and provides to transport the flight attendant to an airport at which that flight attendant is to serve on a flight as a crewmember, or from an airport at which the flight attendant was relieved from duty to return to the flight attendant's home station, is not considered part of a rest period.

(13) Each certificate holder conducting domestic, flag, or supplemental operations must relieve each flight attendant engaged in air transportation and each commercial operator must relieve each flight attendant engaged in air commerce from all further duty for at least 24 consecutive hours during any 7 consecutive calendar days.

(14) A flight attendant is not considered to be scheduled for duty in excess of duty period limitations if the flights to which the flight attendant is assigned are scheduled and normally terminate within the limitations but due to circumstances beyond the control of the certificate holder conducting domestic, flag, or supplemental operations (such as adverse weather conditions) are not at the time of departure expected to reach their destination within the scheduled time.

(c) Notwithstanding paragraph (b) of this section, a certificate holder conducting domestic, flag, or supplemental operations may apply the flight crewmember flight time and duty limitations and rest requirements of this part to flight attendants for all operations conducted under this part provided that—

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Federal Aviation Administration, DOT

§ 121.467

VerDate 03<MAR>99 14:18 Mar 11, 1999 Jkt 183041 PO 00000 Frm 00479 Fmt 8010 Sfmt 8010 Y:\SGML\183041T.XXX pfrm02 PsN: 183041T
§ 121.470 Applicability.

This subpart prescribes flight time limitations and rest requirements for domestic operations, except that:

(a) Certificate holders conducting operations with airplanes having a passenger seat configuration of 30 seats or fewer, excluding each crewmember seat, and a payload capacity of 7,500 pounds or less, may comply with the applicable requirements of §§135.261 through 135.273 of this chapter.

(b) Certificate holders conducting scheduled operations entirely within the States of Alaska or Hawaii with airplanes having a passenger seat configuration of more than 30 seats, excluding each crewmember seat, or a payload capacity of more than 7,500 pounds, may comply with the requirements of subpart R of this part for those operations.

[Doc. No. 28154, 60 FR 69934, Dec. 20, 1995]

§ 121.471 Flight time limitations and rest requirements: All flight crewmembers.

(a) No certificate holder conducting domestic operations may schedule any flight crewmember and no flight crewmember may accept an assignment for flight time in scheduled air transportation or in other commercial flying if that crewmember's total flight time in all commercial flying will exceed—

(1) 1,000 hours in any calendar year;

(2) 100 hours in any calendar month;

(3) 30 hours in any 7 consecutive days;

(4) 8 hours between required rest periods.

(b) Except as provided in paragraph (c) of this section, no certificate holder conducting domestic operations may schedule a flight crewmember and no flight crewmember may accept an assignment for flight time during the 24 consecutive hours preceding the scheduled completion of any flight segment without a scheduled rest period during that 24 hours of at least the following:

(1) 9 consecutive hours of rest for less than 8 hours of scheduled flight time.

(2) 10 consecutive hours of rest for 8 or more but less than 9 hours of scheduled flight time.

(3) 11 consecutive hours of rest for 9 or more hours of scheduled flight time.

(c) A certificate holder may schedule a flight crewmember for less than the
rest required in paragraph (b) of this section or may reduce a scheduled rest under the following conditions:

(1) A rest required under paragraph (b)(1) of this section may be scheduled for or reduced to a minimum of 8 hours if the flight crewmember is given a rest period of at least 10 hours that must begin no later than 24 hours after the commencement of the reduced rest period.

(2) A rest required under paragraph (b)(2) of this section may be scheduled for or reduced to a minimum of 8 hours if the flight crewmember is given a rest period of at least 11 hours that must begin no later than 24 hours after the commencement of the reduced rest period.

(3) A rest required under paragraph (b)(3) of this section may be scheduled for or reduced to a minimum of 9 hours if the flight crewmember is given a rest period of at least 12 hours that must begin no later than 24 hours after the commencement of the reduced rest period.

(4) No certificate holder may assign, nor may any flight crewmember perform any flight time with the certificate holder unless the flight crewmember has had at least the minimum rest required under this paragraph.

(d) Each certificate holder conducting domestic operations shall relieve each flight crewmember engaged in scheduled air transportation from all further duty for at least 24 consecutive hours during any 7 consecutive days.

(e) No certificate holder conducting domestic operations may assign any flight crewmember and no flight crewmember may accept assignment to any duty with the air carrier during any required rest period.

(f) Time spent in transportation, not local in character, that a certificate holder requires of a flight crewmember and provides to transport the crewmember to an airport at which he is to serve on a flight as a crewmember, or from an airport at which he was relieved from duty to return to his home station, is not considered part of a rest period.

(g) A flight crewmember is not considered to be scheduled for flight time in excess of flight time limitations if the flights to which he is assigned are scheduled and normally terminate within the limitations, but due to circumstances beyond the control of the certificate holder (such as adverse weather conditions), are not at the time of departure expected to reach their destination within the scheduled time.


Subpart R—Flight Time Limitations: Flag Operations


§121.480 Applicability.

This subpart prescribes flight time limitations and rest requirements for flag operations, except that certificate holders conducting operations with airplanes having a passenger seat configuration of 30 seats or fewer, excluding each crewmember seat, and a payload capacity of 7,500 pounds or less, may comply with the applicable requirements of §§135.261 through 135.273 of this chapter.

[Doc. No. 28154, 60 FR 65934, Dec. 20, 1995]

§121.481 Flight time limitations: One or two pilot crews.

(a) A certificate holder conducting flag operations may schedule a pilot to fly in an airplane that has a crew of one or two pilots for eight hours or less during any 24 consecutive hours.

(e) No certificate holder conducting domestic operations may assign any flight crewmember and no flight crewmember may accept assignment to any duty with the air carrier during any required rest period.

(f) Time spent in transportation, not local in character, that a certificate holder requires of a flight crewmember and provides to transport the crewmember to an airport at which he is to serve on a flight as a crewmember, or from an airport at which he was relieved from duty to return to his home station, is not considered part of a rest period.

(g) A flight crewmember is not considered to be scheduled for flight time in excess of flight time limitations if the flights to which he is assigned are scheduled and normally terminate within the limitations, but due to circumstances beyond the control of the certificate holder (such as adverse weather conditions), are not at the time of departure expected to reach their destination within the scheduled time.

§ 121.483 Flight time limitations: Two pilots and one additional flight crewmember.

(a) No certificate holder conducting flag operations may schedule a pilot to fly, in an airplane that has a crew of two pilots and at least one additional flight crewmember, for a total of more than 12 hours during any 24 consecutive hours.

(b) If a pilot has flown 20 or more hours during any 48 consecutive hours or 24 or more hours during any 72 consecutive hours, he must be given at least 18 hours of rest before being assigned to any duty with the air carrier. In any case, he must be given at least 24 consecutive hours of rest during any seven consecutive days.

(c) No pilot may fly as a flight crewmember more than—

(1) 120 hours during any 30 consecutive days;

(2) 300 hours during any 90 consecutive days;

(3) 1,000 hours during any 12-calendar-month period.


§ 121.485 Flight time limitations: Three or more pilots and an additional flight crewmember.

(a) Each certificate holder conducting flag operations shall schedule its flight hours to provide adequate rest periods on the ground for each pilot who is away from his base and who is a pilot on an airplane that has a crew of three or more pilots and an additional flight crewmember. It shall also provide adequate sleeping quarters on the airplane whenever a pilot is scheduled to fly more than 12 hours during any 24 consecutive hours.

(b) The certificate holder conducting flag operations shall give each pilot, upon return to his base from any flight or series of flights, a rest period that is at least twice the total number of hours he flew since the last rest period at his base. During the rest period required by this paragraph, the air carrier may not require him to perform any duty for it. If the required rest period is more than seven days, that part of the rest period in excess of seven days may be given at any time before the pilot is again scheduled for flight duty on any route.

(c) No pilot may fly as a flight crewmember more than—

(1) 350 hours during any 90 consecutive days; or

(2) 1,000 hours during any 12-calendar-month period.


§ 121.487 Flight time limitations: Pilots not regularly assigned.

(a) Except as provided in paragraphs (b) through (e) of this section, a pilot who is not regularly assigned as a flight crewmember for an entire calendar month under § 121.483 or 121.485 may not fly more than 100 hours in any 30 consecutive days.

(b) The monthly flight time limitations for a pilot who is scheduled for duty aloft for more than 20 hours in two-pilot crews in any calendar month, or whose assignment in such a crew is interrupted more than once in that calendar month by assignment to a crew consisting of two or more pilots and an additional flight crewmember, are those set forth in § 121.481.

(c) Except for a pilot covered by paragraph (b) of this section, the monthly and quarterly flight time limitations for a pilot who is scheduled for duty aloft for more than 20 hours in two-pilot and additional flight crewmember crews in any calendar month, or whose assignment in such a crew is interrupted more than once in that calendar...
§ 121.503 Flight time limitations: Pilots: airplanes.

(a) A certificate holder conducting supplemental operations may schedule a pilot to fly in an airplane for eight hours or less during any 24 consecutive hours without a rest period during those eight hours.

(b) Each pilot who has flown more than eight hours during any 24 consecutive hours must be given at least 16 hours of rest before being assigned to any duty with the certificate holder.

(c) Each certificate holder conducting supplemental operations shall relieve each pilot from all duty for at least 24 consecutive hours at least once during any seven consecutive days.

(d) No pilot may fly as a crewmember in air transportation more than 100 hours during any 30 consecutive days.

(e) No pilot may fly as a crewmember in air transportation more than 1,000 hours during any calendar year.

(f) Notwithstanding paragraph (a) of this section, the certificate holder may, in conducting a transcontinental nonstop flight, schedule a flight crewmember for more than eight but not more than 10 hours of continuous duty aloft without an intervening rest period, if—

(1) The flight is in an airplane with a pressurization system that is operative at the beginning of the flight; and

(2) The flight crew consists of at least two pilots and a flight engineer; and

§ 121.500 Applicability.

This subpart prescribes flight time limitations and rest requirements for supplemental operations, except that certificate holders conducting operations with airplanes having a passenger seat configuration of 30 seats or fewer, excluding each crewmember seat, and a payload capacity of 7,500 pounds or less, may comply with the applicable requirements of §§135.261 through 135.273 of this chapter.

[Doc. No. 28154, 60 FR 65934, Dec. 20, 1995]
§ 121.505 Flight time limitations: Two pilot crews: airplanes.

(a) If a certificate holder conducting supplemental operations schedules a pilot to fly more than eight hours during any 24 consecutive hours, it shall give him an intervening rest period at or before the end of eight scheduled hours of flight duty. This rest period must be at least twice the number of hours flown since the preceding rest period, but not less than eight hours. The certificate holder conducting supplemental operations shall relieve that pilot of all duty with it during that rest period.

(b) No pilot of an airplane that has a crew of two pilots may be on duty for more than 16 hours during any 24 consecutive hours.

§ 121.507 Flight time limitations: Three pilot crews: airplanes.

(a) No certificate holder conducting supplemental operations may schedule a pilot—

1. For flight deck duty in an airplane that has a crew of three pilots for more than eight hours in any 24 consecutive hours; or

2. To be aloft in an airplane that has a crew of three pilots for more than 12 hours in any 24 consecutive hours.

(b) No pilot of an airplane that has a crew of three pilots may be on duty for more than 18 hours in any 24 consecutive hours.

§ 121.509 Flight time limitations: Four pilot crews: airplanes.

(a) No certificate holder conducting supplemental operations may schedule a pilot—

1. For flight deck duty in an airplane that has a crew of four pilots for more than eight hours in any 24 consecutive hours; or

2. To be aloft in an airplane that has a crew of four pilots for more than 16 hours in any 24 consecutive hours.

(b) No pilot of an airplane that has a crew of four pilots may be on duty for more than 20 hours in any 24 consecutive hours.

§ 121.511 Flight time limitations: Flight engineers: airplanes.

(a) In any operation in which one flight engineer is serving the flight time limitations in §§ 121.503 and 121.505 apply to that flight engineer.

(b) In any operation in which more than one flight engineer is serving and the flight crew contains more than two pilots the flight time limitations in § 121.509 apply in place of those in § 121.505.

§ 121.513 Flight time limitations: Overseas and international operations: airplanes.

In place of the flight time limitations in §§ 121.503 through 121.511, a certificate holder conducting supplemental operations may elect to comply with the flight time limitations of §§ 121.515 and 121.521 through 121.525 for operations conducted—

(a) Between a place in the 48 contiguous States and the District of Columbia, or Alaska, and any place outside thereof;

(b) Between any two places outside the 48 contiguous States, the District of Columbia, and Alaska; or

(c) Between two places within the State of Alaska or the State of Hawaii.
§ 121.515 Flight time limitations: All airmen: airplanes.

No airman may be aloft as a flight crewmember more than 1,000 hours in any 12-calendar-month period.

§ 121.517 Flight time limitations: Other commercial flying: airplanes.

No airman who is employed by a certificate holder conducting supplemental operations may do any other commercial flying, if that commercial flying plus his flying in operations under this part will exceed any flight time limitation in this part.

[Doc. No. 28154, 61 FR 2613, Jan. 26, 1996]

§ 121.519 Flight time limitations: Deadhead transportation: airplanes.

Time spent by an airman in deadhead transportation to or from a duty assignment is not considered to be part of any rest period.

§ 121.521 Flight time limitations: Crew of two pilots and one additional airman as required.

(a) No certificate holder conducting supplemental operations may schedule an airman to be aloft as a member of the flight crew in an airplane that has a crew of two pilots and at least one additional flight crewmember for more than 12 hours during any 24 consecutive hours.

(b) If an airman has been aloft as a member of a flight crew for 20 or more hours during any 48 consecutive hours or 24 or more hours during any 72 consecutive hours, he must be given at least 18 hours of rest on the ground. If a flight crewmember is on continuous duty for more than 24 hours (whether scheduled or not), duty any scheduled duty period, he must be given at least 16 hours for rest on the ground after completing the last flight scheduled for that scheduled duty period before being assigned any further flight duty.

(c) No certificate holder conducting supplemental operations may schedule any flight crewmember to be on continuous duty for more than 30 hours. Such a crewmember is considered to be on continuous duty from the time he reports for duty until the time he is released from duty for a rest period of at least 10 hours on the ground. If a flight crewmember is on continuous duty for more than 24 hours (whether scheduled or not) duty any scheduled duty period, he must be given at least 16 hours for rest on the ground after completing the last flight scheduled for that scheduled duty period before being assigned any further flight duty.

(d) If a flight crewmember is required to engage in deadhead transportation for more than four hours before beginning flight duty, one half of the time spent in deadhead transportation must be treated as duty time for the purpose of complying with duty time limitations, unless he is given at least 10 hours of rest on the ground before being assigned to flight duty.

(e) Each certificate holder conducting supplemental operations shall give each airman, upon return to his operations base from any flight or series of flights, a rest period that is at least twice the total number of hours he was aloft as a flight crewmember since the last rest period at his base, before assigning him to any further duty. If the required rest period is more than seven days, that part of the rest period that

§ 121.523 Flight time limitations: Crew of three or more pilots and additional airmen as required.

(a) No certificate holder conducting supplemental operations may schedule an airman for flight deck duty as a flight engineer, or navigator in a crew of three or more pilots and additional airmen for a total of more than 12 hours during any 24 consecutive hours.

(b) Each certificate holder conducting supplemental operations shall schedule its flight hours to provide adequate rest periods on the ground for each airman who is away from his principal operations base. It shall also provide adequate sleeping quarters on the airplane whenever an airman is scheduled to be aloft as a flight crewmember for more than 12 hours during any 24 consecutive hours.

(c) No certificate holder conducting supplemental operations may schedule any flight crewmember to be on continuous duty for more than 30 hours. Such a crewmember is considered to be on continuous duty from the time he reports for duty until the time he is released from duty for a rest period of at least 10 hours on the ground. If a flight crewmember is on continuous duty for more than 24 hours (whether scheduled or not), duty any scheduled duty period, he must be given at least 16 hours for rest on the ground after completing the last flight scheduled for that scheduled duty period before being assigned any further flight duty.

(d) If a flight crewmember is required to engage in deadhead transportation for more than four hours before beginning flight duty, one half of the time spent in deadhead transportation must be treated as duty time for the purpose of complying with duty time limitations, unless he is given at least 10 hours of rest on the ground before being assigned to flight duty.

(e) Each certificate holder conducting supplemental operations shall give each airman, upon return to his operations base from any flight or series of flights, a rest period that is at least twice the total number of hours he was aloft as a flight crewmember since the last rest period at his base, before assigning him to any further duty. If the required rest period is more than seven days, that part of the rest period that
§ 121.525 Flight time limitations: Pilots serving in more than one kind of flight crew.

(a) This section applies to each pilot assigned during any 30 consecutive days to more than one type of flight crew.

(b) The flight time limitations for a pilot who is scheduled for duty aloft for more than 20 hours in two-pilot crews in 30 consecutive days, or whose assignment in such a crew is interrupted more than once in any 30 consecutive days by assignment to a crew of two or more pilots and an additional flight crewmember, are those listed in §§ 121.503 through 121.509, as appropriate.

(c) Except for a pilot covered by paragraph (b) of this section, the flight time limitations for a pilot scheduled for duty aloft for more than 20 hours in two-pilot and additional flight crewmember crews in 30 consecutive days or whose assignment in such a crew is interrupted more than once in any 30 consecutive days by assignment to a crew consisting of three pilots and an additional flight crewmember, are those set forth in § 121.523.

(d) The flight time limitations for a pilot to whom paragraphs (b) and (c) of this section do not apply, and who is scheduled for duty aloft for a total of not more than 20 hours within 30 consecutive days in two-pilot crews (with or without additional flight crewmembers) are those set forth in § 121.523.

(e) The flight time limitations for a pilot assigned to each of two-pilot, two-pilot and additional flight crewmember, and three-pilot and additional flight crewmember crews in 30 consecutive days, and who is not subject to paragraph (b), (c), or (d) of this section, are those listed in § 121.523.
for the preflight planning, delay, and dispatch release of a flight in compliance with this chapter and operations specifications.

(c) The aircraft dispatcher is responsible for—
   (1) Monitoring the progress of each flight; and
   (2) Issuing necessary instructions and information for the safety of the flight; and
   (3) Cancelling or redispershing a flight if, in his opinion or the opinion of the pilot in command, the flight cannot operate or continue to operate safely as planned or released.

(d) Each pilot in command of an aircraft is, during flight time, in command of the aircraft and crew and is responsible for the safety of the passengers, crewmembers, cargo, and airplane.

(e) Each pilot in command has full control and authority in the operation of the aircraft, without limitation, over other crewmembers and their duties during flight time, whether or not he holds valid certificates authorizing him to perform the duties of those crewmembers.

(f) No pilot may operate an aircraft in a careless or reckless manner so as to endanger life or property.

§ 121.537 Responsibility for operational control: Supplemental operations.

(a) Each certificate holder conducting supplemental operations—
   (1) Is responsible for operational control; and
   (2) Shall list each person authorized by it to exercise operational control in its operator’s manual.

(b) The pilot in command and the director of operations are jointly responsible for the initiation, continuation, diversion, and termination of a flight in compliance with this chapter and the operations specifications. The director of operations may delegate the functions for the initiation, continuation, diversion, and termination of a flight but he may not delegate the responsibility for those functions.

(c) The director of operations is responsible for cancelling, diverting, or delaying a flight if in his opinion or the opinion of the pilot in command the flight cannot operate or continue to operate safely as planned or released. The director of operations is responsible for assuring that each flight is monitored with respect to at least the following:

   (1) Departure of the flight from the place of origin and arrival at the place of destination, including intermediate stops and any diversions therefrom.
   (2) Maintenance and mechanical delays encountered at places of origin and destination and intermediate stops.
   (3) Any known conditions that may adversely affect the safety of flight.

(d) Each pilot in command of an aircraft is, during flight time, in command of the aircraft and crew and is responsible for the safety of the passengers, crewmembers, cargo, and aircraft. The pilot in command has full control and authority in the operation of the aircraft, without limitation, over other crewmembers and their duties during flight time, whether or not he holds valid certificates authorizing him to perform the duties of those crewmembers.

(e) Each pilot in command of an aircraft is responsible for the preflight planning and the operation of the flight in compliance with this chapter and the operations specifications.

(f) No pilot may operate an aircraft in a careless or reckless manner so as to endanger life or property.

§ 121.538 Airplane security.

Certificate holders conducting operations under this part shall comply with the applicable security requirements in part 108 of this chapter.

§ 121.539 Operations notices.

Each certificate holder shall notify its appropriate operations personnel of each change in equipment and operating procedures, including each known change in the use of navigation aids.
§ 121.541 Operations schedules: Domestic and flag operations.

In establishing flight operations schedules, each certificate holder conducting domestic or flag operations shall allow enough time for the proper servicing of aircraft at intermediate stops, and shall consider the prevailing winds en route and the cruising speed of the type of aircraft used. This cruising speed may not be more than that resulting from the specified cruising output of the engines.

[Doc. No. 28154, 61 FR 2613, Jan. 26, 1996]

§ 121.542 Flight crewmember duties.

(a) No certificate holder shall require, nor may any flight crewmember perform, any duties during a critical phase of flight except those duties required for the safe operation of the aircraft. Duties such as company required calls made for such nonsafety related purposes as ordering galley supplies and confirming passenger connections, announcements made to passengers promoting the air carrier or pointing out sights of interest, and filling out company payroll and related records are not required for the safe operation of the aircraft.

(b) No flight crewmember may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any flight crewmember from the performance of his or her duties or which could interfere in any way with the proper conduct of those duties. Activities such as eating meals, engaging in nonessential conversations within the cockpit and nonessential communications between the cabin and cockpit crews, and reading publications not related to the proper conduct of the flight are not required for the safe operation of the aircraft.

(c) For the purposes of this section, critical phases of flight includes all ground operations involving taxi, takeoff and landing, and all other flight operations conducted below 10,000 feet, except cruise flight.

NOTE: Taxi is defined as "movement of an airplane under its own power on the surface of an airport."

[Doc. No. 20661, 46 FR 5502, Jan. 19, 1981]

§ 121.543 Flight crewmembers at controls.

(a) Except as provided in paragraph (b) of this section, each required flight crewmember on flight deck duty must remain at the assigned duty station with seat belt fastened while the aircraft is taking off or landing, and while it is en route.

(b) A required flight crewmember may leave the assigned duty station--

(1) If the crewmember's absence is necessary for the performance of duties in connection with the operation of the aircraft;

(2) If the crewmember's absence is in connection with physiological needs; or

(3) If the crewmember is taking a rest period, and relief is provided--

(i) In the case of the assigned pilot in command during the en route cruise portion of the flight, by a pilot who holds an airline transport pilot certificate and an appropriate type rating, is currently qualified as pilot in command or second in command, and is qualified as pilot in command of that aircraft during the en route cruise portion of the flight. A second in command qualified to act as a pilot in command en route need not have completed the following pilot in command requirements: The 6-month recurrent flight training required by §121.433(c)(1)(iii); the operating experience required by §121.434; the takeoffs and landings required by §121.439; the line check required by §121.440; and the 6-month proficiency check or simulator training required by §121.441(a)(1); and

(ii) In the case of the assigned second in command, by a pilot qualified to act as second in command of that aircraft during en route operations. However, the relief pilot need not meet the recent experience requirements of §121.439(b).

§ 121.545 Manipulation of controls.

No pilot in command may allow any person to manipulate the controls of an aircraft during flight nor may any person manipulate the controls during flight unless that person is—

(a) A qualified pilot of the certificate holder operating that aircraft.

(b) An authorized pilot safety representative of the Administrator or of the National Transportation Safety Board who has the permission of the pilot in command, is qualified in the aircraft, and is checking flight operations; or

(c) A pilot of another certificate holder who has the permission of the pilot in command, is qualified in the aircraft, and is authorized by the certificate holder operating the aircraft.


§ 121.547 Admission to flight deck.

(a) No person may admit any person to the flight deck of an aircraft unless the person being admitted is—

(1) A crewmember;

(2) An FAA air carrier inspector, or an authorized representative of the National Transportation Safety Board, who is performing official duties;

(3) An employee of the United States, a certificate holder, or an aeronautical enterprise who has the permission of the pilot in command and whose duties are such that admission to the flight deck is necessary or advantageous for safe operations; or

(4) Any person who has the permission of the pilot in command and is specifically authorized by the certificate holder management and by the Administrator.

Paragraph (a)(2) of this section does not limit the emergency authority of the pilot in command to exclude any person from the flight deck in the interests of safety.

(b) For the purposes of paragraph (a)(3) of this section, employees of the United States who deal responsibly with matters relating to safety and employees of the certificate holder whose efficiency would be increased by familiarity with flight conditions, may be admitted by the certificate holder.

However, the certificate holder may not admit employees of traffic, sales, or other departments that are not directly related to flight operations, unless they are eligible under paragraph (a)(4) of this section.

(c) No person may admit any person to the flight deck unless there is a seat available for his use in the passenger compartment, except—

(1) An FAA air carrier inspector or an authorized representative of the Administrator or National Transportation Safety Board who is checking or observing flight operations;

(2) An air traffic controller who is authorized by the Administrator to observe ATC procedures;

(3) A certificated airman employed by the certificate holder whose duties require an airman certificate;

(4) A certificated airman employed by another certificate holder whose duties with that certificate holder require an airman certificate and who is authorized by the certificate holder operating the aircraft to make specific trips over a route;

(5) An employee of the certificate holder operating the aircraft whose duty is directly related to the conduct or planning of flight operations or the inflight monitoring of aircraft equipment or operating procedures, if his presence on the flight deck is necessary to perform his duties and he has been authorized in writing by a responsible supervisor, listed in the Operations Manual as having that authority; and

(6) A technical representative of the manufacturer of the aircraft or its components whose duties are directly related to the in-flight monitoring of aircraft equipment or operating procedures, if his presence on the flight deck is necessary to perform his duties, and he has been authorized in writing by the Administrator and by a responsible supervisor of the operations department of the certificate holder, listed in the Operations Manual as having that authority.

§ 121.548 Aviation safety inspector's credentials: Admission to pilot's compartment.

Whenever, in performing the duties of conducting an inspection, an inspector of the Federal Aviation Administration presents form FAA 110A, “Aviation Safety Inspector's Credential,” to the pilot in command of an aircraft operated by a certificate holder, the inspector must be given free and uninterrupted access to the pilot's compartment of that aircraft.

[Doc. No. 28154, 61 FR 2613, Jan. 26, 1996]

§ 121.549 Flying equipment.

(a) The pilot in command shall ensure that appropriate aeronautical charts containing adequate information concerning navigation aids and instrument approach procedures are aboard the aircraft for each flight.

(b) Each crewmember shall, on each flight, have readily available for his use a flashlight that is in good working order.

§ 121.550 Secret Service Agents: Admission to flight deck.

Whenever an Agent of the Secret Service who is assigned the duty of protecting a person aboard an aircraft operated by a certificate holder considers it necessary in the performance of his duty to ride on the flight deck of the aircraft, he must, upon request and presentation of his Secret Service credentials to the pilot in command of the aircraft, be admitted to the flight deck and permitted to occupy an observer seat thereon.


§ 121.551 Restriction or suspension of operation: Domestic and flag operations.

When a certificate holder conducting domestic or flag operations knows of conditions, including airport and runway conditions, that are a hazard to safe operations, it shall restrict or suspend operations until those conditions are corrected.

[Doc. No. 28154, 61 FR 2613, Jan. 26, 1996]

§ 121.553 Restriction or suspension of operation: Supplemental operations.

When a certificate holder conducting supplemental operations or pilot in command knows of conditions, including airport and runway conditions, that are a hazard to safe operations, the certificate holder or pilot in command, as the case may be, shall restrict or suspend operations until those conditions are corrected.

[Doc. No. 28154, 61 FR 2613, Jan. 26, 1996]

§ 121.555 Compliance with approved routes and limitations: Domestic and flag operations.

No pilot may operate an airplane in scheduled air transportation—

(a) Over any route or route segment unless it is specified in the certificate holder's operations specifications; or

(b) Other than in accordance with the limitations in the operations specifications.


§ 121.557 Emergencies: Domestic and flag operations.

(a) In an emergency situation that requires immediate decision and action the pilot in command may take any action that he considers necessary under the circumstances. In such a case he may deviate from prescribed operations procedures and methods, weather minimums, and this chapter, to the extent required in the interests of safety.

(b) In an emergency situation arising during flight that requires immediate decision and action by an aircraft dispatcher, and that is known to him, the aircraft dispatcher shall advise the pilot in command of the emergency, shall ascertain the decision of the pilot in command, and shall have the decision recorded. If the aircraft dispatcher cannot communicate with the pilot, he shall declare an emergency and take any action that he considers necessary under the circumstances.

(c) Whenever a pilot in command or dispatcher exercises emergency authority, he shall keep the appropriate ATC
§ 121.559 Emergencies: Supplemental operations.

(a) In an emergency situation that requires immediate decision and action, the pilot in command may take any action that he considers necessary under the circumstances. In such a case, he may deviate from prescribed operations, procedures and methods, weather minimums, and this chapter, to the extent required in the interests of safety.

(b) In an emergency situation arising during flight that requires immediate decision and action by appropriate management personnel in the case of operations conducted with a flight following service and which is known to them, those personnel shall advise the pilot in command of the emergency, shall ascertain the decision of the pilot in command, and shall have the decision recorded. If they cannot communicate with the pilot, they shall declare an emergency and take any action that they consider necessary under the circumstances.

(c) Whenever emergency authority is exercised, the pilot in command or the appropriate management personnel shall keep the appropriate ground radio station fully informed of the progress of the flight. The person declaring the emergency shall send a written report of any deviation through the certificate holder’s operations manager, to the Administrator. A dispatcher shall send his report within 10 days after the date of the emergency, and a pilot in command shall send his report within 10 days after returning to his home base.


§ 121.561 Reporting potentially hazardous meteorological conditions and irregularities of ground and navigation facilities.

(a) Whenever he encounters a meteorological condition or an irregularity in a ground or navigational facility, in flight, the knowledge of which he considers essential to the safety of other flights, the pilot in command shall notify an appropriate ground station as soon as practicable.

(b) The ground radio station that is notified under paragraph (a) of this section shall report the information to the agency directly responsible for operating the facility.

§ 121.563 Reporting mechanical irregularities.

The pilot in command shall ensure that all mechanical irregularities occurring during flight time are entered in the maintenance log of the airplane at the end of that flight time. Before each flight the pilot in command shall ascertain the status of each irregularity entered in the log at the end of the preceding flight.


§ 121.565 Engine inoperative: Landing; reporting.

(a) Except as provided in paragraph (b) of this section, whenever an engine of an airplane fails or whenever the rotation of an engine is stopped to prevent possible damage, the pilot in command shall land the airplane at the nearest suitable airport, in point of time, at which a safe landing can be made.

(b) If not more than one engine of an airplane that has three or more engines fails or its rotation is stopped, the pilot in command may proceed to an airport that he selects if, after considering the following, he decides that proceeding to that airport is as safe as landing at the nearest suitable airport:

(1) The nature of the malfunction and the possible mechanical difficulties that may occur if flight is continued.

(2) The altitude, weight, and usable fuel at the time of engine stoppage.

(3) The weather conditions en route and at possible landing points.
§ 121.567 Instrument approach procedures and IFR landing minimums.

No person may make an instrument approach at an airport except in accordance with IFR weather minimums and instrument approach procedures set forth in the certificate holder's operations specifications.

§ 121.569 Equipment interchange: Domestic and flag operations.

(a) Before operating under an interchange agreement, each certificate holder conducting domestic or flag operations shall show that—

(1) The procedures for the interchange operation conform with this chapter and with safe operating practices;

(2) Required crewmembers and dispatchers meet approved training requirements for the airplanes and equipment to be used and are familiar with the communications and dispatch procedures to be used;

(3) Maintenance personnel meet training requirements for the airplanes and equipment, and are familiar with the maintenance procedures to be used;

(4) Flight crewmembers and dispatchers meet appropriate route and airport qualifications; and

(5) The airplanes to be operated are essentially similar to the airplanes of the certificate holder with whom the interchange is effected with respect to the arrangement of flight instruments and the arrangement and motion of controls that are critical to safety unless the Administrator determines that the certificate holder has adequate training programs to insure that any potentially hazardous dissimilarities are safely overcome by flight crew familiarization.

(b) Each certificate holder conducting domestic or flag operations shall include the pertinent provisions and procedures involved in the equipment interchange agreement in its manuals.

§ 121.570 Airplane evacuation capability.

(a) No person may cause an airplane carrying passengers to be moved on the surface, take off, or land unless each automatically deployable emergency evacuation assisting means, installed pursuant to §121.310(a), is ready for evacuation.

(b) Each certificate holder shall ensure that, at all times passengers are on board prior to airplane movement on the surface, at least one floor-level exit provides for the egress of passengers through normal or emergency means.

§ 121.571 Briefing passengers before takeoff.

(a) Each certificate holder operating a passenger-carrying airplane shall insure that all passengers are orally briefed by the appropriate crewmember as follows:

(1) Before each takeoff, on each of the following:

(i) Smoking. Each passenger shall be briefed on when, where, and under what conditions smoking is prohibited including, but not limited to, any applicable requirements of part 252 of this

[Doc No. 26142, 57 FR 42674, Sept. 15, 1992]
§ 121.573 Briefing passengers: Extended overwater operations.

(a) In addition to the oral briefing required by §121.571(a), each certificate holder operating an airplane in extended overwater operations shall ensure that all passengers are orally briefed by the appropriate crewmember on the location and operation of life preservers, liferafts, and other flotation means, including a demonstration

(i) Brief the person and his attendant, if any, on the routes to each appropriate exit and on the most appropriate time to begin moving to an exit in the event of an emergency; and

(ii) Inquire of the person and his attendant, if any, as to the most appropriate manner of assisting the person so as to prevent pain and further injury.

(4) The requirements of paragraph (a)(3) of this section do not apply to a person who has been given a briefing before a previous leg of a flight in the same aircraft when the crewmembers on duty have been advised as to the most appropriate manner of assisting the person so as to prevent pain and further injury.

(b) Each certificate holder shall carry on each passenger-carrying airplane, in convenient locations for use of each passenger, printed cards supplementing the oral briefing and containing—

(1) Diagrams of, and methods of operating, the emergency exits; and

(2) Other instructions necessary for use of emergency equipment.

Each card required by this paragraph must contain information that is pertinent only to the type and model airplane used for that flight.

(c) The certificate holder shall describe in its manual the procedure to be followed in the briefing required by paragraph (a) of this section.

§ 121.574 Oxygen for medical use by passengers.

(a) A certificate holder may allow a passenger to carry and operate equipment for the storage, generation, or dispensing of oxygen when the following conditions are met:

(1) The equipment is—
   (i) Furnished by the certificate holder;
   (ii) Of an approved type or is in conformity with the manufacturing, packaging, marking, labeling, and maintenance requirements of 49 CFR parts 171, 172, and 173, except §173.24(a)(1);
   (iii) Maintained by the certificate holder in accordance with an approved maintenance program;
   (iv) Free of flammable contaminants on all exterior surfaces;
   (v) Capable of providing a minimum mass flow of oxygen to the user of four liters per minute;
   (vi) Constructed so that all valves, fittings, and gauges are protected from damage; and
   (vii) Appropriately secured.

(2) When the oxygen is stored in the form of a liquid, the equipment has been under the certificate holder’s approved maintenance program since its purchase new or since the last hydrostatic test of the storage cylinder; and

(i) The equipment has been under the certificate holder’s approved maintenance program since its purchase new or since the last hydrostatic test of the storage cylinder; and

(ii) The pressure in any oxygen cylinder does not exceed the rated cylinder pressure.

(4) Each person using the equipment has a medical need to use it evidenced by a written statement to be kept in that person’s possession, signed by a licensed physician which specifies the maximum quantity of oxygen needed each hour and the maximum flow rate needed for the pressure altitude corresponding to the pressure in the cabin of the airplane under normal operating conditions. This paragraph does not apply to the carriage of oxygen in an airplane in which the only passengers carried are persons who may have a medical need for oxygen during flight, no more than one relative or other interested person for each of those persons, and medical attendants.

(5) When a physician’s statement is required by paragraph (a)(4) of this section, the total quantity of oxygen carried is equal to the maximum quantity of oxygen needed each hour, as specified in the physician’s statement, multiplied by the number of hours used to compute the amount of airplane fuel required by this part.

(6) The pilot in command is advised when the equipment is on board, and when it is intended to be used.

(7) The equipment is stowed, and each person using the equipment is seated, so as not to restrict access to or use of any required emergency, or regular exit or of the aisle in the passenger compartment.

(b) No person may, and no certificate holder may allow any person to, smoke within 10 feet of oxygen storage and dispensing equipment carried in accordance with paragraph (a) of this section.

(c) No certificate holder may allow any person to connect or disconnect oxygen dispensing equipment, to or from a gaseous oxygen cylinder while any passenger is aboard the airplane.
(d) The requirements of this section do not apply to the carriage of supplemental or first-aid oxygen and related equipment required by this chapter.

[Doc. No. 12169, 39 FR 42677, Dec. 6, 1974, as amended by Amdt. 121-159, 45 FR 41594, June 19, 1980]

§ 121.575 Alcoholic beverages.

(a) No person may drink any alcoholic beverage aboard an aircraft unless the certificate holder operating the aircraft has served that beverage to him.

(b) No certificate holder may serve any alcoholic beverage to any person aboard any of its aircraft who—

(1) Appears to be intoxicated;

(2) Is escorting a person or being escorted in accordance with § 108.21; or

(3) Has a deadly or dangerous weapon accessible to him while aboard the aircraft in accordance with § 108.11.

(c) No certificate holder may allow any person to board any of its aircraft if that person appears to be intoxicated.

(d) Each certificate holder shall, within five days after the incident, report to the Administrator the refusal of any person to comply with paragraph (a) of this section, or of any disturbance caused by a person who appears to be intoxicated aboard any of its aircraft.

[Doc. No. 26142, 57 FR 42674, Sept. 15, 1992]

§ 121.576 Retention of items of mass in passenger and crew compartments.

The certificate holder must provide and use means to prevent each item of galley equipment and each serving cart, when not in use, and each item of crew baggage, which is carried in a passenger or crew compartment from becoming a hazard by shifting under the appropriate load factors corresponding to the emergency landing conditions under which the airplane was type certified.

[Doc. No. 16383, 43 FR 22648, May 25, 1978]

§ 121.577 Stowage of food, beverage, and passenger service equipment during airplane movement on the surface, takeoff, and landing.

(a) No certificate holder may move an airplane on the surface, take off, or land when any food, beverage, or tableware furnished by the certificate holder is located at any passenger seat.

(b) No certificate holder may move an airplane on the surface, take off, or land unless each food and beverage tray and seat back tray table is secured in its stowed position.

(c) No certificate holder may permit an airplane to move on the surface, take off, or land unless each passenger serving cart is secured in its stowed position.

(d) No certificate holder may permit an airplane to move on the surface, take off, or land unless each movie screen that extends into an aisle is stowed.

(e) Each passenger shall comply with instructions given by a crewmember with regard to compliance with this section.


§ 121.578 Cabin ozone concentration.

(a) For the purpose of this section, the following definitions apply:

(1) Flight segment means scheduled nonstop flight time between two airports.

(2) Sea level equivalent refers to conditions of 25°C and 760 millimeters of mercury pressure.

(b) Except as provided in paragraphs (d) and (e) of this section, no certificate holder may operate an airplane above the following flight levels unless it is successfully demonstrated to the Administrator that the concentration of ozone inside the cabin will not exceed—

(1) For flight above flight level 320, 0.25 parts per million by volume, sea level equivalent, at any time above that flight level; and

(2) For flight above flight level 270, 0.1 parts per million by volume, sea level equivalent, time-weighted average for each flight segment that exceeds 4 hours and includes flight above that flight level. (For this purpose, the
§ 121.579 Minimum altitudes for use of autopilot.

(a) En route operations. Except as provided in paragraphs (b), (c), and (d) of this section, no person may use an autopilot en route, including climb and descent, at an altitude above the terrain that is less than twice the maximum altitude loss specified in the Airplane Flight Manual for a malfunction of the autopilot under approach conditions, or 50 feet, whichever is higher.

(b) Approaches. When using an instrument approach facility, no person may use an autopilot at an altitude above the terrain that is less than twice the maximum altitude loss specified in the Airplane Flight Manual for a malfunction of the autopilot under approach conditions, or less than 50 feet below the approved minimum descent altitude or decision height for the facility, whichever is higher, except—

(1) When reported weather conditions are less than the basic VFR weather conditions in §91.155 of this chapter, no person may use an autopilot with an approach coupler for ILS approaches at an altitude above the terrain that is less than 50 feet higher than the maximum altitude loss specified in the Airplane Flight Manual for the malfunction of the autopilot with approach coupler under approach conditions; and

(2) When reported weather conditions are equal to or better than the basic VFR minimums in §91.155 of this chapter, no person may use an autopilot with an approach coupler for ILS approaches at an altitude above the terrain that is less than the maximum altitude loss specified in the Airplane Flight Manual for the malfunction of the autopilot with approach coupler under approach conditions, or 50 feet, whichever is higher.

(c) Notwithstanding paragraph (a) or (b) of this section, the Administrator issues operations specifications to allow the use, to touchdown, of an approved flight control guidance system with automatic capability, in any case in which—

(1) The system does not contain any altitude loss (above zero) specified in the Airplane Flight Manual for malfunction of the autopilot with approach coupler; and

(2) He finds that the use of the system to touchdown will not otherwise affect the safety standards required by this section.

(d) Takeoffs. Notwithstanding paragraph (a) of this section, the Administrator issues operations specifications...
§ 121.583 Carriage of persons without compliance with the passenger-carrying requirements of this part.

(a) When authorized by the certificate holder, the following persons, but no others, may be carried aboard an airplane without complying with the passenger-carrying airplane requirements in §§121.309(f), 121.310, 121.391, 121.571, and 121.587; the passenger-carrying operation requirements in §§121.157(c) and 121.291; and the requirements pertaining to passengers in §§121.265, 121.313(f), 121.317, 121.547, and 121.573:

(1) A crewmember.

(2) A company employee.

(3) An FAA air carrier inspector, or an authorized representative of the National Transportation Safety Board, who is performing official duties.

(4) A person necessary for—

(i) The safety of the flight;

(ii) The safe handling of animals;

(iii) The safe handling of hazardous materials whose carriage is governed by regulations in 49 CFR part 175;

(iv) The security of valuable or confidential cargo;

(v) The preservation of fragile or perishable cargo;

(vi) Experiments on, or testing of, cargo containers or cargo handling devices;

(vii) The operation of special equipment for loading or unloading cargo; and

(viii) The loading or unloading of outsized cargo.

(5) A person described in paragraph (a)(4) of this section, when traveling to or from his assignment.

(6) A person performing duty as an honor guard accompanying a shipment made by or under the authority of the United States.

(7) A military courier, military route supervisor, military cargo contract coordinator, or a flight crewmember of another military cargo contract air carrier or commercial operator, carried by a military cargo contract air carrier or military airplane.
§ 121.585 Exit seating.

(a)(1) Each certificate holder shall determine, to the extent necessary to perform the applicable functions of paragraph (d) of this section, the suitability of each person it permits to occupy an exit seat, in accordance with this section. For the purpose of this section—

(i) Exit seat means—

(A) Each seat having direct access to an exit; and,

(B) Each seat in a row of seats through which passengers would have to pass to gain access to an exit, from the first seat inboard of the exit to the first aisle inboard of the exit.

(ii) A passenger seat having “direct access” means a seat from which a passenger can proceed directly to the exit without entering an aisle or passing around an obstruction.

(2) Each certificate holder shall make the passenger exit seating determinations required by this paragraph in a non-discriminatory manner consistent with the requirements of this section, by persons designated in the certificate holder’s required operations manual.

(3) Each certificate holder shall designate the exit seats for each passenger seating configuration in its fleet in accordance with the definitions in this paragraph and submit those designations for approval as part of the procedures required to be submitted for approval under paragraphs (n) and (p) of this section.

(b) No certificate holder may seat a person in a seat affected by this section if the certificate holder determines that it is likely that the person would be unable to perform one or more of the applicable functions listed in paragraph (d) of this section because—
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(1) The person lacks sufficient mobility, strength, or dexterity in both arms and hands, and both legs:  
(i) To reach upward, sideways, and downward to the location of emergency exit and exit-slide operating mechanisms;  
(ii) To grasp and push, pull, turn, or otherwise manipulate those mechanisms;  
(iii) To push, shove, pull, or otherwise open emergency exits;  
(iv) To lift out, hold, deposit on nearby seats, or maneuver over the seatbacks to the next row objects the size and weight of over-wing window exit doors;  
(v) To remove obstructions similar in size and weight to over-wing exit doors;  
(vi) To reach the emergency exit expeditiously;  
(vii) To maintain balance while removing obstructions;  
(viii) To exit expeditiously;  
(ix) To stabilize an escape slide after deployment; or  
(x) To assist others in getting off an escape slide;  

(2) The person is less than 15 years of age or lacks the capacity to perform one or more of the applicable functions listed in paragraph (d) of this section without the assistance of an adult companion, parent, or other relative;  

(3) The person lacks the ability to read and understand instructions required by this section and related to emergency evacuation provided by the certificate holder in printed or graphic form or the ability to understand oral crew commands.  

(4) The person lacks sufficient visual capacity to perform one or more of the applicable functions in paragraph (d) of this section without the assistance of visual aids beyond contact lenses or eyeglasses;  

(5) The person lacks sufficient aural capacity to hear and understand instructions shouted by flight attendants, without assistance beyond a hearing aid;  

(6) The person lacks the ability adequately to impart information orally to other passengers; or  

(7) The person has:  
(i) A condition or responsibilities, such as caring for small children, that might prevent the person from performing one or more of the applicable functions listed in paragraph (d) of this section; or  
(ii) A condition that might cause the person harm if he or she performs one or more of the applicable functions listed in paragraph (d) of this section.  

(c) Each passenger shall comply with instructions given by a crewmember or other authorized employee of the certificate holder implementing exit seating restrictions established in accordance with this section.  

(d) Each certificate holder shall include on passenger information cards, presented in the language in which briefings and oral commands are given by the crew, at each exit seat affected by this section, information that, in the event of an emergency in which a crewmember is not available to assist, a passenger occupying an exit seat may use if called upon to perform the following functions:  
(1) Locate the emergency exit;  
(2) Recognize the emergency exit opening mechanism;  
(3) Comprehend the instructions for operating the emergency exit;  
(4) Operate the emergency exit;  
(5) Assess whether opening the emergency exit will increase the hazards to which passengers may be exposed;  
(6) Follow oral directions and hand signals given by a crewmember;  
(7) Stow or secure the emergency exit door so that it will not impede use of the exit;  
(8) Assess the condition of an escape slide, activate the slide, and stabilize the slide after deployment to assist others in getting off the slide;  
(9) Pass expeditiously through the emergency exit; and  
(10) Assess, select, and follow a safe path away from the emergency exit.  

(e) Each certificate holder shall include on passenger information cards, at each exit seat—  
(1) In the primary language in which emergency commands are given by the crew, the selection criteria set forth in paragraph (b) of this section, and a request that a passenger identify himself or herself to allow reseating if he or she:  
(i) Cannot meet the selection criteria set forth in paragraph (b) of this section;  

(i)
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(ii) Has a nondiscernible condition that will prevent him or her from performing the applicable functions listed in paragraph (d) of this section;
(iii) May suffer bodily harm as the result of performing one or more of those functions; or
(iv) Does not wish to perform those functions; and

(2) In each language used by the certificate holder for passenger information cards, a request that a passenger identify himself or herself to allow reseating if he or she lacks the ability to read, speak, or understand the language or the graphic form in which instructions required by this section and related to emergency evacuation are provided by the certificate holder, or the ability to understand the specified language in which crew commands will be given in an emergency.

(3) May suffer bodily harm as the result of performing one or more of those functions; or,

(4) Does not wish to perform those functions.

A certificate holder shall not require the passenger to disclose his or her reason for needing reseating.

(f) Each certificate holder shall make available for inspection by the public at all passenger loading gates and ticket counters at each airport where it conducts passenger operations, written procedures established for making determinations in regard to exit row seating.

(g) No certificate holder may allow taxi or pushback unless at least one required crewmember has verified that no exit seat is occupied by a person the crewmember determines is likely to be unable to perform the applicable functions listed in paragraph (d) of this section.

(h) Each certificate holder shall include in its passenger briefings a reference to the passenger information cards, required by paragraphs (d) and (e), the selection criteria set forth in paragraph (b), and the functions to be performed, set forth in paragraph (d) of this section.

(i) Each certificate holder shall include in its passenger briefings a request that a passenger identify himself or herself to allow reseating if he or she—

(1) Cannot meet the selection criteria set forth in paragraph (b) of this section;
(2) Has a nondiscernible condition that will prevent him or her from performing the applicable functions listed in paragraph (d) of this section;
(3) May suffer bodily harm as the result of performing one or more of those functions listed in paragraph (d) of this section; or,
(4) Does not wish to perform those functions listed in paragraph (d) of this section.

A certificate holder shall not require the passenger to disclose his or her reason for needing reseating.

(j) [Reserved]

(k) In the event a certificate holder determines in accordance with this section that it is likely that a passenger assigned to an exit seat would be unable to perform the functions listed in paragraph (d) of this section or a passenger requests a non-exit seat, the certificate holder shall expeditiously relocate the passenger to a non-exit seat.

(l) In the event of full booking in the non-exit seats and if necessary to accommodate a passenger being relocated from an exit seat, the certificate holder shall move a passenger who is willing and able to assume the evacuation functions that may be required, to an exit seat.

(m) A certificate holder may deny transportation to any passenger under this section only because—

(1) The passenger refuses to comply with instructions given by a crewmember or other authorized employee of the certificate holder implementing exit seating restrictions established in accordance with this section, or
(2) The only seat that will physically accommodate the person's handicap is an exit seat.

(n) In order to comply with this section certificate holders shall—

(1) Establish procedures that address:
(i) The criteria listed in paragraph (b) of this section;
(ii) The functions listed in paragraph (d) of this section;
(iii) The requirements for airport information, passenger information
§ 121.587 Closing and locking of flight crew compartment door.

(a) Except as provided in paragraph (b) of this section, a pilot in command of an airplane that has a lockable flight crew compartment door in accordance with §121.313 and that is carrying passengers shall ensure that the door separating the flight crew compartment from the passenger compartment is closed and locked during flight.

(b) The provisions of paragraph (a) of this section do not apply—

(1) During takeoff and landing if the crew compartment door is the means of access to a required passenger emergency exit or a floor level exit; or

(2) At any time that it is necessary to provide access to the flight crew or
§ 121.589 Carry-on baggage.

(a) No certificate holder may allow the boarding of carry-on baggage on an airplane unless each passenger’s baggage has been scanned to control the size and amount carried on board in accordance with an approved carry-on baggage program in its operations specifications. In addition, no passenger may board an airplane if his/her carry-on baggage exceeds the baggage allowance prescribed in the carry-on baggage program in the certificate holder’s operations specifications.

(b) No certificate holder may allow all passenger entry doors of an airplane to be closed in preparation for taxi or pushback unless at least one required crewmember has verified that each article of baggage is stowed in accordance with this section and §121.285(c) and (d).

(c) No certificate holder may allow an airplane to take off or land unless each article of baggage is stowed:

1. In a suitable closet or baggage or cargo stowage compartment placarded for its maximum weight and providing proper restraint for all baggage or cargo stowed within, and in a manner that does not hinder the possible use of any emergency equipment; or

2. As provided in §121.285(c) and (d); or

3. Under a passenger seat.

(d) Baggage, other than articles of loose clothing, may not be placed in an overhead rack unless that rack is equipped with approved restraining devices or doors.

(e) Each passenger must comply with instructions given by crewmembers regarding compliance with paragraphs (a), (b), (c), (d), and (g) of this section.

(f) Each passenger seat under which baggage is allowed to be stowed shall be fitted with a means to prevent articles of baggage stowed under it from sliding forward. In addition, each aisle seat shall be fitted with a means to prevent articles of baggage stowed under it from sliding sideward into the aisle under crash impacts severe enough to induce the ultimate inertia forces specified in the emergency landing condition regulations under which the airplane was type certificated.

(g) In addition to the methods of stowage in paragraph (c) of this section, flexible travel canes carried by blind individuals may be stowed—

1. Under any series of connected passenger seats in the same row, if the cane does not protrude into an aisle and if the cane is flat on the floor; or

2. Between a nonemergency exit window seat and the fuselage, if the cane is flat on the floor; or

3. Beneath any two nonemergency exit window seats, if the cane is flat on the floor; or

4. In accordance with any other method approved by the Administrator.

§ 121.590 Use of certificated land airports.

(a) Except as provided in paragraph (b) of this section or unless otherwise authorized by the Administrator, no air carrier, and no pilot being used by an air carrier may, in the conduct of operations governed by this part, operate an airplane designed for at least 31 passenger seats into a land airport in any State of the United States, the District of Columbia, or any territory or possession of the United States, unless that airport is certificated under part 139 of this chapter. However, an air carrier may designate and use as a required alternate airport for departure or destination an airport that is not certificated under part 139 of this chapter.
§ 121.599 Familiarity with weather conditions.

(a) Domestic and flag operations. No aircraft dispatcher may release a flight unless he is thoroughly familiar with reported and forecast weather conditions on the route to be flown.

(b) Supplemental operations. No pilot in command may begin a flight unless he is thoroughly familiar with reported and forecast weather conditions on the route to be flown.

§ 121.601 Aircraft dispatcher information to pilot in command: Domestic and flag operations.

(a) The aircraft dispatcher shall provide the pilot in command all available current reports or information on airport conditions and irregularities of navigation facilities that may affect the safety of the flight.

(b) Before beginning a flight, the aircraft dispatcher shall provide the pilot in command with all available weather reports and forecasts of weather phenomena that may affect the safety of flight, including adverse weather phenomena, such as clear air turbulence, thunderstorms, and low altitude wind shear, for each route to be flown and each airport to be used.

(c) During a flight, the aircraft dispatcher shall provide the pilot in command with any additional available information of meteorological conditions (including adverse weather phenomena, such as clear air turbulence, thunderstorms, and low altitude wind shear), and irregularities of facilities and services that may affect the safety of the flight.


§ 121.603 Facilities and services: Supplemental operations.

(a) Before beginning a flight, each pilot in command shall obtain all available current reports or information on airport conditions and irregularities of navigation facilities that may affect the safety of the flight.

(b) During a flight, the pilot in command shall obtain any additional available information of meteorological conditions and irregularities of facilities and services that may affect the safety of the flight.


§ 121.605 Airplane equipment.

No person may dispatch or release an airplane unless it is airworthy and is equipped as prescribed in §121.303.

§ 121.607 Communication and navigation facilities: Domestic and flag operations.

(a) Except as provided in paragraph (b) of this section for a certificate holder conducting flag operations, no person may dispatch an airplane over an approved route or route segment unless the communication and navigation facilities required by §§121.99 and 121.103 for the approval of that route or segment are in satisfactory operating condition.

(b) If, because of technical reasons or other reasons beyond the control of a certificate holder conducting flag operations, the facilities required by §§121.99 and 121.103 are not available over a route or route segment outside the United States, the certificate holder may dispatch an airplane over that route or route segment if the pilot in command and dispatcher find that communication and navigation facilities equal to those required are available and are in satisfactory operating condition.


§ 121.609 Communication and navigation facilities: Supplemental operations.

No person may release an aircraft over any route or route segment unless communication and navigation facilities equal to those required by §121.121 are in satisfactory operating condition.

§ 121.611 Dispatch or flight release under VFR.

No person may dispatch or release an aircraft for VFR operation unless the ceiling and visibility en route, as indicated by available weather reports or forecasts, or any combination thereof, are and will remain at or above applicable VFR minimums until the aircraft arrives at the airport or airports specified in the dispatch or flight release.

§ 121.613 Dispatch or flight release under IFR or over the top.

Except as provided in §121.615, no person may dispatch or release an aircraft for operations under IFR or over-the-top, unless appropriate weather reports or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the authorized
§ 121.621 Alternate airport for destination: Flag operations.

(a) No person may dispatch an airplane under IFR or over-the-top unless he lists at least one alternate airport for each destination airport in the dispatch release. When the weather conditions forecast for the destination and first alternate airport are marginal at least one additional alternate must be designated. However, no alternate airport is required if for at least 1 hour before and 1 hour after the estimated time of arrival at the destination airport the appropriate weather reports or forecasts, or any combination of them, indicate—

(1) The ceiling will be at least 2,000 feet above the airport elevation; and
(2) Visibility will be at least 3 miles.

(b) For the purposes of paragraph (a) of this section, the weather conditions at the alternate airport must meet the requirements of §121.625.

(c) No person may dispatch a flight unless he lists each required alternate airport in the dispatch release.

§ 121.623 Alternate airport for destination: IFR or over-the-top: Supplemental operations.

(a) Except as provided in paragraph (b) of this section, each person releasing an aircraft for operation under IFR or over-the-top shall list at least one alternate airport for each destination airport in the flight release.

(b) An alternate airport need not be designated for IFR or over-the-top operations where the aircraft carries enough fuel to meet the requirements of §§121.643 and 121.645 for flights outside the 48 contiguous States and the District of Columbia over routes without an available alternate airport for a particular airport of destination.

(c) For the purposes of paragraph (a) of this section, the weather requirements at the alternate airport must meet the requirements of the certificate holder's operations specifications.

(2) No person may release a flight unless he lists each required alternate airport in the flight release.


§ 121.625 Alternate airport weather minimums.

No person may list an airport as an alternate airport in the dispatch or flight release unless the appropriate weather reports or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the alternate weather minimums specified in the certificate holder's operations specifications for that airport when the flight arrives.


§ 121.627 Continuing flight in unsafe conditions.

(a) No pilot in command may allow a flight to continue toward any airport to which it has been dispatched or released if, in the opinion of the pilot in command or dispatcher (domestic and flag operations only), the flight cannot be completed safely; unless, in the opinion of the pilot in command, there is no safer procedure. In that event, continuation toward that airport is an emergency situation as set forth in §121.557.

(b) If any instrument or item of equipment required under this chapter for the particular operation becomes inoperative en route, the pilot in command shall comply with the approved procedures for such an occurrence as specified in the certificate holder's manual.


§ 121.628 Inoperable instruments and equipment.

(a) No person may take off an airplane with inoperable instruments or
equipment installed unless the following conditions are met:

(1) An approved Minimum Equipment List exists for that airplane.

(2) The certificate-holding district office has issued the certificate holder operations specifications authorizing operations in accordance with an approved Minimum Equipment List. The flight crew shall have direct access at all times prior to flight to all of the information contained in the approved Minimum Equipment List through printed or other means approved by the Administrator in the certificate holder operations specifications. An approved Minimum Equipment List, as authorized by the operations specifications, constitutes an approved change to the type design without requiring recertification.

(3) The approved Minimum Equipment List must:
   (i) Be prepared in accordance with the limitations specified in paragraph (b) of this section.
   (ii) Provide for the operation of the airplane with certain instruments and equipment in an inoperable condition.

(4) Records identifying the inoperable instruments and equipment and the information required by paragraph (a)(3)(ii) of this section must be available to the pilot.

(5) The airplane is operated under all applicable conditions and limitations contained in the Minimum Equipment List and the operations specifications authorizing use of the Minimum Equipment List.

(b) The following instruments and equipment may not be included in the Minimum Equipment List:

(1) Instruments and equipment that are either specifically or otherwise required by the airworthiness requirements under which the airplane is type certificated and which are essential for safe operations under all operating conditions.

(2) Instruments and equipment required by an airworthiness directive to be in operable condition unless the airworthiness directive provides otherwise.

(3) Instruments and equipment required for specific operations by this part.

(c) Notwithstanding paragraphs (b)(1) and (b)(3) of this section, an airplane with inoperable instruments or equipment may be operated under a special flight permit under §§ 21.197 and 21.199 of this chapter.


§ 121.629 Operation in icing conditions.

(a) No person may dispatch or release an aircraft, continue to operate an aircraft en route, or land an aircraft when in the opinion of the pilot in command or aircraft dispatcher (domestic and flag operations only), icing conditions are expected or met that might adversely affect the safety of the flight.

(b) No person may take off an aircraft when frost, ice, or snow is adhering to the wings, control surfaces, propellers, engine inlets, or other critical surfaces of the aircraft or when the takeoff would not be in compliance with paragraph (c) of this section. Takeoffs with frost under the wing in the area of the fuel tanks may be authorized by the Administrator.

(c) Except as provided in paragraph (d) of this section, no person may dispatch, release, or take off an aircraft any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft, unless the certificate holder has an approved ground deicing/anti-icing program in its operations specifications and unless the dispatch, release, and takeoff comply with that program. The approved ground deicing/anti-icing program must include at least the following items:

(1) A detailed description of—
   (i) How the certificate holder determines that conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft and that ground deicing/anti-icing operational procedures must be in effect;
   (ii) Who is responsible for deciding that ground deicing/anti-icing operational procedures must be in effect;
   (iii) The procedures for implementing ground deicing/anti-icing operational procedures;
   (iv) The specific duties and responsibilities of each operational position...
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or group responsible for getting the aircraft safely airborne while ground deicing/anti-icing operational procedures are in effect.

(2) Initial and annual recurrent ground training and testing for flight crewmembers and qualification for all other affected personnel (e.g., aircraft dispatchers, ground crews, contract personnel) concerning the specific requirements of the approved program and each person's responsibilities and duties under the approved program, specifically covering the following areas:

(i) The use of holdover times.
(ii) Aircraft deicing/anti-icing procedures, including inspection and check procedures and responsibilities.
(iii) Communications procedures.
(iv) Aircraft surface contamination (i.e., adherence of frost, ice, or snow) and critical area identification, and how contamination adversely affects aircraft performance and flight characteristics.
(v) Types and characteristics of deicing/anti-icing fluids.
(vi) Cold weather preflight inspection procedures;
(vii) Techniques for recognizing contamination on the aircraft.

(3) The certificate holder's holdover timetables and the procedures for the use of these tables by the certificate holder's personnel. Holdover time is the estimated time deicing/anti-icing fluid will prevent the formation of frost or ice and the accumulation of snow on the protected surfaces of an aircraft. Holdover time begins when the final application of deicing/anti-icing fluid commences and expires when the deicing/anti-icing fluid applied to the aircraft loses its effectiveness. The holdover times must be supported by data acceptable to the Administrator. The certificate holder's program must include procedures for flight crewmembers to increase or decrease the determined holdover time in changing conditions. The program must provide that takeoff after exceeding any maximum holdover time in the certificate holder's holdover timetable is permitted only when at least one of the following conditions exists:

(i) A pretakeoff contamination check, as defined in paragraph (c)(4) of this section, determines that the wings, control surfaces, and other critical surfaces, as defined in the certificate holder's program, are free of frost, ice, or snow.

(ii) It is otherwise determined by an alternate procedure approved by the Administrator in accordance with the certificate holder's approved program that the wings, control surfaces, and other critical surfaces, as defined in the certificate holder's program, are free of frost, ice, or snow.

(iii) The wings, control surfaces, and other critical surfaces are redeiced and a new holdover time is determined.

(4) Aircraft deicing/anti-icing procedures and responsibilities, pretakeoff check procedures and responsibilities, and pretakeoff contamination check procedures and responsibilities. A pretakeoff check is a check of the aircraft's wings or representative aircraft surfaces for frost, ice, or snow within the aircraft's holdover time. A pretakeoff contamination check is a check to make sure the wings, control surfaces, and other critical surfaces, as defined in the certificate holder's program, are free of frost, ice, and snow. It must be conducted within five minutes prior to beginning takeoff. This check must be accomplished from outside the aircraft unless the program specifies otherwise.

(d) A certificate holder may continue to operate under this section without a program as required in paragraph (c) of this section, if it includes in its operations specifications a requirement that, any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft, no aircraft will take off unless it has been checked to ensure that the wings, control surfaces, and other critical surfaces are free of frost, ice, and snow. The check must occur within five minutes prior to beginning takeoff. This check must be accomplished from outside the aircraft.

§ 121.631 Original dispatch or flight release, redispatch or amendment of dispatch or flight release.

(a) A certificate holder may specify any regular, provisional, or refueling airport, authorized for the type of aircraft, as a destination for the purpose of original dispatch or release.
(b) No person may allow a flight to continue to an airport to which it has been dispatched or released unless the weather conditions at an alternate airport that was specified in the dispatch or flight release are forecast to be at or above the alternate minimums specified in the operations specifications for that airport at the time the aircraft would arrive at the alternate airport. However, the dispatch or flight release may be amended en route to include any alternate airport that is within the fuel range of the aircraft as specified in §§121.639 through 121.647.
(c) No person may change an original destination or alternate airport that is specified in the original dispatch or flight release to another airport while the aircraft is en route unless the airport and related facilities are adequate for the operation of the aircraft; he can comply with the applicable airplane operating limitations; the airplane has been dispatched according to dispatching rules applicable to operation from an approved airport; and the weather conditions at that airport are equal to or better than the following:
   (i) Airports in the United States. The weather minimums for takeoff prescribed in part 97 of this chapter; or where minimums are not prescribed for the airport, 800-2, 900-1½, or 1,000-1.
   (ii) Airports outside the United States. The weather minimums for takeoff prescribed or approved by the government of the country in which the airport is located; or where minimums are not prescribed or approved for the airport, 800-2, 900-1½, or 1,000-1.
(d) Each person who amends a dispatch or flight release en route shall record that amendment.


§ 121.633 [Reserved]

§ 121.635 Dispatch to and from refueling or provisional airports: Domestic and flag operations.

No person may dispatch an airplane to or from a refueling or provisional airport except in accordance with the requirements of this part applicable to dispatch from regular airports and unless that airport meets the requirements of this part applicable to regular airports.

[Doc. No. 16383, 43 FR 22649, May 25, 1978]

§ 121.637 Takeoffs from unlisted and alternate airports: Domestic and flag operations.

(a) No pilot may take off an airplane from an airport that is not listed in the operations specifications unless—
   (1) The airport and related facilities are adequate for the operation of the airplane;
   (2) He can comply with the applicable airplane operating limitations;
   (3) The airplane has been dispatched according to dispatching rules applicable to operation from an approved airport; and
   (4) The weather conditions at that airport are equal to or better than the following:
      (i) Airports in the United States. The weather minimums for takeoff prescribed in part 97 of this chapter; or where minimums are not prescribed for the airport, 800-2, 900-1½, or 1,000-1.
      (ii) Airports outside the United States. The weather minimums for takeoff prescribed or approved by the government of the country in which the airport is located; or where minimums are not prescribed or approved for the airport, 800-2, 900-1½, or 1,000-1.
(b) No pilot may take off from an alternate airport unless the weather conditions are at least equal to the minimums prescribed in the certificate holder’s operations specifications for alternate airports.


§ 121.639 Fuel supply: All domestic operations.

No person may dispatch or take off an airplane unless it has enough fuel—
   (a) To fly to the airport to which it is dispatched;
   (b) Thereafter, to fly to and land at the most distant alternate airport (where required) for the airport to which dispatched; and
   (c) Thereafter, to fly for 45 minutes at normal cruising fuel consumption or, for certificate holders who are authorized to conduct day VFR operations in their operations specifications and who are operating nontransport category airplanes type certificated after December 31, 1964, to fly
§ 121.641 Fuel supply: Nonturbine and turbo-propeller-powered airplanes: Flag operations.

(a) No person may dispatch or take off a nonturbine or turbo-propeller-powered airplane unless, considering the wind and other weather conditions expected, it has enough fuel—

(1) To fly to and land at the airport to which it is dispatched;

(2) Thereafter, to fly to and land at the most distant alternate airport specified in the dispatch release; and

(3) Thereafter, to fly for 30 minutes plus 15 percent of the total time required to fly at normal cruising fuel consumption to the airports specified in paragraphs (a) (1) and (2) of this section, or to fly for 90 minutes at normal cruising fuel consumption, whichever is less.

(b) No person may dispatch a nonturbine or turbo-propeller-powered airplane to an airport for which an alternate is not specified under §121.621(a)(2), unless it has enough fuel, considering wind and other weather conditions expected, to fly to that airport and thereafter fly for three hours at normal cruising fuel consumption.


§ 121.643 Fuel supply: Nonturbine and turbo-propeller-powered airplanes: Supplemental operations.

(a) Except as provided in paragraph (b) of this section, no person may release for flight or takeoff a nonturbine or turbo-propeller-powered airplane unless, considering the wind and other weather conditions expected, it has enough fuel—

(1) To fly to and land at the airport to which it is released;

(2) Thereafter, to fly to and land at the most distant alternate airport specified in the flight release; and

(3) Thereafter, to fly for 45 minutes at normal cruising fuel consumption or, for certificate holders who are authorized to conduct day VFR operations in their operations specifications and who are operating non-transport category airplanes type certificated after December 31, 1964, to fly for 30 minutes at normal cruising fuel consumption for day VFR operations.

(b) If the airplane is released for any flight other than from one point in the contiguous United States to another point in the contiguous United States, it must carry enough fuel to meet the requirements of paragraphs (a) (1) and (2) of this section and thereafter fly for 30 minutes plus 15 percent of the total time required to fly at normal cruising fuel consumption to the airports specified in paragraphs (a) (1) and (2) of this section, or to fly for 90 minutes at normal cruising fuel consumption, whichever is less.

(c) No person may release a nonturbine or turbo-propeller-powered airplane to an airport for which an alternate is not specified under §121.623(b), unless it has enough fuel, considering wind and other weather conditions expected, to fly to that airport and thereafter to fly for three hours at normal cruising fuel consumption.

§ 121.645 Fuel supply: Turbine-engine powered airplanes, other than turbo propeller: Flag and supplemental operations.

(a) Any flag operation within the 48 contiguous United States and the District of Columbia may use the fuel requirements of §121.629.

(b) For any certificate holder conducting flag or supplemental operations outside the 48 contiguous United States and the District of Columbia, unless authorized by the Administrator in the operations specifications, no person may release for flight or takeoff a turbine-engine powered airplane (other than a turbo-propeller powered airplane) unless, considering wind and other weather conditions expected, it has enough fuel—

(1) To fly to and land at the airport to which it is released;

(2) After that, to fly for a period of 10 percent of the total time required to fly from the airport of departure to, and land at, the airport to which it was released;

(3) After that, to fly to and land at the most distant alternate airport...
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§ 121.651  Takeoff and landing weather minimums: IFR: All certificate holders.

(a) Notwithstanding any clearance from ATC, no pilot may begin a takeoff in an airplane under IFR when the weather conditions reported by the U.S. National Weather Service, a source approved by that Service, or a source approved by the Administrator, are less than those specified in—

(1) The certificate holder’s operations specifications; or

(2) Parts 91 and 97 of this chapter, if the certificate holder’s operations specifications do not specify takeoff minimums for the airport.

(b) Except as provided in paragraph (d) of this section, no pilot may continue an approach past the final approach fix, or where a final approach fix is not used, begin the final approach segment of an instrument approach procedure—

(1) At any airport, unless the U.S. National Weather Service, a source approved by that Service, or a source approved by the Administrator, issues a weather report for that airport; and

§ 121.649  Takeoff and landing weather minimums: VFR: Domestic operations.

(a) Except as provided in paragraph (b) of this section, regardless of any clearance from ATC, no pilot may takeoff or land an airplane under VFR when the reported ceiling or visibility is less than the following:

(1) For day operations—1,000-foot ceiling and one-mile visibility.

(2) For night operations—1,000-foot ceiling and two-mile visibility.

(b) Where a local surface restriction to visibility exists (e.g., smoke, dust, blowing snow or sand) the visibility for day and night operations may be reduced to 1/2 mile, if all turns after takeoff and prior to landing, and all flight beyond one mile from the airport boundary can be accomplished above or outside the area of local surface visibility restriction.

(c) The weather minimums in this section do not apply to the VFR operation of fixed-wing aircraft at any of the locations where the special weather minimums of §91.157 of this chapter are not applicable (See part 91, appendix D, section 3 of this chapter). The basic VFR weather minimums of §91.155 of this chapter apply at those locations.


§ 121.647  Factors for computing fuel required.

Each person computing fuel required for the purposes of this subpart shall consider the following:

(a) Wind and other weather conditions forecast.

(b) Anticipated traffic delays.

(c) One instrument approach and possible missed approach at destination.

(d) Any other conditions that may delay landing of the aircraft.

For the purposes of this section, required fuel is in addition to unusable fuel.
§ 121.651

(2) At airports within the United States and its territories or at U.S. military airports, unless the latest weather report for that airport issued by the U.S. National Weather Service, a source approved by that Service, or a source approved by the Administrator, reports the visibility to be equal to or more than the visibility minimums prescribed for that procedure. For the purpose of this section, the term “U.S. military airports” means airports in foreign countries where flight operations are under the control of U.S. military authority.

(c) If a pilot has begun the final approach segment of an instrument approach procedure in accordance with paragraph (b) of this section and after that receives a later weather report indicating below-minimum conditions, the pilot may continue the approach to DH or MDA. Upon reaching DH or at MDA, and at any time before the missed approach point, the pilot may continue the approach below DH or MDA and touch down if—

(1) The aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers, and where that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing;

(2) The flight visibility is not less than the visibility prescribed in the standard instrument approach procedure being used;

(3) Except for Category II or Category III approaches where any necessary visual reference requirements are specified by authorization of the Administrator, at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:

(i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable.

(ii) The threshold.

(iii) The threshold markings.

(iv) The threshold lights.

(v) The runway end identifier lights.

(vi) The visual approach slope indicator.

(vii) The touchdown zone or touchdown zone markings.

(viii) The touchdown zone lights.

(ix) The runway or runway markings.

(x) The runway lights; and

(4) When the aircraft is on a straight-in nonprecision approach procedure which incorporates a visual descent point, the aircraft has reached the visual descent point, except where the aircraft is not equipped for or capable of establishing that point, or a descent to the runway cannot be made using normal procedures or rates of descent if descent is delayed until reaching that point.

(d) A pilot may begin the final approach segment of an instrument approach procedure other than a Category II or Category III procedure at an airport when the visibility is less than the visibility minimums prescribed for that procedure if that airport is served by a operative ILS and an operative PAR, and both are used by the pilot. However, no pilot may operate an aircraft below the authorized MDA, or continue an approach below the authorized DH, unless—

(1) The aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers and where such a descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing;

(2) The flight visibility is not less than the visibility prescribed in the standard instrument approach procedure being used; and

(3) Except for Category II or Category III approaches where any necessary visual reference requirements are specified by the authorization of the Administrator, at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:

(i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable.

(ii) The threshold.
§ 121.657 Flight altitude rules.

(a) General. Notwithstanding §91.119 or any rule applicable outside the United States, no person may operate an aircraft below the minimums set forth in paragraphs (b) and (c) of this section, except when necessary for takeoff or landing, or except when, after considering the character of the terrain, the quality and quantity of meteorological services, the navigational facilities available, and other flight conditions, the Administrator
§ 121.659 Prescribes other minimums for any route or part of a route where he finds that the safe conduct of the flight requires other altitudes. Outside of the United States the minimums prescribed in this section are controlling unless higher minimums are prescribed in the certificate holder's operations specifications or by the foreign country over which the aircraft is operating.

(b) Day VFR operations. No certificate holder conducting domestic operations may operate a passenger-carrying aircraft and no certificate holder conducting flag or supplemental operations may operate any aircraft under VFR during the day at an altitude less than 1,000 feet above the surface or less than 1,000 feet from any mountain, hill, or other obstruction to flight.

(c) Night VFR, IFR, and over-the-top operations. No person may operate an aircraft under IFR including over-the-top or at night under VFR at an altitude less than 1,000 feet above the highest obstacle within a horizontal distance of five miles from the center of the intended course, or, in designated mountainous areas, less than 2,000 feet above the highest obstacle within a horizontal distance of five miles from the center of the intended course.

(d) Day over-the-top operations below minimum en route altitudes. A person may conduct day over-the-top operations in an airplane at flight altitudes lower than the minimum en route IFR altitudes if—

(1) The operation is conducted at least 1,000 feet above the top of lower broken or overcast cloud cover;
(2) The top of the lower cloud cover is generally uniform and level;
(3) Flight visibility is at least five miles; and
(4) The base of any higher broken or overcast cloud cover is generally uniform and level and is at least 1,000 feet above the minimum en route IFR altitude for that route segment.

§ 121.659 Initial approach altitude: Domestic and supplemental operations.

(a) Except as provided in paragraph (b) of this section, when making an initial approach to a radio navigation facility under IFR, no person may descend an aircraft below the pertinent minimum altitude for initial approach (as specified in the instrument approach procedure for that facility) until his arrival over that facility has been definitely established.

(b) When making an initial approach on a flight being conducted under §121.657(d), no pilot may commence an instrument approach until his arrival over the radio facility has definitely been established. In making an instrument approach under these circumstances no person may descend an aircraft lower than 1,000 feet above the top of the lower cloud or the minimum altitude determined by the Administrator for that part of the IFR approach, whichever is lower.

§ 121.661 Initial approach altitude: Flag operations.

When making an initial approach to a radio navigation facility under IFR, no person may descend below the pertinent minimum altitude for initial approach (as specified in the instrument approach procedure for that facility) until his arrival over that facility has been definitely established.

§ 121.663 Responsibility for dispatch release: Domestic and flag operations.

Each certificate holder conducting domestic or flag operations shall prepare a dispatch release for each flight between specified points, based on information furnished by an authorized aircraft dispatcher. The pilot in command and an authorized aircraft dispatcher shall sign the release only if they both believe that the flight can be made with safety. The aircraft dispatcher may delegate authority to sign a release for a particular flight, but he may not delegate his authority to dispatch.
§ 121.665 Load manifest.
Each certificate holder is responsible for the preparation and accuracy of a load manifest form before each takeoff. The form must be prepared and signed for each flight by employees of the certificate holder who have the duty of supervising the loading of aircraft and preparing the load manifest forms or by other qualified persons authorized by the certificate holder.

§ 121.667 Flight plan: VFR and IFR: Supplemental operations.
(a) No person may take off an aircraft unless the pilot in command has filed a flight plan, containing the appropriate information required by part 91, with the nearest FAA communication station or appropriate military station or, when operating outside the United States, with other appropriate authority. However, if communications facilities are not readily available, the pilot in command shall file the flight plan as soon as practicable after the aircraft is airborne. A flight plan must continue in effect for all parts of the flight.

(b) When flights are operated into military airports, the arrival or completion notice required by §§91.153 and 91.169 may be filed with the appropriate airport control tower or aeronautical communication facility used for that airport.

(1) Maintain current records of each crewmember and each aircraft dispatcher (domestic and flag operations only) that show whether the crewmember or aircraft dispatcher complies with the applicable sections of this chapter, including, but not limited to, proficiency and route checks, airplane and route qualifications, training, any required physical examinations, flight, duty, and rest time records; and
(2) Record each action taken concerning the release from employment or physical or professional disqualification of any flight crewmember or aircraft dispatcher (domestic and flag operations only) and keep the record for at least six months thereafter.

(b) Each certificate holder conducting supplemental operations shall maintain the records required by paragraph (a) of this section at its principal base of operations, or at another location used by it and approved by the Administrator.

(c) Computer record systems approved by the Administrator may be used in complying with the requirements of paragraph (a) of this section.

§ 121.685 Aircraft record: Domestic and flag operations.
Each certificate holder conducting domestic or flag operations shall maintain a current list of each aircraft that it operates in scheduled air transportation and shall send a copy of the record and each change to the certificate-holding district office. Airplanes of another certificate holder operated under an interchange agreement may be incorporated by reference.

§ 121.687 Dispatch release: Flag and domestic operations.
(a) The dispatch release may be in any form but must contain at least the following information concerning each flight:
(1) Identification number of the aircraft.
(2) Trip number.
(3) Departure airport, intermediate stops, destination airports, and alternate airports.
(4) A statement of the type of operation (e.g., IFR, VFR).
(5) Minimum fuel supply.
§ 121.689 (b) The dispatch release must contain, or have attached to it, weather reports, available weather forecasts, or a combination thereof, for the destination airport, intermediate stops, and alternate airports, that are the latest available at the time the release is signed by the pilot in command and dispatcher. It may include any additional available weather reports or forecasts that the pilot in command or the aircraft dispatcher considers necessary or desirable.

§ 121.689 Flight release form: Supplemental operations.

(a) Except as provided in paragraph (c) of this section, the flight release may be in any form but must contain at least the following information concerning each flight:

(1) Company or organization name.
(2) Make, model, and registration number of the aircraft being used.
(3) Flight or trip number, and date of flight.
(4) Name of each flight crewmember, flight attendant, and pilot designated as pilot in command.
(5) Departure airport, destination airports, alternate airports, and route.
(6) Minimum fuel supply (in gallons or pounds).
(7) A statement of the type of operation (e.g., IFR, VFR).

(b) The aircraft flight release must contain, or have attached to it, weather reports, available weather forecasts, or a combination thereof, for the destination airport, and alternate airports, that are the latest available at the time the release is signed. It may include any additional available weather reports or forecasts that the pilot in command considers necessary or desirable.

(c) Each certificate holder conducting domestic or flag operations under the rules of this part applicable to supplemental operations shall comply with the dispatch or flight release forms required for scheduled operations under this subpart.

§ 121.703 Mechanical reliability reports.

(a) Each certificate holder shall report the occurrence or detection of each failure, malfunction, or defect concerning—

(1) Fires during flight and whether the related fire-warning system functioned properly;
(2) Fires during flight not protected by a related fire-warning system;
(3) False fire warning during flight;
(4) An engine exhaust system that causes damage during flight to the engine, adjacent structure, equipment, or components;
(5) An aircraft component that causes accumulation or circulation of smoke, vapor, or toxic or noxious fumes in the crew compartment or passenger cabin during flight;
(6) Engine shutdown during flight because of flameout;

(2) A copy of the dispatch release; and
(3) A copy of the flight plan.

(b) The certificate holder shall keep copies of the records required in this section for at least three months.


§ 121.697 Disposition of load manifest, flight release, and flight plans: Supplemental operations.

(a) The pilot in command of an airplane shall carry in the airplane to its destination the original or a signed copy of the—

(1) Load manifest;
(2) Flight release;
(3) Airworthiness release;
(4) Pilot route certification; and
(5) Flight plan.

(b) If a flight originates at the certificate holder’s principal base of operations, it shall retain at that base a signed copy of each document listed in paragraph (a) of this section.

(c) Except as provided in paragraph (d) of this section, if a flight originates at a place other than the certificate holder’s principal base of operations, the pilot in command (or another person not aboard the airplane who is authorized by the certificate holder) shall, before or immediately after departure of the flight, mail signed copies of the documents listed in paragraph (a) of this section, to the principal base of operations.

(d) If a flight originates at a place other than the certificate holder’s principal base of operations, and there is at that place a person to manage the flight departure for the certificate holder who does not himself or herself depart on the airplane, signed copies of the documents listed in paragraph (a) of this section may be retained at that place for not more than 30 days before being sent to the certificate holder’s principal base of operations. However, the documents for a particular flight need not be further retained at that place or be sent to the principal base of operations, if the originals or other copies of them have been previously returned to the principal base of operations.

(e) The certificate holder conducting supplemental operations shall:

(1) Identify in its operations manual the person having custody of the copies of documents retained in accordance with paragraph (d) of this section; and
(2) Retain at its principal base of operations either an original or a copy of the records required by this section for at least three months.


§§ 121.698-121.699 [Reserved]

§ 121.701 Maintenance log: Aircraft.

(a) Each person who takes action in the case of a reported or observed failure or malfunction of an airframe, engine, propeller, or appliance that is critical to the safety of flight shall, or have made, a record of that action in the airplane’s maintenance log.

(b) Each certificate holder shall have an approved procedure for keeping adequate copies of the record required in paragraph (a) of this section in the airplane in a place readily accessible to each flight crewmember and shall put that procedure in the certificate holder’s manual.

§ 121.703 Mechanical reliability reports.

(a) Each certificate holder shall report the occurrence or detection of each failure, malfunction, or defect concerning—

(1) Fires during flight and whether the related fire-warning system functioned properly;
(2) Fires during flight not protected by a related fire-warning system;
(3) False fire warning during flight;
(4) An engine exhaust system that causes damage during flight to the engine, adjacent structure, equipment, or components;
(5) An aircraft component that causes accumulation or circulation of smoke, vapor, or toxic or noxious fumes in the crew compartment or passenger cabin during flight;
(6) Engine shutdown during flight because of flameout;
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(7) Engine shutdown during flight when external damage to the engine or airplane structure occurs;
(8) Engine shutdown during flight due to foreign object ingestion or icing;
(9) Engine shutdown during flight of more than one engine;
(10) A propeller feathering system or ability of the system to control over-speed during flight;
(11) A fuel or fuel-dumping system that affects fuel flow or causes hazardous leakage during flight;
(12) An unwanted landing gear extension or retraction, or an unwanted opening or closing of landing gear doors during flight;
(13) Brake system components that result in loss of brake actuating force when the airplane is in motion on the ground;
(14) Aircraft structure that requires major repair;
(15) Cracks, permanent deformation, or corrosion of aircraft structures, if more than the maximum acceptable to the manufacturer or the FAA;
(16) Aircraft components or systems that result in taking emergency actions during flight (except action to shut down an engine); and
(17) Emergency evacuation systems or components including all exit doors, passenger emergency evacuation lighting systems, or evacuation equipment that are found defective, or that fail to perform the intended functions during an actual emergency or during training, testing, maintenance, demonstrations, or inadvertent deployments.

(b) For the purpose of this section during flight means the period from the moment the aircraft leaves the surface of the earth on takeoff until it touches down on landing.

(c) In addition to the reports required by paragraph (a) of this section, each certificate holder shall report any other failure, malfunction, or defect in an aircraft that occurs or is detected at any time, if, in its opinion, that failure, malfunction, or defect has endangered or may endanger the safe operation of an aircraft used by it.

(d) Each certificate holder shall send each report required by this section, in writing, covering each 24-hour period beginning at 0900 local time of each day and ending at 0900 local time on the next day, to the certificate-holding district office. Each report of occurrences during a 24-hour period must be mailed or delivered to that office within the next 72 hours. However, a report that is due on Saturday or Sunday may be mailed or delivered on the following Monday, and one that is due on a holiday may be mailed or delivered on the next work day.

(e) The certificate holder shall transmit the reports required by this section in a manner and on a form that is convenient to its system of communication and procedure, and shall include in the first daily report as much of the following as is available:

(1) Type and identification number of the aircraft.
(2) The name of the operator.
(3) The date, flight number, and stage during which the incident occurred (e.g., preflight, takeoff, climb, cruise, descent landing, and inspection).
(4) The emergency procedure effected (e.g., unscheduled landing and emergency descent).
(5) The nature of the failure, malfunction, or defect.
(6) Identification of the part and system involved, including available information pertaining to type designation of the major component and time since overhaul.
(7) Apparent cause of the failure, malfunction, or defect (e.g., wear, crack, design deficiency, or personnel error).
(8) Whether the part was repaired, replaced, sent to the manufacturer, or other action taken.
(9) Whether the aircraft was grounded.
(10) Other pertinent information necessary for more complete identification, determination of seriousness, or corrective action.

(f) A certificate holder that is also the holder of a Type Certificate (including a Supplemental Type Certificate), a Parts Manufacturer Approval, or a Technical Standard Order Authorization, or that is the licensee of a type certificate holder, need not report a failure, malfunction, or defect under this section if the failure, malfunction, or defect has been reported to it under
§ 121.709 Airworthiness release or aircraft log entry.

(a) No certificate holder may operate an aircraft after maintenance, preventive maintenance or alterations are performed on the aircraft unless the certificate holder, or the person with whom the certificate holder arranges for the performance of the maintenance, preventive maintenance, or alterations, prepares or causes to be prepared—

(1) An airworthiness release; or

(2) An appropriate entry in the aircraft log.

(b) The airworthiness release or log entry required by paragraph (a) of this section must—

(1) Be prepared in accordance with the procedures set forth in the certificate holder’s manual;

(2) Include a certification that—

(i) The work was performed in accordance with the requirements of the certificate holder’s manual;

(ii) All items required to be inspected were inspected by an authorized person who determined that the work was satisfactorily completed;

(iii) No known condition exists that would make the airplane unairworthy; and

(iv) So far as the work performed is concerned, the aircraft is in condition for safe operation; and

(3) Be signed by an authorized certificated mechanic or repairman except that a certificated repairman may sign the release or entry only for the work for which he is employed and certificated.

Notwithstanding paragraph (b)(3) of this section, after maintenance, preventive maintenance, or alterations performed by a repair station certificated under the provisions of subpart C of part 145, the airworthiness release or log entry required by paragraph (a) of
§ 121.711 Communication records: Domestic and flag operations.

Each certificate holder conducting domestic or flag operations shall record each en route radio contact between the certificate holder and its pilots and shall keep that record for at least 30 days.

[Doc. No. 28154, 61 FR 2616, Jan. 26, 1996]

§ 121.713 Retention of contracts and amendments: Commercial operators who conduct intrastate operations for compensation or hire.

(a) Each commercial operator who conducts intrastate operations for compensation or hire shall keep a copy of each written contract under which it provides services as a commercial operator for a period of at least 1 year after the date of execution of the contract. In the case of an oral contract, it shall keep a memorandum stating its elements, and of any amendments to it, for a period of at least one year after the execution of that contract or change.

(b) Each commercial operator who conducts intrastate operations for compensation or hire shall submit a financial report for the first 6 months of each fiscal year and another financial report for each complete fiscal year. If that person’s operating certificate is suspended for more than 29 days, that person shall submit a financial report as of the last day of the month in which the suspension is terminated. The report required to be submitted by this section shall be submitted within 60 days of the last day of the period covered by the report and must include—

(1) A balance sheet that shows assets, liabilities, and net worth on the last day of the reporting period;

(2) The information required by §119.36 (e)(2), (e)(7), and (e)(8) of this chapter;

(3) An itemization of claims in litigation against the applicant, if any, as of the last day of the period covered by the report;

(4) A profit and loss statement with the separation of items relating to the applicant’s commercial operator activities from his other business activities, if any; and

(5) A list of each contract that gave rise to operating income on the profit and loss statement, including the names and addresses of the contracting parties and the nature, scope, date, and duration of each contract.

First-Aid Kits

Approved first-aid kits required by §121.309 must meet the following specifications and requirements:

(1) Each first-aid kit must be dust and moisture proof, and contain only materials that either meet Federal Specification GG-K-391a, as revised, or are approved.

(2) Required first-aid kits must be distributed as evenly as practicable throughout the aircraft and be readily accessible to the cabin flight attendants.

(3) The minimum number of first-aid kits required is set forth in the following table:

<table>
<thead>
<tr>
<th>No. of passenger seats</th>
<th>No. of first-aid kits</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50</td>
<td>1</td>
</tr>
<tr>
<td>51-150</td>
<td>2</td>
</tr>
<tr>
<td>151-250</td>
<td>3</td>
</tr>
<tr>
<td>More than 250</td>
<td>4</td>
</tr>
</tbody>
</table>

(4) Except as provided in paragraph (5), each first-aid kit must contain at least the following or other approved contents:

- Adhesive bandage compresses, 1-inch
- Antiseptic swabs
- Ammonia inhalants
- Bandage compresses, 4-inch
- Triangular bandage compresses, 40-inch
- Arm splint, noninflatable
- Leg splint, noninflatable
- Roller bandage, 4-inch
- Adhesive tape, 1-inch standard roll
- Bedding scissors

(5) Arm and leg splints which do not fit within a first-aid kit may be stowed in a readily accessible location that is as near as practicable to the kit.

Emergency Medical Kits

The approved emergency medical kit required by §121.309 for passenger flights must meet the following specifications and requirements:

(1) Approved emergency medical equipment shall be stored securely so as to keep it free from dust, moisture, and damaging temperatures.

(2) One approved emergency medical kit shall be provided for each aircraft during each passenger flight and shall be located so as to be readily accessible to crewmembers.

(3) Except as provided in paragraph (4) of this appendix, the approved emergency medical kit must contain, as a minimum, the following appropriately maintained contents in the specified quantities:

<table>
<thead>
<tr>
<th>Contents</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sphygmomanometer</td>
<td>1</td>
</tr>
<tr>
<td>Stethoscope</td>
<td>1</td>
</tr>
<tr>
<td>Airways, oropharyngeal (3 sizes)</td>
<td>3</td>
</tr>
<tr>
<td>Syringes (sizes necessary to administer required drugs)</td>
<td>4</td>
</tr>
<tr>
<td>Needles (sizes necessary to administer required drugs)</td>
<td>6</td>
</tr>
<tr>
<td>50% Dextrose injection, 50cc</td>
<td>1</td>
</tr>
<tr>
<td>Epinephrine 1:1000, single dose ampule or equivalent</td>
<td>2</td>
</tr>
<tr>
<td>Diphenhydramine HCl injection, single dose ampule or equivalent</td>
<td>2</td>
</tr>
<tr>
<td>Nitroglycerin tablets</td>
<td>10</td>
</tr>
<tr>
<td>Basic instructions for use of the drugs in the kit</td>
<td>1</td>
</tr>
<tr>
<td>Protective latex gloves or equivalent</td>
<td>11</td>
</tr>
</tbody>
</table>

1 Par.

(4) Until June 3, 1996, required protective latex gloves or equivalent nonpermeable gloves may be placed in the emergency medical kit or in a location that is readily accessible to crewmembers.

APPENDIX B TO PART 121—AIRPLANE FLIGHT RECORDER SPECIFICATION

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy sensor input to DFDR readout</th>
<th>Sampling interval (per second)</th>
<th>Resolution (per second)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (GMT or Frame Counter) (range 0 to 4095, sampled 1 per frame)</td>
<td>24 Hrs</td>
<td>±0.125% Per Hour</td>
<td>0.25 (1 per 4 seconds)</td>
<td>1 sec.</td>
</tr>
<tr>
<td>Altitude</td>
<td>-1,000 ft to max certificated altitude of aircraft</td>
<td>±100 to ±700 ft (See Table 1, TSO-C51a)</td>
<td>1</td>
<td>5 to 35</td>
</tr>
<tr>
<td>Airspeed</td>
<td>50 KIAS to V_{\text{min}} and V_{\text{max}}</td>
<td>±5% to ±3%</td>
<td>1</td>
<td>1 kt.</td>
</tr>
<tr>
<td>Heading</td>
<td>360°</td>
<td>±2°</td>
<td>1</td>
<td>0.5°</td>
</tr>
<tr>
<td>Normal Acceleration (Vertical)</td>
<td>-3g to +6g</td>
<td>±1% of max range excluding datum error of ±5%</td>
<td>8</td>
<td>0.01g.</td>
</tr>
<tr>
<td>Pitch Attitude</td>
<td>±75°</td>
<td>±2°</td>
<td>1</td>
<td>0.5°</td>
</tr>
<tr>
<td>Roll Attitude</td>
<td>±180°</td>
<td>±2°</td>
<td>1</td>
<td>0.5°</td>
</tr>
<tr>
<td>Radio Transmitter Keying</td>
<td>On-Off (Discrete)</td>
<td>±2°</td>
<td>1 (per engine)</td>
<td>0.2°</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy sensor input to DFDR readout</th>
<th>Sampling interval (per second)</th>
<th>Resolution readout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trailing Edge Flap or Cockpit Control Selection</td>
<td>Full Range or Each Discrete Position</td>
<td>±3° or as Pilot’s Indicator</td>
<td>0.5</td>
<td>0.5%</td>
</tr>
<tr>
<td>Leading Edge Flap or Cockpit Control Selection</td>
<td>Full Range or Each Discrete Position</td>
<td>±3° or as Pilot’s Indicator</td>
<td>0.5</td>
<td>0.5%</td>
</tr>
<tr>
<td>Thrust Reverser Position</td>
<td>Stowed, In Transit, and Reverse (Discrete)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Spoiler Position</td>
<td>Full Range or Each Discrete Position</td>
<td>±2° Unless Higher Accuracy Required</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td>Marker Beacon Passage</td>
<td>Discrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autopilot Engagement</td>
<td>Discrete</td>
<td>±1.5% max range excluding datum error of ±5%</td>
<td>4</td>
<td>0.01g</td>
</tr>
<tr>
<td>Longitudinal Acceleration</td>
<td>±1g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pilot Input and/or Surface Position—Primary Controls (Pitch, Roll, Yaw)</td>
<td>Full Range</td>
<td>±2° Unless Higher Accuracy Required</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td>Lateral Acceleration</td>
<td>±1g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pitch Trim Position</td>
<td>Full Range</td>
<td>±3% Unless Higher Accuracy Required</td>
<td>1</td>
<td>0.3%</td>
</tr>
<tr>
<td>Glide Slope Deviation</td>
<td>±400 Microamps</td>
<td>1%</td>
<td>1</td>
<td>0.3%</td>
</tr>
<tr>
<td>Localizer Deviation</td>
<td>±400 Microamps</td>
<td>1%</td>
<td>1</td>
<td>0.3%</td>
</tr>
<tr>
<td>AFCS Mode and Engagement Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio Altitude</td>
<td>−20 ft to 2,500 ft</td>
<td>±2 ft or ±3% Whichever is Greater Below 500 Ft and ±5% Above 500 Ft</td>
<td>1</td>
<td>1 ft ± 5% above 500 ft</td>
</tr>
<tr>
<td>Master Warning</td>
<td>Discrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main Gear Squat Switch Status</td>
<td>Discrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angle of Attack (if recorded rectly)</td>
<td>As installed</td>
<td>As installed</td>
<td>2</td>
<td>0.3%</td>
</tr>
<tr>
<td>Outside Air Temperature or Total Air Temperature</td>
<td>−50° C to +90° C</td>
<td>±2° c</td>
<td>0.5</td>
<td>0.3° c</td>
</tr>
<tr>
<td>Hydraulics, Each System Low Pressure</td>
<td>Discrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundspeed</td>
<td>As installed</td>
<td>Most Accurate Systems Installed (IMS Equipped Aircraft Only)</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td>Drift Angle</td>
<td>When available, As installed</td>
<td>As installed</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Wind Speed and Direction</td>
<td>When available, As installed</td>
<td>As installed</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Latitude and Longitude</td>
<td>When available, As installed</td>
<td>As installed</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Brake pressure/Brake pedal position</td>
<td>As installed</td>
<td>As installed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Additional engine parameters:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPR</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>N1</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>N2</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>N3</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>Throttle Lever Position</td>
<td>EGt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Flow</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>TCAS:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity level (as selected by crew)</td>
<td>As installed</td>
<td>As installed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GPWS (ground proximity warning system)</td>
<td>Discrete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landing gear or gear selector position</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DME 1 and 2 Distance</td>
<td>0–200 NM</td>
<td>As installed</td>
<td>0.25 (1 per 4 seconds)</td>
<td>1 mi</td>
</tr>
<tr>
<td>Nav 1 and 2 Frequency Selection</td>
<td>Full range</td>
<td>As installed</td>
<td>0.25</td>
<td></td>
</tr>
</tbody>
</table>

1. When altitude rate is recorded, Altitude rate must have sufficient resolution and sampling to permit the derivation of altitude to 5 feet.

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APPENDIX C TO PART 121—C-46 NONTRANSPORT CATEGORY AIRPLANES

Cargo Operations

1. Required engines. (a) Except as provided in paragraph (b) of this section, the engines specified in subparagraphs (1) or (2) of this section must be installed in C-46 nontransport category airplanes operated at gross weights exceeding 45,000 pounds:

(i) Pratt and Whitney R-2800-51-M1 or R-2800-75-M1 engines (engines converted from basic model R-2800-51 or R-2800-75 in accordance with FAA approved data) that—

(A) Conform to Engine Specification SE-8;

(B) Comply with the applicable portions of the operator’s manual;

(C) Are equipped with high capacity oil pump drive gears in accordance with FAA approved data.

(ii) Other engines found acceptable by the FAA Regional Flight Standards Division having type certification responsibility for the C-46 airplane.

(b) Upon application by an operator conducting cargo operations with nontransport category C-46 airplanes between points within the State of Alaska, the appropriate FAA Flight Standards District Office, Alaskan Region, may authorize the operation of such airplanes, between points within the State of Alaska; without compliance with paragraph (a) of this section if the operator shows that, in its area of operation, installation of the modified engines is not necessary to provide adequate cooling for single-engine operations. Such authorization and any conditions or limitations therefor is made a part of the Operations Specifications of the operator.

2. Minimum acceptable means of complying with the special airworthiness requirements. Unless otherwise authorized under §121.213, the data set forth in sections 3 through 34 of this appendix, as correlated to the C-46 nontransport category airplane, is the minimum means of compliance with the special airworthiness requirements of §§121.215 through 121.281.

3. Susceptibility of material to fire. [Deleted as unnecessary]

4. Cabin interiors. C-46 crew compartments must meet all the requirements of §121.215, and, as required in §121.221, the door between the crew compartment and main cabin (cargo) compartment must be flame resistant.

5. Internal doors. Internal doors, including the crew to main cabin door, must meet all the requirements of §121.217.

6. Ventilation. Standard C-46 crew compartments meet the ventilation requirements of §121.219 if a means of ventilation for controlling the flow of air is available between the crew compartment and main cabin. The ventilation requirement may be met by use of a door between the crew compartment and main cabin. The door need not have louvers installed; however, if louvers are installed, they must be controllable.

7. Fire precautions. Compliance is required with all the provisions of §121.221.

(a) In establishing compliance with this section, the C-46 main cabin is considered as a Class A compartment if—

(i) The operator utilizes a standard system of cargo loading and tiedown that allows easy access in flight to any cargo in such compartment, and, such system is included in the appropriate portion of the operator’s manual; and

(ii) A cargo barrier is installed in the forward end of the main cabin cargo compartment. The barrier must—

(A) Establish the most forward location beyond which cargo cannot be carried;

(B) Protect the components and systems of the airplane that are essential to its safe operation from cargo damage; and

(C) Permit easy access, in flight, to cargo in the main cabin cargo compartment.

The barrier may be a cargo net or a network of steel cables or other means acceptable to the Administrator which would provide equivalent protection to that of a cargo net. The barrier need not meet crash load requirements of FAR §25.561; however, it must be attached to the cargo retention fittings and provide the degree of cargo retention that is required by the operators’ standard system of cargo loading and tiedown.

(b) C-46 forward and aft baggage compartments must meet, as a minimum, Class B requirements of this section or be placarded in a manner to preclude their use as cargo or baggage compartments.

8. Proof of compliance. The demonstration of compliance required by §121.223 is not required for C-46 airplanes in which—

(a) The main cabin conforms to Class A cargo compartment requirements of §121.219; and

(b) Cargo operations, if conducted in accordance with the requirements of this section, are conducted in the manner specified in paragraph (a) of this section.
(2) Forward and aft baggage compartments conform to Class B requirements of §121.221, or are placarded to preclude their use as cargo or baggage compartments.

9. Engine accessory section diaphragm. C-46 engine nacelles which conform to the C-46 transport category requirements meet the requirements of §121.249.

10. Engine accessory section diaphragm. C-46 engine nacelles which conform to the C-46 transport category requirements meet the requirements of §121.251. As provided for in that section, a means of equivalent protection which does not require provision of a diaphragm to isolate the engine power section and exhaust system from the engine accessory compartment is the designation of the entire engine compartment forward of and including the firewall as a designated fire zone, and the installation of adequate fire detection and fire extinguishing systems which meet the requirements of §§121.263 and §121.273, respectively, in such zone.

11. Powerplant fire protection. C-46 engine compartments and combustion heater compartments are considered as designated fire zones within the meaning of §121.253.

12. Oil valves. C-46 oil shutoff valves must conform to the requirements of §121.239. In addition, C-46 airplanes using Hamilton Standard propellers must provide, by use of stand pipes in the engine oil tanks or other approved means, a positive source of oil for feathering each propeller.

13. Oil system drains. The standard C-46 "Y" drains installed in the main oil inlet line for each engine meet the requirements of §121.241.

14. Engine breather line. The standard C-46 engine breather line installation meets the requirements of §121.243 if the lower breather lines actually extend to the trailing edge of the oil cooler air exit duct.

15. Firewalls and firewall construction. Compliance is required with all the provisions of §§121.245 and 121.247. The following requirements must be met in showing compliance with these sections:

(a) Engine compartment. The engine firewalls of the C-46 airplane must—

(1) Conform to type design, and all applicable airworthiness directives;

(2) Be constructed of stainless steel or approved equivalent; and

(3) Have fireproof shields over the fairleads used for the engine control cables that pass through each firewall.

(b) Combustion heater compartment. C-46 airplanes must have a combustion heater fire extinguishing system which complies with AD-49-18-1 or an FAA approved equivalent.

16. Cowling. Standard C-46 engine cowling (cowling of aluminum construction employing stainless steel exhaust shrouds) which conforms to the type design and cowling configurations which conform to the C-46 transport category requirements meet the requirements of §121.249.
not be installed. In complying with paragraph (5) of AD−49−18−1, a fail-safe electric fuel shutoff valve may be used in lieu of the manually operated valve.

23. Lines and fittings. Ð (a) Engine compartment. C−46 engine compartments which comply with all applicable airworthiness directives, including AD−62−10−2, by using FAA approved fire-resistant lines, hoses, and couplings, and engine compartments which meet the C−46 transport category requirements, meet the requirements of §121.259 if they conform to AD−62−10−2 or FAA approved equivalent.

(b) Combustion heater compartments. All lines, hoses, and fittings, and couplings which carry fuel to the heaters and heater compartments, must be of FAA approved fire-resistant construction.

24. Vent and drain lines.—(a) Engine compartment. C−46 engine compartments must meet the requirements of §121.261 if they conform to AD−49−18−1 or FAA approved equivalent; and (b) Drain lines from supercharger case, engine-driven fuel pump, and engine-driven hydraulic pump reach into the scupper drain located in the lower cowling segment.

25. Fire-extinguishing system. (a) To meet the requirements of §121.263, C−46 airplanes must have installed fire extinguishing systems to serve all designated fire zones. The fire-extinguishing systems, the quantity of extinguishing agent, and the rate of discharge shall be such as to provide a minimum of one adequate discharge for each designated fire zone. Compliance with this provision requires the installation of a separate fire extinguisher for each engine compartment. Insofar as the engine compartment is concerned, the system shall be capable of protecting the entire compartment against the various types of fires likely to occur in the compartment.

(b) Fire-extinguishing systems which conform to the C−46 transport category requirements meet the requirements set forth in paragraph (a). Furthermore, fire-extinguishing systems for combustion heater compartments which conform to the requirements of AD−49−18−1 or an FAA approved equivalent also meet the requirements in paragraph (a).

In addition, a fire-extinguishing system for C−46 airplanes must meet the adequacy requirements set forth in paragraph (a) if it provides the same or equivalent protection to that demonstrated by the CAA in tests conducted in 1941 and 1942, using a CW−20 type engine nacelle (without diaphragm). These tests were conducted at the Bureau of Standards facilities in Washington, DC, and copies of the test reports are available through the FAA Regional Engineering Offices. In this connection, the flow rates and distribution of extinguishing agent substantiated in American Airmotive Report No. 128−52−d, FAA approved February 9, 1963, provides protection equivalent to that demonstrated by the CAA in the CW−20 tests. In evaluating any C−46 fire-extinguishing system with respect to the aforementioned CW−20 tests, the Administration would require data in a narrative form, utilizing drawings or photographs to show at least the following:

Installation of containers; installation and routing of plumbing; type, number, and location of outlets or nozzles; type, total volume, and distribution of extinguishing agent; length of time required for discharging; means for thermal relief, including type and location of discharge indicators; means of discharging, e.g., mechanical cutterheads, electric cartridge, or other method; and whether a one- or two-shot system is used; and if the latter is used, means of cross-feeding or otherwise selecting distribution of extinguishing agent; and types of materials used in makeup of plumbing.

High rate discharge (HRD) systems using agents such as bromotrifluoromethane, dibrododifluoromethane, and chlorobromomethane (CB), may also meet the requirements of paragraph (a).

26. Fire-extinguishing agents. Extinguishing agent container pressure relief, Extinguishing agent container compartment temperatures, and Fire-extinguishing system materials. No change from the requirements of §§121.265 through 121.271.

27. Fire-detector system. Compliance with the requirements of §121.273 requires that C−46 fire detector systems conform to: (a) AD−62−10−2 or FAA approved equivalent for engine compartments; and (b) AD−49−18−1 or FAA approved equivalent for combustion heater compartments.

28. Fire detectors. No change from the requirements of §121.275.

29. Protection of other airplane components against fire. To meet the requirements of §121.277, C−46 airplanes must—

(a) Conform to the type design and all applicable airworthiness directives; and (b) Be modified or have operational procedures established to provide additional fire protection for the wheel well door aft of each engine compartment. Modifications may consist of improvements in sealing of the main landing gear wheel well doors. An operational procedure which is acceptable to the Agency is one requiring the landing gear control to be placed in the up position in case of in-flight engine fire. In accordance with §121.315, such procedure must be set forth in the emergency portion of the operator's emergency checklist pertaining to in-flight engine fire.

30. Control of engine rotation. C−46 propeller feathering systems which conform to the
type design and all applicable airworthiness directives meet the requirements of §121.279.

31. Fuel system independence. C-46 fuel systems which conform to the type design and all applicable airworthiness directives meet the requirements of §121.281.

32. Induction system ice prevention. The C-46 carburetor anti-icing system which conforms to the type design and all applicable airworthiness directives meets the requirements of §121.283.

33. Carriage of cargo in passenger compartments. Section 121.285 is not applicable to nontransport category C-46 cargo airplanes.

34. Carriage of cargo in cargo compartments. A standard length cargo loading and tiedown arrangement set forth in the operator’s manual and found acceptable to the Administrator must be used in complying with §121.207.

35. Performance data. Performance data on Curtiss model C-46 airplane certified for maximum weight of 45,000 and 48,000 pounds for cargo-only operations.

The following performance limitation data, applicable to the Curtiss model C-46 airplane for cargo-only operation, must be used in determining compliance with §§121.199 through 121.205. These data are presented in the tables and figures of this appendix.

**Table 1—Takeoff Limitations**

(a) Curtiss C-46 certificated for maximum weight of 45,000 pounds.

(1) Effective length of runway required when effective length is determined in accordance with §121.171 (distance to accelerate to 93 knots TIAS and stop, with zero wind and zero gradient). (Factor=1.00)

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>Airplane weight in pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>39,000</td>
</tr>
<tr>
<td>S.L.</td>
<td>4,110</td>
</tr>
<tr>
<td>1,000</td>
<td>4,250</td>
</tr>
<tr>
<td>2,000</td>
<td>4,400</td>
</tr>
<tr>
<td>3,000</td>
<td>4,500</td>
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<tr>
<td>4,000</td>
<td>4,650</td>
</tr>
<tr>
<td>5,000</td>
<td>4,910</td>
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<tr>
<td>6,000</td>
<td>5,160</td>
</tr>
<tr>
<td>7,000</td>
<td>5,420</td>
</tr>
<tr>
<td>8,000</td>
<td>5,680</td>
</tr>
<tr>
<td>9,000</td>
<td>5,940</td>
</tr>
</tbody>
</table>

(2) Actual length of runway required when effective length, considering obstacles, is not determined (distance to accelerate to 93 knots TIAS and stop, divided by the factor 0.85).

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>Airplane weight in pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>39,000</td>
</tr>
<tr>
<td>S.L.</td>
<td>4,830</td>
</tr>
</tbody>
</table>

1. Ref. Fig. 1(a)(1) for weight and distance for altitudes above 7,000.

(b) Curtiss C-46 certificated for maximum weight 48,000 pounds.

(1) Effective length of runway required when effective length is determined in accordance with §121.171 (distance to accelerate to 93 knots TIAS and stop, with zero wind and zero gradient). (Factor=1.00)

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>Airplane weight in pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>39,000</td>
</tr>
<tr>
<td>S.L.</td>
<td>4,110</td>
</tr>
<tr>
<td>1,000</td>
<td>4,250</td>
</tr>
<tr>
<td>2,000</td>
<td>4,400</td>
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<tr>
<td>3,000</td>
<td>4,500</td>
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<tr>
<td>4,000</td>
<td>4,650</td>
</tr>
<tr>
<td>5,000</td>
<td>4,910</td>
</tr>
<tr>
<td>6,000</td>
<td>5,160</td>
</tr>
<tr>
<td>7,000</td>
<td>5,420</td>
</tr>
<tr>
<td>8,000</td>
<td>5,680</td>
</tr>
<tr>
<td>9,000</td>
<td>5,940</td>
</tr>
</tbody>
</table>

1. Ref. Fig. 1(a)(2) for weight and distance for altitudes above 7,000.

(2) Actual length of runway required when effective length, considering obstacles, is not determined (distance to accelerate to 93 knots TIAS and stop, divided by the factor 0.85).

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>Airplane weight in pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>39,000</td>
</tr>
<tr>
<td>S.L.</td>
<td>4,830</td>
</tr>
<tr>
<td>1,000</td>
<td>5,000</td>
</tr>
<tr>
<td>2,000</td>
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<td>5,470</td>
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<tr>
<td>4,000</td>
<td>5,770</td>
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<tr>
<td>5,000</td>
<td>6,070</td>
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<tr>
<td>6,000</td>
<td>6,380</td>
</tr>
<tr>
<td>7,000</td>
<td>6,680</td>
</tr>
<tr>
<td>8,000</td>
<td>6,990</td>
</tr>
</tbody>
</table>

1. Ref. Fig. 1(b)(1) for weight and distance for altitudes above 6,000.

(b) Curtiss C-46 certificated for maximum weight 48,000 pounds.

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>Airplane weight in pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>39,000</td>
</tr>
<tr>
<td>S.L.</td>
<td>4,110</td>
</tr>
<tr>
<td>1,000</td>
<td>4,250</td>
</tr>
<tr>
<td>2,000</td>
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</tr>
<tr>
<td>3,000</td>
<td>4,500</td>
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<tr>
<td>4,000</td>
<td>4,650</td>
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<tr>
<td>5,000</td>
<td>4,910</td>
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<tr>
<td>6,000</td>
<td>5,160</td>
</tr>
<tr>
<td>7,000</td>
<td>5,420</td>
</tr>
<tr>
<td>8,000</td>
<td>5,680</td>
</tr>
<tr>
<td>9,000</td>
<td>5,940</td>
</tr>
</tbody>
</table>

1. Ref. Fig. 1(b)(2) for weight and distance for altitudes above 6,000.

Table 2—En Route Limitations

(a) Curtiss model C-46 certificated for maximum weight of 45,000 pounds (based on a climb speed of 113 knots (TIAS)).
Federal Aviation Administration, DOT

### TABLE 3—LANDING LIMITATIONS

<table>
<thead>
<tr>
<th>Weight (pounds)</th>
<th>Terrain clearance (feet)</th>
<th>Blower setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>45,000</td>
<td>6,450</td>
<td>Low.</td>
</tr>
<tr>
<td>44,000</td>
<td>7,000</td>
<td>Do.</td>
</tr>
<tr>
<td>43,000</td>
<td>7,500</td>
<td>Do.</td>
</tr>
<tr>
<td>42,200</td>
<td>8,000</td>
<td>High.</td>
</tr>
<tr>
<td>41,000</td>
<td>9,600</td>
<td>Do.</td>
</tr>
<tr>
<td>40,000</td>
<td>11,000</td>
<td>Do.</td>
</tr>
<tr>
<td>39,000</td>
<td>12,300</td>
<td>Do.</td>
</tr>
</tbody>
</table>

1. Highest altitude of terrain over which airplanes may be operated in compliance with § 121.201.

Ref. Fig. 2(a).

(b) Curtiss model C–46 certified for maximum weight of 48,000 pounds or with engine installation approved for 2,550 revolutions per minute (1,700 brake horsepower). Maximum continuous power in low blower (based on a climb speed of 113 knots (TIAS)).

<table>
<thead>
<tr>
<th>Weight (pounds)</th>
<th>Terrain clearance (feet)</th>
<th>Blower setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>48,000</td>
<td>5,850</td>
<td>Low.</td>
</tr>
</tbody>
</table>

1. Highest altitude of terrain over which airplanes may be operated in compliance with § 121.201.

Ref. Fig. 2(b).

1. Steady approach speed through 50-foot height TIAS denoted by symbol $V_{so}$.

Ref. Fig. 3(a)(1).

1. For use with Curtiss model C–46 airplanes when approved for this weight.

Ref. Fig. 3(a)(2).

(b) Alternate Airports.

Effective length of runway required when effective length is determined in accordance with §121.171 with zero wind and zero gradient.

1. Curtiss model C–46 certified for maximum weight of 45,000 pounds. (0.70 factor)

### TABLE 3—LANDING LIMITATIONS

<table>
<thead>
<tr>
<th>Weight (pounds)</th>
<th>Terrain clearance (feet)</th>
<th>Blower setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>47,000</td>
<td>6,300</td>
<td>Do.</td>
</tr>
<tr>
<td>46,000</td>
<td>6,700</td>
<td>Do.</td>
</tr>
<tr>
<td>45,000</td>
<td>7,200</td>
<td>Do.</td>
</tr>
<tr>
<td>44,500</td>
<td>7,450</td>
<td>Do.</td>
</tr>
<tr>
<td>44,000</td>
<td>8,000</td>
<td>High.</td>
</tr>
<tr>
<td>44,000</td>
<td>8,550</td>
<td>Do.</td>
</tr>
<tr>
<td>43,000</td>
<td>10,800</td>
<td>Do.</td>
</tr>
<tr>
<td>42,000</td>
<td>12,500</td>
<td>Do.</td>
</tr>
<tr>
<td>41,000</td>
<td>13,000</td>
<td>Do.</td>
</tr>
</tbody>
</table>

1. Highest altitude of terrain over which airplanes may be operated in compliance with § 121.201.

Ref. Fig. 2(b).

### TABLE 3—LANDING LIMITATIONS

(a) Intended Destination.

Effective length of runway required for intended destination when effective length is determined in accordance with §121.171 with zero wind and zero gradient.

3. Curtiss model C–46 certified for maximum weight of 45,000 pounds. (0.60 factor)

#### Distance in feet

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>Airplane weight in pounds and approach speeds 1 in knots</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$V_{so}$</td>
</tr>
<tr>
<td>S.L.</td>
<td>4,320</td>
</tr>
<tr>
<td>1,000</td>
<td>4,440</td>
</tr>
<tr>
<td>2,000</td>
<td>4,550</td>
</tr>
<tr>
<td>3,000</td>
<td>4,670</td>
</tr>
<tr>
<td>4,000</td>
<td>4,800</td>
</tr>
<tr>
<td>5,000</td>
<td>4,920</td>
</tr>
<tr>
<td>6,000</td>
<td>5,040</td>
</tr>
<tr>
<td>7,000</td>
<td>5,170</td>
</tr>
<tr>
<td>8,000</td>
<td>5,310</td>
</tr>
</tbody>
</table>

1. Steady approach speed through 50-foot height TIAS denoted by symbol $V_{so}$.

Ref. Fig. 3(a)(1).

1. For use with Curtiss model C–46 airplanes when approved for this weight.

Ref. Fig. 3(a)(2).

(b) Alternate Airports.

Effective length of runway required when effective length is determined in accordance with §121.171 with zero wind and zero gradient.

1. Curtiss model C–46 certified for maximum weight of 45,000 pounds. (0.70 factor)
### Distance in feet

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>Airplane weight in pounds and approach speeds (^1) in knots</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(40,000)</td>
</tr>
<tr>
<td>S.L</td>
<td>3,700</td>
</tr>
<tr>
<td>1,000</td>
<td>3,800</td>
</tr>
<tr>
<td>2,000</td>
<td>3,900</td>
</tr>
<tr>
<td>3,000</td>
<td>4,000</td>
</tr>
<tr>
<td>4,000</td>
<td>4,110</td>
</tr>
<tr>
<td>5,000</td>
<td>4,210</td>
</tr>
<tr>
<td>6,000</td>
<td>4,330</td>
</tr>
<tr>
<td>7,000</td>
<td>4,430</td>
</tr>
<tr>
<td>8,000</td>
<td>4,550</td>
</tr>
</tbody>
</table>

\(^1\) Steady approach speed through 50 foot-height-knots TIAS denoted by symbol \(V_{\text{so}}\). 
Ref. Fig. 3(b)(1).

(2) Curtiss model C-46 certificated for maximum weight of 48,000 pounds. \(^2\) (0.70 factor.)

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>Airplane weight in pounds and approach speeds (^2) in knots</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(42,000)</td>
</tr>
<tr>
<td>S.L</td>
<td>2,890</td>
</tr>
<tr>
<td>1,000</td>
<td>2,960</td>
</tr>
<tr>
<td>2,000</td>
<td>3,040</td>
</tr>
<tr>
<td>3,000</td>
<td>3,110</td>
</tr>
<tr>
<td>4,000</td>
<td>3,180</td>
</tr>
<tr>
<td>5,000</td>
<td>3,260</td>
</tr>
<tr>
<td>6,000</td>
<td>3,330</td>
</tr>
<tr>
<td>7,000</td>
<td>3,420</td>
</tr>
<tr>
<td>8,000</td>
<td>3,500</td>
</tr>
</tbody>
</table>

\(^2\) For use with Curtiss model C-46 airplanes when approved for this weight.
\(^1\) Steady approach speed through 50 foot-height-knots TIAS denoted by symbol \(V_{\text{so}}\).
Ref. Fig. 3(b)(2).

(c) Actual length of runway required when effective length, considering obstacles, is not determined in accordance with §121.171.

(1) Curtiss model C-46 certificated for maximum weight of 45,000 pounds. \(^3\) (0.55 factor.)

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>Airplane weight in pounds and approach speeds (^3) in knots</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(40,000)</td>
</tr>
<tr>
<td>S.L</td>
<td>4,710</td>
</tr>
<tr>
<td>1,000</td>
<td>4,840</td>
</tr>
<tr>
<td>2,000</td>
<td>4,960</td>
</tr>
<tr>
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</tr>
<tr>
<td>8,000</td>
<td>5,790</td>
</tr>
</tbody>
</table>

\(^3\) Steady approach speed through 50 foot-height-knots TIAS denoted by symbol \(V_{\text{so}}\).
Ref. Fig. 3(c)(1).
## Federal Aviation Administration, DOT

### Pt. 121, App. C

(2) Curtiss C-46 certificated for maximum weight of 48,000 pounds.\(^1\) (0.55 factor.)

<table>
<thead>
<tr>
<th>Distance in feet</th>
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<th>44,000</th>
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<td>82</td>
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<tr>
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<td>80</td>
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<td>1,000</td>
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<td>82</td>
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<td>80</td>
<td>4,620</td>
<td>82</td>
<td>4,790</td>
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</tbody>
</table>

\(^1\) For use with Curtiss model C-46 airplanes when approved for this weight.

\(^2\) Steady approach speed through 50 foot height knots TIAS denoted by symbol $V_{50}$

Ref. Fig. 3(c)(2).

---

Federal Aviation Administration, DOT

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(2) Curtiss C-46 certificated for maximum weight of 48,000 pounds.\(^1\) (0.55 factor.)

Distance in feet

<table>
<thead>
<tr>
<th>Standard altitude in feet</th>
<th>42,000</th>
<th>44,000</th>
<th>46,000</th>
<th>48,000</th>
<th>50,000</th>
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</tr>
</tbody>
</table>

\(^1\) For use with Curtiss model C-46 airplanes when approved for this weight.

\(^2\) Steady approach speed through 50 foot height knots TIAS denoted by symbol $V_{50}$

Ref. Fig. 3(c)(2).
CURTISS C-46 MODELS
CERTIFICATED FOR MAX. WEIGHT OF 45,000 LBS.

TAKEOFF LIMITATION.
ZERO WIND AND ZERO GRADIENT.

BASED ON EFFECTIVE TAKEOFF LENGTH. (1.00 FACTOR)

FAR 121.199

REFERENCE TABLE 1(g) (1)
CURTISS C-46 MODELS
CERTIFICATED FOR MAX. WEIGHT OF 45,000 LBS.

TAKEOFF LIMITATION
ZERO WIND AND ZERO GRADIENT

BASED ON ACTUAL TAKEOFF LENGTH
WHEN EFFECTIVE LENGTH IS NOT
DETERMINED. (0.85 FACTOR)
CURTISS C-46 MODELS
CERTIFICATED FOR MAX. WEIGHT OF 48,000 LBS.

TAKEOFF LIMITATION
ZERO WIND AND ZERO GRADIENT

BASED ON EFFECTIVE TAKEOFF
LENGTH. (1.00 FACTOR)

FAR 121.199

REFERENCE TABLE 1(b) (1)
CURTISS C-46 MODELS
CERTIFICATED FOR MAX. WEIGHT OF 48,000 LBS.

TAKEOFF LIMITATION
ZERO WIND AND ZERO GRADIENT

BASED ON ACTUAL TAKEOFF LENGTH
WHEN EFFECTIVE LENGTH IS NOT
DETERMINED. (0.85 FACTOR)

REFERENCE TABLE 1(b) (2)
RUNWAY GRADIENT CORRECTION
FOR ACCELERATE - STOP DISTANCE

FOR C-46 AIRPLANES UNDER §121.199
CURTISS C-46 MODELS
ENROUTE LIMITATIONS - ONE ENGINE INOPERATIVE

FAR 121.201

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C-46 MAX. CERTIFICATED WEIGHT 48,000 LBS.
ENROUTE CLIMB SUMMARY

- GEAR UP
- FLAP UP
- COWLS 20
- 130 MPH T.I.A.S.
- LEFT ENGINE INOPERATIVE,
  PROPELLER FEATHERED WITH
  2 BLADES UP, 1 DOWN
- RIGHT ENGINE OPERATING AT
  MAXIMUM CONTINUOUS POWER
CURTISS C-46 MODELS
CERTIFICATED FOR MAX. WEIGHT OF 45,000 LBS.

LANDING LIMITATIONS,
ZERO WIND AND ZERO GRADIENT

BASED ON EFFECTIVE LANDING LENGTH
AT INTENDED DESTINATION. (0.60 FACTOR)

FAR 121.203

FIG. 3(a) (1)
CURTISS C-46 MODELS
CERTIFIED FOR MAX. WEIGHT OF 48,000 LBS.

LANDING LIMITATIONS,
ZERO WIND AND ZERO GRADIENT

BASED ON EFFECTIVE LANDING LENGTH
AT INTENDED DESTINATION. (0.60 FACTOR)

FAR 121.203

FIG. 3(a) (2)
CURTISS C-46 MODELS
CERTIFICATED FOR MAX. WEIGHT OF 45,000 LBS.

LANDING LIMITATIONS,
ZERO WIND AND ZERO GRADIENT

BASED ON EFFECTIVE LANDING LENGTH
AT ALTERNATE AIRPORTS. (0.70 FACTOR).

FAR 121.205

![Diagram showing standard altitude in 1,000 feet versus landing field length in 100 feet.]

STEADY APPROACH SPEED OF 91 KNOTS (TIAS)
THROUGH 50 FT. HEIGHT AT 45,000 LBS. SEE
TABLE 3 (b)(1) FOR SPEED AT OTHER WEIGHTS

FIG. 3(b) (1)
CURTISS C-46 MODELS
CERTIFICATED FOR MAX. WEIGHT OF 48,000 LBS.

LANDING LIMITATIONS,
ZERO WIND AND ZERO GRADIENT

BASED ON EFFECTIVE LANDING LENGTH
AT ALTERNATE AIRPORTS. (0.70 FACTOR).

FAR 121.205

FIG. 3(b) (2)
CURTISS C-46 MODELS
CERTIFICATED FOR MAX. WEIGHT OF 45,000 LBS.

LANDING LIMITATIONS,
ZERO WIND AND ZERO GRADIENT

BASED ON ACTUAL LANDING LENGTH
WHEN EFFECTIVE LENGTH IS NOT
DETERMINED. (0.55 FACTOR)

STEADY APPROACH SPEED OF 91 KNOTS (TIAS)
THROUGH 50 FT. HEIGHT AT 45,000 LBS. SEE
TABLE 3 (g)(1) FOR SPEED AT OTHER WEIGHTS

STANDARD ALTITUDE IN 1,000 FEET

LANDING FIELD LENGTH IN 100 FEET

FIG. 3(c) (1)
CURTISS C-46 MODELS
CERTIFIED FOR MAX. WEIGHT OF 48,000 LBS.

LANDING LIMITATIONS,
ZERO WIND AND ZERO GRADIENT

BASED ON ACTUAL LANDING LENGTH
WHEN EFFECTIVE LENGTH IS NOT
DETERMINED. (0.55 FACTOR)

FIG. 3(c) (2)
APPENDIX D TO PART 121—CRITERIA FOR DEMONSTRATION OF EMERGENCY EVACUATION PROCEDURES UNDER § 121.291

(a) Aborted takeoff demonstration.

(1) The demonstration must be conducted either during the dark of the night or during daylight with the dark of the night simulated. If the demonstration is conducted indoors during daylight hours, it must be conducted with each window covered and each door closed to minimize the daylight effect. Illumination on the floor or ground may be used, but it must be kept low and shielded against shining into the airplane’s windows or doors.

(2) The airplane must be a normal ground attitude with landing gear extended.

(3) Unless the airplane is equipped with an egress means other than exits, the exits of the airplane may be used for descent from the wing to the ground. Safety equipment such as mats or inverted life rafts may be placed on the floor or ground to protect participants. No other equipment that is not part of the emergency evacuation equipment of the airplane may be used to aid the participants in reaching the ground.

(4) The airplane’s normal electrical power sources must be deenergized.

(5) All emergency equipment for the type of passenger-carrying operation involved must be installed in accordance with the certificate holder’s manual.

(6) Each external door and exit, and each internal door or curtain must be in position to simulate a normal takeoff.

(7) A representative passenger load of persons in normal health must be used. At least 40 percent of the passenger load must be males. At least 35 percent of the passenger load must be over 50 years of age. At least 15 percent of the passenger load must be female and over 50 years of age. Three life-size dolls, not included as part of the total passenger load, must be carried by passengers to simulate live infants 2 years old or younger. Crewmembers, mechanics, and training personnel, who maintain or operate the airplane in the normal course of their duties, may not be used as passengers.

(8) No passenger may be assigned a specific seat except as the Administrator may require. Except as required by item (12) of this paragraph, no employee of the certificate holder may be seated next to an emergency exit.

(9) Seat belts and shoulder harnesses (as required) must be fastened.

(10) Before the start of the demonstration, approximately one-half of the total average amount of carry-on baggage, blankets, pillows, and other similar articles must be distributed at several locations in the aisles and emergency exit access ways to create minor obstructions.

(11) The seating density and arrangement of the airplane must be representative of the highest capacity passenger version of that airplane the certificate holder operates or proposes to operate.

(12) Each crewmember must be a member of a regularly scheduled line crew, except that flight crewmembers need not be members of a regularly scheduled line crew provided they have knowledge of the airplane. Each crewmember must be seated in the seat the crewmember is normally assigned for takeoff, and must remain in that seat until the signal for commencement of the demonstration is received.

(13) No crewmember or passenger may be given prior knowledge of the emergency exits available for the demonstration.

(14) The certificate holder may not practice, rehearse, or describe the demonstration for the participants nor may any participant have taken part in this type of demonstration within the preceding 6 months.

(15) The pretakeoff passenger briefing required by § 121.571 may be given in accordance with the certificate holder’s manual. The passengers may also be warned to follow directions of crewmembers, but may not be instructed on the procedures to be followed in the demonstration.

(16) If safety equipment as allowed by item (3) of this section is provided, either all passenger and cockpit windows must be blacked out or all of the emergency exits must have safety equipment in order to prevent disclosure of the available emergency exits.

(17) Not more than 50 percent of the emergency exits in the sides of the fuselage of an airplane that meet all of the requirements applicable to the required emergency exits for that airplane may be used for the demonstration. Exits that are not to be used in the demonstration must have the exit handle deactivated or must be indicated by red lights, red tape, or other acceptable means, placed outside the exits to indicate fire or other reason that they are unusable. The exits to be used must be representative of all of the emergency exits on the airplane and must be designated by the certificate holder, subject to approval by the Administrator. At least one floor level exit must be used.

(18) Except as provided in paragraph (a)(3) of this appendix, all evacuees must leave the airplane by a means provided as part of the airplane’s equipment.

(19) The certificate holder’s approved procedures and all of the emergency equipment that is normally available, including slides, ropes, lights, and megaphones, must be fully utilized during the demonstration, except that the flightcrew must take no active role in assisting others inside the cabin during the demonstration.

(20) The evacuation time period is completed when the last occupant has evacuated the airplane and is on the ground. Evacuees
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using stands or ramps allowed by item (3) above are considered to be on the ground when they are on the stand or ramp: Provided, That the acceptance rate of the stand or ramp is no greater than the acceptance rate of the means available on the airplane for descent from the wing during an actual crash situation.

(b) Ditching demonstration. The demonstration must assume that daylight hours exist outside the airplane, and that all required crewmembers are available for the demonstration.

(1) If the certificate holder’s manual requires the use of passengers to assist in the launching of liferafts, the needed passengers must be aboard the airplane and participate in the demonstration according to the manual.

(2) A stand must be placed at each emergency exit and wing, with the top of the platform at a height simulating the water level of the airplane following a ditching.

(3) After the ditching signal has been received, each evacuee must don a life vest according to the certificate holder’s manual.

(4) Each liferaft must be launched and inflated, according to the certificate holder’s manual, and all other required emergency equipment must be placed in rafts.

(5) Each evacuee must enter a liferaft, and the crewmembers assigned to each liferaft must indicate the location of emergency equipment aboard the raft and describe its use.

(6) Either the airplane, a mockup of the airplane or a floating device simulating a passenger compartment must be used.

(i) If a mockup of the airplane is used, it must be a life-size mockup of the interior and representative of the airplane currently used by or proposed to be used by the certificate holder, and must contain adequate seats for use of the evacuees. Operation of the emergency exits and the doors must closely simulate those on the airplane. Sufficient wing area must be installed outside the over-the-wing exits to demonstrate the evacuation.

(ii) If a floating device simulating a passenger compartment is used, it must be representative, to the extent possible, of the passenger compartment of the airplane used in operations. Operation of the emergency exits and the doors must closely simulate operation on that airplane. Sufficient wing area must be installed outside the over-the-wing exits to demonstrate the evacuation. The device must be equipped with the same survival equipment as is installed on the airplane, to accommodate all persons participating in the demonstration.


APPENDIX E TO PART 121—FLIGHT TRAINING REQUIREMENTS

The maneuvers and procedures required by §121.424 of this part for pilot initial, transition, and upgrade flight training are set forth in the certificate holder’s approved low-altitude windshear flight training program and in this appendix and must be performed inflight except that windshear maneuvers and procedures must be performed in an airplane simulator in which the maneuvers and procedures are specifically authorized to be accomplished and except to the extent that certain other maneuvers and procedures may be performed in an airplane simulator with a visual system (visual simulator), an airplane simulator without a visual system (nonvisual simulator), a training device, or a static airplane as indicated by the appropriate symbol in the respective column opposite the maneuver or procedure.

Whenever a maneuver or procedure is authorized to be performed in a nonvisual simulator, it may be performed in a visual simulator; when authorized in a training device, it may be performed in a visual or nonvisual simulator, and in some cases, a static airplane. Whenever the requirement may be performed in either a training device or a static airplane, the appropriate symbols are entered in the respective columns.

For the purpose of this appendix, the following symbols mean—

P = Pilot in Command (PIC).
S = Second in Command (SIC).
B = PIC and SIC.
F = Flight Engineer.
PJ = PIC transition Jet to Jet.
PP = PIC transition Prop. to Prop.
SJ = SIC transition Jet to Jet.
SP = SIC transition Prop. to Prop.
AT = All transition categories (PJ, PP, SJ, SP).
PS = SIC upgrading to PIC (same airplane).
SF = Flight Engineer upgrading to SIC (same airplane).
BU = Both SIC and Flight Engineer upgrading (same airplane).

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As appropriate to the airplane and the operation involved, flight training for pilots must include the following maneuvers and procedures:

I. Preflight:
   (a) Visual inspection of the exterior and interior of the airplane, the location of each item to be inspected, and the purpose for inspecting it. If a flight engineer is a required crewmember for the particular type of airplane, the visual inspection may be replaced by using an approved pictorial means that realistically portrays the location and detail of preflight inspection items...
   (b) Use of the prestart check list, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communications radio facilities and frequencies prior to flight.
   (c) Taxiing, sailing, and docking procedures in compliance with instructions issued by the appropriate Traffic Control Authority or by the person conducting the training.
   (d) Pretakeoff checks that include powerplant checks.

II. Takeoffs:
   (a) Normal takeoffs which, for the purpose of this maneuver, begin when the airplane is taxied into position on the runway to be used.
   (b) Takeoffs with instrument conditions simulated at or before reaching an altitude of 10000 feet above the airport elevation.
   (c) Crosswind takeoffs
   (d) Takeoffs with a simulated failure of the most critical powerplant—
(1) At a point after \( V_1 \) and before \( V_2 \) that in the judgment of the person conducting the training is appropriate to the airplane type under the prevailing conditions; or,

(2) At a point as close as possible after \( V_1 \) when \( V_1 \) and \( V_2 \) or \( V_1 \) and \( V_R \) are identical; or,

(3) At the appropriate speed for non-transport category airplanes.

For transition training in an airplane group with engines mounted in similar positions, or from wing-mounted engines to aft fuselage-mounted engines, the maneuver may be performed in a nonvisual simulator.

(a) Rejected takeoffs accomplished during a normal takeoff run after reaching a reasonable speed determined by giving due consideration to aircraft characteristics, runway length, surface conditions, wind direction and velocity, brake heat energy, and any other pertinent factors that may adversely affect safety or the airplane.

Training in at least one of the above takeoffs must be accomplished at night. For transitioning pilots this requirement may be met during the operating experience required under § 121.434 of this part by performing a normal takeoff at night when a check airman serving as pilot-in-command is occupying a pilot station.

III. Flight Maneuvers and Procedures:

(a) Turns with and without spoilers

(b) Tuck and Mach buffet

(c) Maximum endurance and maximum range procedures.

(d) Operation of systems and controls at the flight engineer station.

(e) Runway and jammed stabilizer

(f) Normal and abnormal or alternate operation of the following systems and procedures:

(1) Pressurization

(2) Pneumatic

(3) Air conditioning

(4) Fuel and oil

(5) Electrical

(6) Hydraulic

(7) Flight control

(8) Anti-icing and deicing
<table>
<thead>
<tr>
<th>Maneuvers/Procedures</th>
<th>Initial training</th>
<th>Transition training</th>
<th>Upgrade training</th>
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<td>A/P Simulator</td>
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<tr>
<td>(9) Auto-pilot</td>
<td>B</td>
<td></td>
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<tr>
<td>(10) Automatic or other approach aids</td>
<td>B</td>
<td>AT</td>
<td>SF</td>
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<tr>
<td>(11) Stall warning devices, stall avoidance devices, and stability augmentation devices.</td>
<td>B</td>
<td>AT</td>
<td>SF</td>
</tr>
<tr>
<td>(12) Airborne radar devices</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(13) Any other systems, devices, or aids available.</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(14) Electrical, hydraulic, flight control, and flight instrument system malfunctioning or failure.</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(15) Landing gear and flap systems failure or malfunction.</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(16) Failure of navigation or communications equipment.</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(g) Flight emergency procedures that include at least the following:</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(1) Powerplant, heater, cargo compartment, cabin, flight deck, wing, and electrical fires.</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(2) Smoke control</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(3) Powerplant failures</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(4) Fuel jettisoning</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(5) Any other emergency procedures outlined in the appropriate flight manual.</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(h) Steep turns in each direction. Each steep turn must involve a bank angle of 45° with a heading change of at least 180° but not more than 360°.</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(i) Approaches to stalls in the takeoff configuration (except where the airplane uses only a zero-flap configuration), in the clean configuration, and in the landing configuration.</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
<tr>
<td>(j) Recovery from specific flight characteristics that are peculiar to the airplane type.</td>
<td>B</td>
<td>AT</td>
<td>BU</td>
</tr>
</tbody>
</table>
(k) Instrument procedures that include the following:

1. Area departure and arrival.
2. Use of navigation systems including adherence to assigned radials.
3. Holding.

(l) ILS instrument approaches that include the following:

1. Normal ILS approaches.
2. Manually controlled ILS approaches with a simulated failure of one powerplane which occurs before initiating the final approach course and continues to touchdown or through the missed approach procedure.

(m) Instrument approaches and missed approaches other than ILS which include the following:

1. Nonprecision approaches that the trainee is likely to use.
2. In addition to subparagraph (1) of this paragraph, at least one other nonprecision approach and missed approach procedure that the trainee is likely to use.

In connection with paragraphs III(k) and III(l), each instrument approach must be performed according to any procedures and limitations approved for the approach facility used. The instrument approach begins when the airplane is over the initial approach fix for the approach procedure being used (or turned over to the final approach controller in the case of GCA approach) and ends when the airplane touches down on the runway or when transition to a missed approach configuration is completed.

(n) Circling approaches which include the following:

1. That portion of the circling approach to the authorized minimum altitude for the procedure being used must be made under simulated instrument conditions.
## FLIGHT TRAINING REQUIREMENTS—Continued

<table>
<thead>
<tr>
<th>Maneuvers/Procedures</th>
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<td>A/P</td>
</tr>
<tr>
<td></td>
<td>Inflight Static</td>
<td>Visual Non-visual</td>
<td>Inflight Static</td>
</tr>
</tbody>
</table>

(2) The circling approach must be made to the authorized minimum circling approach altitude followed by a change in heading and the necessary maneuvering (by visual reference) to maintain a flight path that permits a normal landing on a runway at least 90° from the final approach course of the simulated instrument portion of the approach.

(3) The circling approach must be performed without excessive maneuvering, and without exceeding the normal operating limits of the airplane. The angle of bank should not exceed 30°.

Training in the circling approach maneuver is not required for a pilot employed by a certificate holder subject to the operating rules of Part 121 of this chapter if the certificate holder’s manual prohibits a circling approach in weather conditions below 1000-3 (ceiling and visibility); for a SIC if the certificate holder’s manual prohibits the SIC from performing a circling approach in operations under this part.

(o) Zero-flap approaches. Training in this maneuver is not required for a particular airplane type if the Administrator has determined that the probability of flap extension failure on that type airplane is extremely remote due to system design. In making this determination, the Administrator determines whether training on slats only and partial flap approaches is necessary.

(p) Missed approaches which include the following:

1. Missed approaches from ILS approaches.
2. Other missed approaches.
III. Approaches:

(3) Missed approaches that include a complete approved missed approach procedure.

(4) Missed approaches that include a powerplant failure.

IV. Landings and Approaches to Landings:

(a) Normal landings

(b) Landing and go around with the horizontal stabilizer out of trim.

(c) Landing in sequence from an ILS instrument approach.

(d) Cross wind landing

(e) Maneuvering to a landing with simulated powerplant failure, as follows:

(1) Except as provided in subparagraph (5) of this paragraph in the case of 3-engine airplanes, maneuvering to a landing with an approved procedure that approximates the loss of two powerplants (center and one outboard engine).

(2) Except as provided in subparagraph (3) of this paragraph, in the case of other multiengine airplanes, maneuvering to a landing with a simulated failure of 50 percent of available powerplants with the simulated loss of power on one side of the airplane.

(3) Notwithstanding the requirements of subparagraphs (1) and (2) of this paragraph, flight crewmembers who satisfy those requirements in a visual simulator must also:

(i) Take inflight training in one-engine inoperative landings; and.

(ii) In the case of a second-in-command up-grading to a pilot-in-command and who has not previously performed the maneuvers required by this paragraph in flight, meet the requirements of this paragraph applicable to initial training for pilots-in-command.

(4) In the case of flight crewmembers other than the pilot-in-command, perform the maneuver with the simulated loss of power of the most critical powerplant only.
<table>
<thead>
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<th>Initial training</th>
<th>Transition training</th>
<th>Upgrade training</th>
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<tbody>
<tr>
<td></td>
<td>A/P</td>
<td>Simulator</td>
<td>A/P</td>
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<tr>
<td></td>
<td>Inflight Static</td>
<td>Non-visual simulator</td>
<td>Training device</td>
</tr>
<tr>
<td>(f) Landing under simulated circling approach conditions (exceptions under III(n) applicable to this requirement).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(g) Rejected landings that include a normal missed approach procedure after the landing is rejected. For the purpose of this maneuver the landing should be rejected at approximately 50 feet and approximately over the runway threshold.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(h) Zero-flap landings if the Administrator finds that maneuver appropriate for training in the airplane.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>(i) Manual reversion (if appropriate).</td>
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<td></td>
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</tr>
<tr>
<td>Training in landings and approaches to landings must include the types and conditions provided in IV(a) through (i) but more than one type may be combined where appropriate.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training in one of the above landings must be accomplished at night. For transitioning pilots, this requirement may be met during the operating experience required under §121.434 of this part by performing a normal landing when a check pilot serving as pilot-in-command is occupying a pilot station.</td>
<td></td>
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</tbody>
</table>

The maneuvers and procedures required by §121.441 for pilot proficiency checks are set forth in this appendix and must be performed inflight except to the extent that certain maneuvers and procedures may be performed in an airplane simulator with a visual system (visual simulator), an airplane simulator without a visual system (nonvisual simulator), or a training device as indicated by the appropriate symbol in the respective column opposite the maneuver or procedure. Whenever a maneuver or procedure is authorized to be performed in a nonvisual simulator, it may also be performed in a visual simulator; when authorized in a training device, it may be performed in a visual or nonvisual simulator.

For the purpose of this appendix, the following symbols mean—

\[ P = \text{Pilot in Command.} \]
\[ B = \text{Both Pilot in Command and Second in Command.} \]
\[ * = \text{A symbol and asterisk (B*) indicates that a particular condition is specified in the maneuvers and procedures column.} \]
\[ # = \text{When a maneuver is preceded by this symbol it indicates the maneuver may be required in the airplane at the discretion of the person conducting the check.} \]

Throughout the maneuvers prescribed in this appendix, good judgment commensurate with a high level of safety must be demonstrated. In determining whether such judgment has been shown, the person conducting the check considers adherence to approved procedures, actions based on analysis of situations for which there is no prescribed procedure or recommended practice, and qualities of prudence and care in selecting a course of action.

### Maneuvers/Procedures

<table>
<thead>
<tr>
<th>Required</th>
<th>Permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulated instrument conditions</td>
<td>Inflight</td>
</tr>
</tbody>
</table>

The procedures and maneuvers set forth in this appendix must be performed in a manner that satisfactorily demonstrates knowledge and skill with respect to—

1. The airplane, its systems and components; ............... ............... ............ ......... ......... ........... ........................
2. Proper control of airspeed, configuration, direction, altitude, and altitude in accordance with procedures and limitations contained in the approved Airplane Flight Manual, the certificate holder’s operations Manual, check lists, or other approved material appropriate to the airplane type; and ....................................................... ............... ............ ......... ......... ........... ........................
3. Compliance with approach, ATC, or other applicable procedures ............................................................. ............... ............ ......... ......... ......... ........... ........................

I. Preflight:

(a) Equipment examination (oral or written). As part of the practical test the equipment examination must be closely coordinated with, and related to, the flight maneuvers portion. The equipment examination must cover—

1. Subjects requiring a practical knowledge of the airplane, its powerplants, systems, components, operational, and performance factors; ............... ............... ............ ......... ......... ......... ........................
2. Normal, abnormal, and emergency procedures, and the operations and limitations relating thereto; and ............................................................. ............... ............ ......... ......... ......... ......... ........................
3. The appropriate provisions of the approved Airplane Flight Manual ................................................... ............... ............ ......... ......... ......... ......... ........................

The person conducting the check may accept, as equal to this equipment test, an equipment test given to the pilot in the certificate holder’s ground school within the preceding 6 calendar months.

(b) Preflight inspection. The pilot must— ............................................................. ............... ............ ......... ......... ......... ......... ........................

1. Conduct an actual visual inspection of the exterior and interior of the airplane, locating each item and explaining briefly the purpose for inspecting it; and ............................................................. ............... ............ ......... ......... ......... ......... ........................
2. Demonstrate the use of the prestart check list, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communications radio facilities and frequencies prior to flight ...

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APPENDIX F TO PART 121—PROFICIENCY CHECK REQUIREMENTS

Pt. 121, App. F
### Maneuvers/Procedures

<table>
<thead>
<tr>
<th>Maneuvers/Procedures</th>
<th>Required</th>
<th>Permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Simulated instrument conditions</td>
<td>Inflight</td>
</tr>
<tr>
<td>Except for flight checks required by §121.424(d)(2), an approved pictorial means</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>that realistically portrays the location and detail of preflight inspection items and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>provides for the portrayal of abnormal conditions may be substituted for the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>preflight inspection. If a flight engineer is a required flight crewmember for the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>particular type airplane, the visual inspection may be waived under §121.441(d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Taxiing. This maneuver includes taxiing (in the case of a second in command</td>
<td></td>
<td></td>
</tr>
<tr>
<td>proficiency check to the extent practical from the second in command crew position),</td>
<td></td>
<td></td>
</tr>
<tr>
<td>holding, or docking procedures in compliance with instructions issued by the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>appropriate traffic control authority or by the person conducting the checks ..........</td>
<td>B</td>
<td>B*</td>
</tr>
<tr>
<td>(d) Powerplant checks. As appropriate to the airplane type</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>II. Takeoff:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Normal. One normal takeoff which, for the purpose of this maneuver, begins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>when the airplane is taxied into position on the runway to be used: ...................</td>
<td>B*</td>
<td>B</td>
</tr>
<tr>
<td>(b) Instrument. One takeoff with instrument conditions simulated at or before</td>
<td></td>
<td></td>
</tr>
<tr>
<td>reaching an altitude of 100′ above the airport elevation ..................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(c) Crosswind. One crosswind takeoff, if practicable, under the existing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>meteorological, airport, and traffic conditions .............................................</td>
<td>B*</td>
<td>B</td>
</tr>
<tr>
<td>Requirements (a) and (c) may be combined, and requirements (a), (b), and (c) may</td>
<td></td>
<td></td>
</tr>
<tr>
<td>be combined if (b) is performed inflight and before reaching an altitude of 100′</td>
<td></td>
<td></td>
</tr>
<tr>
<td>above the airport elevation ...........................................................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(d) Powerplant failure. One takeoff with a simulated failure of the most critical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>powerplant— 1. Adequate speed for non-transport category airplanes .......................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(1) At a point after $V_{S}$ and before $V_{R}$ that in the judgment of the person</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conducting the check is appropriate to the airplane type under the prevailing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conditions; ..................................................................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(2) At a point as close as possible after $V_{S}$ when $V_{S}$ and $V_{R}$ or $V_{T}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and $V_{T}$ or $V_{R}$ and $V_{T}$ are identical; or ....................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(3) At the appropriate speed for non-transport category airplanes .......................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>In an airplane group with aft fuselage-mounted engines this maneuver may be</td>
<td></td>
<td></td>
</tr>
<tr>
<td>performed in a non-visual simulator.....................................................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(e) Rejected. A rejected takeoff may be performed in an airplane during a normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>takeoff run after reaching a reasonable speed determined by giving due consideration</td>
<td></td>
<td></td>
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<tr>
<td>to aircraft characteristics, runway length, surface conditions, wind direction and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>velocity, brake heat energy, and any other pertinent factors that may adversely</td>
<td></td>
<td></td>
</tr>
<tr>
<td>affect safety or the airplane ............................................................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>III. Instrument procedures:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Area departure and area arrival. During each of these maneuvers the applicant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>must— ..................................................................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(1) Adhere to actual or simulated ATC clearances (including assigned radials); and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>..........................................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(2) Properly use available navigation facilities .............................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Either area arrival or area departure, but not both, may be waived under §121.441(d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Holding. This maneuver includes entering, maintaining, and leaving holding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>patterns. It may be performed in connection with either area departure or area arrival</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>..................................................................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(c) ILS and other instrument approaches. There must be the following;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) At least one normal ILS approach ..................................................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(2) At least one manually controlled ILS approach with a simulated failure of one</td>
<td></td>
<td></td>
</tr>
<tr>
<td>powerplant. The simulated failure should occur before initiating the initial flight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>approach course and must continue to touchdown or through the missed approach</td>
<td></td>
<td></td>
</tr>
<tr>
<td>procedure ........................................................................</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>(3) At least one nonprecision approach procedure that is representative of the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nonprecision approach procedures that the certificate holder is likely to use .......</td>
<td>B</td>
<td>B</td>
</tr>
</tbody>
</table>
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### Maneuvers/Procedures

<table>
<thead>
<tr>
<th>Maneuvers/Procedures</th>
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<th>Inflight Visual simulator</th>
<th>Non-visual simulator</th>
<th>Training device</th>
<th>Waiver provisions of §121.441(d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4) Demonstration of at least one nonprecision approach procedure on a letdown aid other than the approach procedure performed under subparagraph (3) of this paragraph that the certificate holder is approved to use. If performed in a training device, the procedures must be observed by a check pilot or an approved instructor.</td>
<td>B</td>
<td></td>
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<tr>
<td>Each instrument approach must be performed according to any procedures and limitations approved for the approach facility used. The instrument approach begins when the airplane is over the initial approach fix for the approach procedure being used (or turned over to the final approach controller in the case of GCA approach) and ends when the airplane touches down on the runway or when transition to a missed approach configuration is completed. Instrument conditions need not be simulated below 100' above touchdown zone elevation.</td>
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</tr>
<tr>
<td>(d) Circling approaches. If the certificate holder is approved for circling minimums below 1000–3, at least one circling approach must be made under the following conditions—</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>(1) The portion of the approach to the authorized minimum circling approach altitude must be made under simulated instrument conditions.</td>
<td></td>
<td>B*</td>
<td></td>
<td>B*</td>
<td></td>
</tr>
<tr>
<td>(2) The approach must be made to the authorized minimum circling approach altitude followed by a change in heading and the necessary maneuvering (by visual reference) to maintain a flight path that permits a normal landing on a runway at least 90° from the final approach course of the simulated instrument portion of the approach.</td>
<td></td>
<td>B</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>(3) The circling approach must be performed without excessive maneuvering, and without exceeding the normal operating limits of the airplane. The angle of bank should not exceed 30°.</td>
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</tr>
<tr>
<td>If local conditions beyond the control of the pilot prohibit the maneuver or prevent it from being performed as required, it may be waived as provided in §121.441(d); Provided, however, that the maneuver may not be waived under this provision for two successive proficiency checks. The circling approach maneuver is not required for a second-in-command if the certificate holder’s manual prohibits a second-in-command from performing a circling approach in operations under this part</td>
<td></td>
<td></td>
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<tr>
<td>(e) Missed approach</td>
<td></td>
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</tr>
<tr>
<td>(1) Each pilot must perform at least one missed approach from an ILS approach.</td>
<td></td>
<td></td>
<td>B*</td>
<td></td>
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<tr>
<td>(2) Each pilot in command must perform at least one additional missed approach.</td>
<td></td>
<td></td>
<td>P*</td>
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<tr>
<td>A complete approved missed approach procedure must be accomplished at least once. At the discretion of the person conducting the check a simulated powerplant failure may be required during any of the missed approaches. These maneuvers may be performed either independently or in conjunction with maneuvers required under Sections III or V of this appendix. At least one missed approach must be performed in flight.</td>
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</tbody>
</table>

### IV. Inflight Maneuvers:

<table>
<thead>
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<th>Maneuvers/Procedures</th>
<th>Simulated instrument conditions</th>
<th>Inflight Visual simulator</th>
<th>Non-visual simulator</th>
<th>Training device</th>
<th>Waiver provisions of §121.441(d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Steep turns. At least one steep turn in each direction must be performed. Each steep turn must involve a bank angle of 45° with a heading change of at least 180° but not more than 360°.</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Approaches to stalls. For the purpose of this maneuver the required approach to a stall is reached when there is a perceptible buffet or other response to the initial stall entry. Except as provided below there must be at least three approaches to stalls as follows:</td>
<td>B</td>
<td></td>
<td>B</td>
<td>B*</td>
<td></td>
</tr>
</tbody>
</table>
### Maneuvers/Procedures Required Permitted

<table>
<thead>
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<th>Simulated instrument conditions</th>
<th>Inflight</th>
<th>Visual sim.</th>
<th>Non-visual sim.</th>
<th>Training device</th>
<th>Waiver provisions of § 121.441(d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) One must be in the takeoff configuration (except where the airplane uses only a zero-flap takeoff configuration)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>(2) One in a clean configuration</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) One in a landing configuration</td>
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</tbody>
</table>

At the discretion of the person conducting the check, one approach to a stall must be performed in one of the above configurations while in a turn with the bank angle between 15° and 30°. Two out of the three approaches required by this paragraph may be waived. If the certificate holder is authorized to dispatch or flight release the airplane with a stall warning device inoperative the device may not be used during this maneuver.

(c) Specific flight characteristics. Recovery from specific flight characteristics that are peculiar to the airplane type

(d) Powerplant failures. In addition to specific requirements for maneuvers with simulated powerplant failures, the person conducting the check may require a simulated powerplant failure at any time during the check.

V. Landings and Approaches to Landings:

Notwithstanding the authorizations for combining and waiving maneuvers and for the use of a simulator, at least two actual landings (one to a full stop) must be made for all pilot-in-command and initial second-in-command proficiency checks. Landings, and approaches to landings must include the following, but more than one type may be combined where appropriate:

Landings and approaches to landings must include the types listed below, but more than one type may be combined where appropriate:

(a) Normal landing

(b) Landing in sequence from an ILS instrument approach except that if circumstances beyond the control of the pilot prevent an actual landing, the person conducting the check may accept an approach to a point where in his judgment a landing to a full stop could have been made.

(c) Crosswind landing, if practical under existing meteorological, airport, and traffic conditions.

(d) Maneuvering to a landing with simulated powerplant failure as follows:
   (1) In the case of 3-engine airplanes, maneuvering to a landing with an approved procedure that approximates the loss of two powerplants (center and one outboard engine); or
   (2) In the case of other multiengine airplanes, maneuvering to a landing with a simulated failure of 50 percent of available powerplants, with the simulated loss of power on one side of the airplane.
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Each applicant must demonstrate the proper emergency procedures for as many of the emergency situations listed below as the person conducting the check finds are necessary to determine that the person being checked has a practical knowledge of the use of the systems and devices appropriate to the airplane type:

(a) Anti-icing and de-icing systems ........................................... B
(b) Auto-pilot systems .......................................................... B
(c) Automatic or other approach aid systems ............................ B
(d) Stall warning devices, stall avoidance devices, and stability augmentation devices ............................. B
(e) Airborne radar devices ................................................... B
(f) Any other systems, devices, or aids available ........................ B
(g) Hydraulic and electrical system failures and malfunctions ...........................
(h) Landing gear and flap systems failure or malfunction ............... B
(i) Failure of navigation or communications equipment .......... B

VI. Normal and Abnormal Procedures:

Each applicant must demonstrate the proper use of as many of the systems and devices listed below as the person conducting the check finds are necessary to determine that the person being checked has a practical knowledge of the use of the systems and devices appropriate to the airplane type:

(a) Anti-icing and de-icing systems ........................................... B
(b) Auto-pilot systems .......................................................... B
(c) Automatic or other approach aid systems ............................ B
(d) Stall warning devices, stall avoidance devices, and stability augmentation devices ............................. B
(e) Airborne radar devices ................................................... B
(f) Any other systems, devices, or aids available ........................ B
(g) Hydraulic and electrical system failures and malfunctions ...........................
(h) Landing gear and flap systems failure or malfunction ............... B
(i) Failure of navigation or communications equipment .......... B

VII. Emergency Procedures:

Each applicant must demonstrate the proper emergency procedures for as many of the emergency situations listed below as the person conducting the check finds are necessary to determine that the person being checked has an adequate knowledge of, and ability to perform, such procedure:

(a) Fire in flight ............................................................ B
(b) Smoke control ............................................................ B
(c) Rapid decompression .................................................... B
(d) Emergency descent ..................................................... B
(e) Any other emergency procedures outlined in the appropriate approved Airplane Flight Manual .............................. B

Notwithstanding the requirements of subparagraphs (d) (1) and (2) of this paragraph, in a proficiency check for other than a pilot-in-command, the simulated loss of power may be only the most critical powerplant. However, if a pilot satisfies the requirements of subparagraphs (d) (1) or (2) of this paragraph in a visual simulator, he also must maneuver in flight to a landing with a simulated failure of the most critical powerplant. In addition, a pilot-in-command may omit the maneuver required by subparagraph (d)(1) or (d)(2) of this paragraph during a required proficiency check or simulator course of training if he satisfactorily performed that maneuver during the preceding proficiency check, or during the preceding approved simulator course of training under the observation of a check airmen, whichever was completed later.

(e) Except as provided in paragraph (f) of this section, if the certificate holder is approved for circling minimums below 1000±3, a landing under simulated circling approach conditions. However, when performed in an airplane, if circumstances beyond the control of the pilot prevent a landing, the person conducting the check may accept an approach to a point where, in his judgment, a landing to a full stop could have been made.

#(f) A rejected landing, including a normal missed approach procedure, that is rejected approximately 50' over the runway and approximately over the runway threshold. This maneuver may be combined with instrument, circling, or missed approach procedures, but instrument conditions need not be simulated below 100 feet above the runway.

VI. Normal and Abnormal Procedures:

Each applicant must demonstrate the proper use of as many of the systems and devices listed below as the person conducting the check finds are necessary to determine that the person being checked has a practical knowledge of the use of the systems and devices appropriate to the airplane type:

(a) Anti-icing and de-icing systems ........................................... B
(b) Auto-pilot systems .......................................................... B
(c) Automatic or other approach aid systems ............................ B
(d) Stall warning devices, stall avoidance devices, and stability augmentation devices ............................. B
(e) Airborne radar devices ................................................... B
(f) Any other systems, devices, or aids available ........................ B
(g) Hydraulic and electrical system failures and malfunctions ...........................
(h) Landing gear and flap systems failure or malfunction ............... B
(i) Failure of navigation or communications equipment .......... B

VII. Emergency Procedures:

Each applicant must demonstrate the proper emergency procedures for as many of the emergency situations listed below as the person conducting the check finds are necessary to determine that the person being checked has an adequate knowledge of, and ability to perform, such procedure:

(a) Fire in flight ............................................................ B
(b) Smoke control ............................................................ B
(c) Rapid decompression .................................................... B
(d) Emergency descent ..................................................... B
(e) Any other emergency procedures outlined in the appropriate approved Airplane Flight Manual .............................. B

APPENDIX G TO PART 121—DOPPLER RADAR AND INERTIAL NAVIGATION SYSTEM (INS); REQUEST FOR EVALUATION; EQUIPMENT AND EQUIPMENT INSTALLATION; TRAINING PROGRAM; EQUIPMENT ACCURACY AND RELIABILITY; EVALUATION PROGRAM

1. Application authority. (a) An applicant for authority to use a Doppler Radar or Inertial Navigation System must submit a request for evaluation of the system to the Flight Standards District Office or International Field Office charged with the overall inspection of its operations 30 days prior to the start of evaluation flights.

(b) The application must contain:

(1) A summary of experience with the system showing to the satisfaction of the Administrator a history of the accuracy and reliability of the system proposed to be used.

(2) A training program curriculum for initial approval under §121.405.

(3) A maintenance program for compliance with subpart L of this part.

(4) A description of equipment installation.

(5) Proposed revisions to the Operations Manual outlining all normal and emergency procedures relative to use of the proposed system, including detailed methods for continuing the navigational function with partial or complete equipment failure, and methods for determining the most accurate system when an unusually large divergence between systems occurs. For the purpose of this appendix, a large divergence is a divergence that results in a track that falls beyond clearance limits.

(6) Any proposed revisions to the minimum equipment list with adequate justification therefor.

(7) A list of operations to be conducted using the system, containing an analysis of each with respect to length, magnetic compass reliability, availability of en route aids, and adequacy of gateway and terminal radio facilities to support the system. For the purpose of this appendix, a gateway is a specific navigational fix where use of long range navigation commences or terminates.

2. Equipment and equipment installation—Inertial Navigation Systems (INS). (a) If an applicant elects to use an Inertial Navigation System it must be at least a dual system (including navigational computers and reference units). At least two systems must be operational at takeoff. The dual system may consist of either two INS units, or one INS unit and one Doppler Radar unit.

(b) Each Inertial Navigation System must incorporate the following:

(1) Valid ground alignment capability at all latitudes appropriate for intended use of the installation.

(2) A display of alignment status or a ready to navigate light showing completed alignment to the flight crew.

(3) The present position of the airplane in suitable coordinates.

(4) Information relative to destinations or waypoint positions:

(i) The information needed to gain and maintain a desired track and to determine deviations from the desired track.

(ii) The information needed to determine distance and time to go to the next waypoint or destination.

(c) For INS installations that do not have memory or other infight alignment means, a separate electrical power source (independent of the main propulsion system) must be provided which can supply, for at least 5 minutes, enough power (as shown by analysis or as demonstrated in the airplane) to maintain the INS in such condition that its full capability is restored upon the reactivation of the normal electrical supply.

(d) The equipment must provide such visual, mechanical, or electrical output signals as may be required to permit the flight crew to detect probable failures or malfunctions in the system.

3. Equipment and equipment installation—Doppler Radar System. (a) If an applicant elects to use a Doppler Radar System it must be at least a dual system (including

(d) A probable failure or malfunction within the system must not result in loss of the aircraft’s required navigation capability.

(e) The alignment, updating, and navigation computer functions of the system must not be invalidated by normal aircraft power interruptions and transients.

(f) The system must not be the source of cause of objectionable radio frequency interference, and must not be adversely affected by radio frequency interference from other aircraft systems.

(g) The FAA-approved airplane flight manual, or supplement thereto, must include pertinent material as required to define the normal and emergency operating procedures and applicable operating limitations associated with INS and Doppler performance (such as maximum latitude at which ground alignment capability is provided, or deviations between systems).

4. Equipment and equipment installation—Inertial Navigation Systems (INS). (a) If an applicant elects to use an Inertial Navigation System it must be at least a dual system (including navigational computers and reference units). At least two systems must be operational at takeoff. The dual system may consist of either two INS units, or one INS unit and one Doppler Radar unit.

(b) Each Inertial Navigation System must incorporate the following:

(1) Valid ground alignment capability at all latitudes appropriate for intended use of the installation.

(2) A display of alignment status or a ready to navigate light showing completed alignment to the flight crew.

(3) The present position of the airplane in suitable coordinates.

(4) Information relative to destinations or waypoint positions:

(i) The information needed to gain and maintain a desired track and to determine deviations from the desired track.

(ii) The information needed to determine distance and time to go to the next waypoint or destination.

(c) For INS installations that do not have memory or other infight alignment means, a separate electrical power source (independent of the main propulsion system) must be provided which can supply, for at least 5 minutes, enough power (as shown by analysis or as demonstrated in the airplane) to maintain the INS in such condition that its full capability is restored upon the reactivation of the normal electrical supply.

(d) The equipment must provide such visual, mechanical, or electrical output signals as may be required to permit the flight crew to detect probable failures or malfunctions in the system.
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dual antennas or a combined antenna designed for multiple operation), except that:

1. A single operating transmitter with a standby capable of operation may be used in lieu of two operating transmitters.

2. Single heading source information to all installations may be utilized, provided a compass comparator system is installed and operational procedures call for frequent cross-checks of all compass heading indicators by crewmembers.

The dual system may consist of either two Doppler Radar units or one Doppler Radar unit and one INS unit.

(b) At least two systems must be operational at takeoff.

(c) As determined by the Administrator and specified in the certificate holder’s operations specifications, other navigational aids may be required to update the Doppler Radar for a particular operation. These may include Loran, Consol, DME, VOR, ADF, ground-based radar, and airborne weather radar. When these aids are required, the cockpit arrangement must be such that all controls are accessible to each pilot seated at his duty station.

5. Training programs. The initial training program for Doppler Radar and Inertial Navigation Systems must include the following:

(a) Duties and responsibilities of flight crewmembers, dispatchers, and maintenance personnel.

(b) For pilots, instruction in the following:

(1) Theory and procedures, limitations, detection of malfunctions, preflight and inflight testing, and cross-checking methods.

(2) Use of computers, an explanation of all systems, compass limitations at high latitudes, a review of navigation, flight planning, and applicable meteorology.

(3) The methods for updating by means of reliable fixes.

(4) The actual plotting of fixes.

(c) Abnormal and emergency procedures.

6. Equipment accuracy and reliability. (a) Each Inertial Navigation System must meet the following accuracy requirements, as appropriate:

(1) For flights up to 10 hours’ duration, no greater than 2 nautical miles per hour of circular error on 95 percent of system flights completed is permitted.

(2) For flights over 10 hours’ duration, a tolerance of ±20 miles cross-track and ±25 miles along-track on 95 percent of system flights completed is permitted.

(b) Compass heading information to the Doppler Radar must be maintained to an accuracy of ±1° and total system deviations must not exceed 2°. When free gyro techniques are used, procedures shall be utilized to ensure that an equivalent level of heading accuracy and total system deviation is attained.

(c) Each Doppler Radar System must meet accuracy requirements of ±20 miles cross-track and ±25 miles along-track for 95 percent of the system flights completed. Updating is permitted.

A system that does not meet the requirements of this section will be considered a failed system.

7. Evaluation program. (a) Approval by evaluation must be requested as a part of the application for operational approval of a Doppler Radar or Inertial Navigation System.

(b) The applicant must provide sufficient flights which show to the satisfaction of the Administrator the applicant’s ability to use cockpit navigation in his operation.

(c) The Administrator bases his evaluation on the following:

(1) Adequacy of operational procedures.

(2) Operational accuracy and reliability of equipment and feasibility of the system with regard to proposed operations.

(3) Availability of terminal, gateway, area, and en route ground-based aids, if required, to support the self-contained system.

(4) Acceptability of cockpit workload.

(5) Adequacy of flight crew qualifications.

(6) Adequacy of maintenance training and availability of spare parts.

After successful completion of evaluation demonstrations, FAA approval is indicated by issuance of amended operations specifications and en route flight procedures defining the new operation. Approval is limited to those operations for which the adequacy of the equipment and the feasibility of cockpit navigation has been satisfactorily demonstrated.


APPENDIX H TO PART 121—ADVANCED SIMULATION

This appendix provides guidelines and a means for achieving flightcrew training in advanced airplane simulators. This appendix describes the simulator and visual system requirements which must be achieved to obtain approval of certain types of training in the simulator. The requirements in this appendix are in addition to the simulator approval requirements in §121.407. Each simulator which is used under this appendix must be approved as a Level B, C, or D simulator, as appropriate.

To obtain FAA approval of the simulator for a specific level, the following must be demonstrated to the satisfaction of the Administrator:

1. Documented proof of compliance with the appropriate simulator, visual system, and additional training requirements of this appendix for the level for which approval is requested.

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2. An evaluation of the simulator to ensure that its ground, flight, and landing performance matches the type of airplane simulated.

3. An evaluation of the appropriate simulator and visual system requirements of the level for which approval is requested.

CHANGES TO SIMULATOR PROGRAMING

While a need exists for some flexibility in making changes in the software program, strict scrutiny of these changes is essential to ensure that the simulator retains its ability to duplicate the airplane's flight and ground characteristics. Therefore, the following procedure must be followed to allow these changes without affecting the approval of an appendix H simulator:

1. Twenty-one calendar days before making changes to the software program which might impact flight or ground dynamics of an appendix H simulator, a complete list of these planned changes, including dynamics related to the motion and visual systems, must be provided in writing to the FAA office responsible for conducting the recurrent evaluation of that simulator.

2. If the FAA does not object to the planned change within 21 calendar days, the operator may make the change.

3. Changes which might affect the approved simulator Level B test guide must be tested by the operator in the simulator to determine the impact of the change before submission to the FAA.

4. Software changes actually installed must be summarized and provided to the FAA. When the operator's test shows a difference in simulator performance due to a change, an amended copy of the test guide page which includes the new simulator test results will also be provided to update the FAA's copy of the test guide.

5. The FAA may examine supporting data or flight check the simulator, or both, to ensure that the aerodynamic quality of the simulator has not been degraded by any change in software programming.

6. All requests for changes are evaluated on the basis of the same criteria used in the initial approval of the simulator for Level B, C, or D.

SIMULATOR MINIMUM EQUIPMENT LIST (MEL)

Because of the strict tolerances and other approval requirements of appendix H simulators, the simulator can provide realistic training with certain nonessential items inoperative. Therefore, an operator may operate its simulator under an MEL which has been approved by the Administrator for that simulator. The MEL includes simulator components and indicates the type of training or checking that is authorized if the component becomes inoperative. To accomplish this, the component is placed in one of the following categories along with any remarks applicable to the component's use in the training program:

1. No training or checking.
2. Training in specific maneuvers.
3. Certification and checking.
4. Line Oriented Flight Training (LOFT).

ADVANCED SIMULATION TRAINING PROGRAM

For an operator to conduct Level C or D training under this appendix all required simulator instruction and checks must be conducted under an advanced simulation training program which is approved by the Administrator for the operator. This program must also ensure that all instructors and check airmen used in appendix H training and checking are highly qualified to provide the training required in the training program. The advanced simulation training program shall include the following:

1. The operator's initial, transition, upgrade, and recurrent simulator training programs and its procedures for re-establishing recency of experience in the simulator.
2. How the training program will integrate Level B, C, and D simulators with other simulators and training devices to maximize the total training, checking, and certification functions.
3. Documentation that each instructor and check airman has served for at least 1 year in that capacity in a certificate holder's approved program or has served for at least 1 year as a pilot in command or second in command in an airplane of the group in which that pilot is instructing or checking.
4. A procedure to ensure that each instructor and check airman actively participates in either an approved regularly scheduled line flying program as a flight crewmember or an approved line observation program in the same airplane type for which that person is instructing or checking.
5. A procedure to ensure that each instructor and check airman is given a minimum of 4 hours of training each year to become familiar with the operator's advanced simulation training program, or changes to it, and to emphasize their respective roles in the program. Training for simulator instructors and check airmen shall include training policies and procedures, instruction methods and techniques, operation of simulator controls (including environmental and trouble panels), limitations of the simulator, and minimum equipment required for each course of training.

6. A special Line Oriented Flight Training (LOFT) program to facilitate the transition from the simulator to line flying. This LOFT program consists of at least a 4-hour course of training for each flightcrew. It also contains at least two representative flight segments of the operator's route. One of the flight segments contains strictly normal operating procedures from push back at one airport to arrival at another. Another flight
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segment contains training in appropriate abnormal and emergency flight operations.

LEVEL B
Training and Checking Permitted
1. Recency of experience (§121.439).
2. Night takeoffs and landings (part 121, appendix E).
3. Landings in a proficiency check without the landing on the line requirements (§121.441).

Simulator Requirements
1. Aerodynamic programing to include:
   a. Ground effect—for example, roundout, flare, and touchdown. This requires data on lift, drag, and pitching moment in ground effect.
   b. Ground reaction—Reaction of the airplane upon contact with the runway during landing to include strut deflections, tire friction, and side forces.
   c. Ground handling characteristics—steering inputs to include crosswind, braking, thrust reversing, deceleration, and turning radius.
2. Minimum of 3-axis freedom of motion systems.
3. Level B landing maneuver test guide to verify simulator data with actual airplane flight test data, and provide simulator performance tests for Level B initial approval.
4. Multichannel recorders capable of recording Level B performance tests.

Visual Requirements
1. Visual system compatibility with aerodynamic programing.
2. Visual system response time from pilot control input to visual system output shall not exceed 300 milliseconds more than the movement of the airplane to a similar input. Visual system response time is defined as the completion of the visual display scan of the first video field containing different information resulting from an abrupt control input.
3. A means of recording the visual response time for comparison with airplane data.
4. Visual cues to assess sink rate and depth perception during landings.
5. Visual scene to instrument correlation to preclude perceptible lags.

LEVEL C
Training and Checking Permitted
1. For all pilots, transition training between airplanes in the same group, and for a pilot in command the certification check required by §61.153(g) this chapter.
2. Upgrade to pilot-in-command training and the certification check when the pilot—
   a. Has previously qualified as second in command in the equipment to which the pilot is upgrading;
   b. Has at least 500 hours of actual flight time while serving as second in command in an airplane of the same group; and
   c. Is currently serving as second in command in an airplane in this same group.
3. Initial pilot-in-command training and the certification check when the pilot—
   a. Is currently serving as second in command in an airplane of the same group;
   b. Has a minimum of 2,500 flight hours as second in command in an airplane of the same group; and
   c. Has served as second in command on at least two airplanes of the same group.
4. For all second-in-command pilot applicants who meet the aeronautical experience requirements of §61.159 of this chapter in the airplane, the initial and upgrade training and checking required by this part, and the certification check requirements of §61.153 of this chapter.

Simulator Requirements
1. Representative crosswind and three-dimensional windshear dynamics based on airplane related data.
2. Representative stopping and directional control forces for at least the following runway conditions based on airplane related data:
   a. Dry.
   b. Wet.
   c. Icy.
   d. Patchy wet.
   e. Patchy icy.
   f. Wet on rubber residue in touchdown zone.
3. Representative brake and tire failure dynamics (including antiskid) and decreased brake efficiency due to high brake temperatures based on airplane related data.
4. A motion system which provides motion cues equal to or better than those provided by a six-axis freedom of motion system.
5. Operational principal navigation systems, including electronic flight instrument systems, INS, and OMEGA, if applicable.
6. Means for quickly and effectively testing simulator programing and hardware.
7. Expanded simulator computer capacity, accuracy, resolution, and dynamic response to meet Level C demands. Resolution equivalent to that of at least a 32-bit word length computer is required for critical aerodynamic programs.
8. Timely permanent update of simulator hardware and programing subsequent to airplane modification.
9. Sound of precipitation and significant airplane noises perceptible to the pilot during normal operations and the sound of a crash when the simulator is landed in excess of landing gear limitations.
10. Aircraft control feel dynamics shall duplicate the airplane simulated. This shall be determined by comparing a recording of the control feel dynamics of the simulator to
airplane measurements in the takeoff, cruise, and landing configuration.

11. Relative responses of the motion system, visual system, and cockpit instruments shall be coupled closely to provide integrated sensory cues. These systems shall respond to abrupt pitch, roll, and yaw inputs at the pilot’s position within 150 milliseconds of the time, but not before the time, when the airplane would respond under the same conditions. Visual scene changes from steady state disturbance shall not occur before the resultant motion onset but within the system dynamic response tolerance of 150 milliseconds. The test to determine compliance with these requirements shall include simultaneously recording the analog output from the pilot’s control column and rudders, the output from an accelerometer attached to the motion system platform located at an acceptable location near the pilot’s seat, the output signal to the visual system display (including visual system analog delays), and the output signal to the pilot’s attitude indicator or an equivalent test approved by the Administrator. The test results in a comparison of a recording of the simulator’s response to actual airplane response data in the takeoff, cruise, and landing configuration.

Visual Requirements

1. Dusk and night visual scenes with at least three specific airport representations, including a capability of at least 10 levels of occulting, general terrain characteristics, and significant landmarks.
2. Radio navigation aids properly oriented to the airport runway layout.
3. Test procedures to quickly confirm visual system color, RVR, focus, intensity, level horizon, and attitude as compared to the simulator attitude indicator.
4. For the approach and landing phase of flight, at and below an altitude of 2,000 feet height above the airport (HAA) and within a radius of 10 miles from the airport, weather representations including the following:
   a. Variable cloud density.
   b. Partial obscuration of ground scenes; that is, the effect of a scattered to broken cloud deck.
   c. Gradual break out.
   d. Patchy fog.
   e. The effect of fog on airport lighting.
   f. Category II and III weather conditions.
5. Continuous minimum visual field of view of 75° horizontal and 30° vertical per pilot seat. Visual gaps shall occur only as they would in the airplane simulated or as required by visual system hardware. Both pilot seat visual systems shall be able to be operated simultaneously.
6. Capability to present ground and air hazards such as another airplane crossing the active runway or converging airborne traffic.

Visual Requirements

1. Daylight, dusk, and night visual scenes with sufficient scene content to recognize a specific airport, the terrain, and major landmarks around that airport and to successfully accomplish a visual landing. The daylight visual scene must be part of a total daylight cockpit environment which at least represents the amount of light in the cockpit.
on an overcast day. For the purpose of this rule, daylight visual system is defined as a visual system capable of producing, as a minimum, full color presentations, scene content comparable in detail to that produced by 4,000 edges or 1,000 surfaces for daylight and 4,000 light points for night and dusk scenes, 6-foot lamberts of light at the pilot's eye (highlight brightness), 3-arc minutes resolution for the field of view at the pilot's eye, and a display which is free of apparent quantization and other distracting visual effects while the simulator is in motion. The simulation of cockpit ambient lighting shall be dynamically consistent with the visual scene displayed. For daylight scenes, such ambient lighting shall neither "washout" the displayed visual scene nor fall below 5-foot lamberts of light as reflected from an approach plate at knee height at the pilot's station and/or 2-foot lamberts of light as reflected from the pilot's face.

2. Visual scenes portraying representative physical relationships which are known to cause landing illusions in some pilots, including short runway, landing over water, runway gradient, visual topographic features, and rising terrain.

3. Special weather representations which include the sound, visual, and motion effects of entering light, medium, and heavy precipitation near a thunderstorm on takeoff, approach, and landings at and below an altitude of 2,000 feet HAA and within a radius of 10 miles from the airport.

4. Level C visual requirements in daylight as well as dusk and night representations.

5. Wet and, if appropriate for the operator, snow-covered runway representations, including runway lighting effects.

6. Realistic color and directionality of airport lighting.

7. Weather radar presentations in aircraft where radar information is presented on the pilot's navigation instruments. (Secs. 313, 601, 603, 604, Federal Aviation Act of 1958, as amended (49 U.S.C. 1354, 1421, 1423, 1424); sec. 6(c), Department of Transportation Act (49 U.S.C. 1652(c)))


### Appendix I to Part 121—Drug Testing Program

This appendix contains the standards and components that must be included in an antidrug program required by this chapter.

I. DOT Procedures. Each employer shall ensure that drug testing programs conducted pursuant to 14 CFR parts 65, 121, and 135 comply with the requirements of this appendix and the "Procedures for Transportation Workplace Drug Testing Programs" published by the Department of Transportation (DOT) (49 CFR part 40). An employer may not use or contract with any drug testing laboratory that is not certified by the Department of Health and Human Services (DHHS) pursuant to the DHHS "Mandatory Guidelines for Federal Workplace Drug Testing Programs" (53 FR 11970, April 11, 1988 as amended by 59 FR 29908, June 9, 1994).

II. Definitions. For the purpose of this appendix, the following definitions apply:

- Accident means an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage.

- Annualized rate for the purposes of announced testing of employees based on random selection means the percentage of specimens collection and testing of employees performing a safety-sensitive function during a calendar year. The employer shall determine the annualized rate by referring to the total number of employees performing a safety-sensitive function for the employer at the beginning of the calendar year.

- Contractor company means a company that has employees who perform safety-sensitive functions by contract for an employer.

- DOT agency means an agency (or "operating administration") of the United States Department of Transportation administering regulations requiring drug testing (49 CFR part 61 et al.; 46 CFR part 16; 49 CFR parts 109, 191, 292, 293, 295, 373, 382) in accordance with 49 CFR part 40.

- Employee is a person who performs, either directly or by contract, a safety-sensitive function for an employer, as defined below. Provided, however, that an employee who works for an employer who holds a part 121 certificate and who holds a part 121 certificate is considered to be an employee of the part 121 certificate holder for the purposes of this appendix.

- Employer is a part 121 certificate holder, a part 135 certificate holder, an operator as defined in §135.1(c) of this chapter, or an air traffic control facility not operated by the FAA or by or under contract to the U.S. military. Provided, however, that an employer may use a person who is not included under that employer's drug program to perform a safety-sensitive function, if that person is subject to the requirements of another employer's FAA-approved antidrug program.

- Performing (a safety-sensitive function): an employee is considered to be performing a safety-sensitive function during any period in which he or she is actually performing, ready to perform, or immediately available to perform such function.
Positive rate means the number of positive results for random drug tests conducted under this appendix, plus the number of refusals to take random tests required by this appendix, divided by the total number of random drug tests conducted under this appendix plus the number of refusals to take random tests required by this appendix.

49 CFR part 40, without a genuine inability to provide a specimen (as determined by a medical evaluation), after he or she has received notice of the requirement to be tested in accordance with this appendix, or engaged in conduct that clearly obstructed the testing process. Safety-sensitive function means a function listed in section III of this appendix.

Verified positive drug test result means that an individual failed to provide a urine sample as required by 49 CFR part 40, without a genuine inability to provide a specimen (as determined by a medical evaluation), after he or she has received notice of the requirement to be tested in accordance with this appendix, or engaged in conduct that clearly obstructed the testing process.

Testing Programs'' (49 CFR part 40):

V. Types of Drug Testing Required. Each employer shall conduct the following types of testing in accordance with the procedures set forth in this appendix and the DOT "Procedures for Transportation Workplace Drug Testing Programs" (49 CFR part 40):

A. Pre-employment Testing.

1. Prior to the first time an individual performs a safety-sensitive function for an employer, the employer shall require the individual to undergo testing for prohibited drugs.

2. An employer is permitted to require pre-employment testing of an individual if the following criteria are met:
   (a) The individual previously performed a covered function for the employer;
   (b) The employer removed the individual from the employer’s random testing program conducted under this appendix for reasons other than a verified positive test result on an FAA-mandated drug test or a refusal to submit to such testing; and
   (c) The individual will be returning to the performance of a safety-sensitive function.

3. No employer shall allow an individual required to undergo pre-employment testing under section V, paragraphs A.1 or A.2 of this appendix to perform a safety-sensitive function unless the employer has received a verified negative drug test result for the individual.

4. The employer shall advise each individual applying to perform a safety-sensitive function at the time of application that the individual will be required to undergo pre-employment testing to determine the presence of marijuana, cocaine, opiates, phencyclidine (PCP), and amphetamines, or a metabolite of those drugs in the individual’s system. The employer shall provide this same notification to each individual required by the employer to undergo pre-employment testing under section V, paragraph A.2 of this appendix.

B. Periodic Testing. Each employee who performs a safety-sensitive function for an employer and who is required to undergo a medical examination under part 67 of this chapter shall submit to a periodic drug test. The employee shall be tested for the presence of marijuana, cocaine, opiates, phencyclidine (PCP), and amphetamines, or a metabolite of those drugs during the first calendar year of implementation of the employer’s antidrug program. The test shall be conducted in conjunction with the first medical evaluation of the employee or in accordance with an alternative method for collecting periodic test specimens detailed in an employer’s approved antidrug program. An employer may discontinue periodic testing of its employees after the first calendar year of implementation of the employer’s antidrug program when the employer has implemented an announced testing program based on random selection of employees.
C. Random Testing.

1. Except as provided in paragraphs 2-4 of this section, the minimum annual percentage rate for random drug testing shall be 50 percent of all covered employees.

2. The Administrator's decision to increase or decrease the minimum annual percentage rate for random drug testing is based on the reported positive rate for the entire industry. All information used for this determination is drawn from the statistical reports required by section X of this appendix. In order to ensure reliability of the data, the Administrator considers the quality and completeness of the reported data, may obtain additional information or reports from employers, and may make appropriate modifications in calculating the industry positive rate for random drug testing of covered employees. The new minimum annual percentage rate for random drug testing shall be published in the Federal Register. The minimum annual percentage rate for random drug testing shall be based on the total number of covered employees to be tested, which may be calculated for each individual employer or may be based on the total number of covered employees covered by the consortium who are subject to random drug testing at the same minimum annual percentage rate under this part or any DOT drug testing rule.

7. Each employer shall ensure that random drug tests conducted under this appendix are unannounced and that the dates for administering random tests are spread reasonably throughout the calendar year.

8. If a given covered employee is subject to random drug testing under the drug testing rules of more than one DOT agency, the employee shall be subject to random drug testing at the percentage rate established for the calendar year by the DOT agency regulating more than 50 percent of the employee's functions.

9. If an employer is required to conduct random drug testing under the drug testing rules of more than one DOT agency, the employer may—
   a. Establish separate pools for random selection, with each pool containing the covered employees who are subject to testing at the same required rate; or
   b. Randomly select covered employees for testing at the highest percentage rate established for the calendar year by any DOT agency to which the employer is subject.

10. An employer required to conduct random drug testing under the anti-drug rules of more than one DOT agency shall provide each such agency access to the employer's records of random drug testing as determined to be necessary by the agency to ensure the employer's compliance with the rules.

D. Post-accident Testing. Each employer shall test each employee who performs a safety-sensitive function for the presence of marijuana, cocaine, opiates, phencyclidine (PCP), and amphetamines, or a metabolite of those drugs in the employee's system if that employee has contributed to an accident. The decision not to administer a test under this section must be based on a determination, using the best information available at the time of the determination, that the employee's performance could not have contributed to the accident. The employee shall submit to post-accident testing under this section.

E. Testing Based on Reasonable Cause. Each employer shall test each employee who performs a safety-sensitive function and who is reasonably suspected of using a prohibited drug. An employer may test an employee's specimen for the presence of other prohibited drugs or drug metabolites only in accordance with this appendix and the DOT "Procedures for Transportation Workplace Drug Testing..."
Follow-up Testing. 1. Each employer shall implement a reasonable program of unannounced testing of each individual who has been employed to perform or who has been returned to duty to perform a safety-sensitive function after refusing to submit to a drug test required under this appendix. Not later than 72 hours after receipt of notice of refusal, the employer shall ensure that before an individual is returned to duty to perform a safety-sensitive function, the employer has received a verified negative drug test result for the individual.

G. Follow-up Testing. 1. Each employer shall implement a reasonable program of unannounced testing of each individual who is reasonably suspected of drug use, trained in detection of the symptoms of probable drug use, and who has been hired to perform or who has been returned to the performance of a safety-sensitive function. The Medical Review Officer determines whether drug testing is necessary for the particular employee. Any such alcohol testing must be conducted in accordance with the provisions of 49 CFR part 40.

2. The Medical Review Officer determines whether alcohol testing is necessary for the individual.

3. The employer may direct the employee to undergo testing for alcohol, in addition to follow-up testing at any time after the first six tests have been conducted, if the Medical Review Officer determines that such testing is no longer necessary.

VI. Administrative and Other Matters. A. Collection, Testing, and Rehabilitation Records. Each employer shall maintain all records related to the collection process, including all logbooks and certification statements, for two years. Each employer shall maintain records of employee confirmed positive drug test results, SAP evaluations, and employee rehabilitation for five years. The employer shall maintain records of negative test results for 12 months. The employer shall permit the Administrator or the Administrator's representative to examine these records.

B. Laboratory Inspections. The employer shall contract only with a laboratory that permits pre-award inspections by the employer before the laboratory is awarded a testing contract and unannounced inspections, including examination of any and all records at any time by the employer, the Administrator, or the Administrator's representative.

C. Employee Request for Test of a Split Specimen. 1. Not later than 72 hours after receipt of notice of a verified positive test result, an employee may request that the MRO arrange for testing of the second, "split" specimen obtained during the collection of the primary specimen that resulted in the confirmed positive test result.

2. The split specimen shall be tested in accordance with the procedures in 49 CFR part 40.

3. The MRO shall not delay verification of the primary test result following a request for a split specimen test unless such delay is based on reasons other than the pendency of the split specimen test result. If the primary test result is verified as positive, actions required under this rule (e.g., notification to the Federal Air Surgeon, removal from safety-sensitive position) are not stayed during the 72-hour request period or pending receipt of the split specimen test result.

D. Release of Drug Testing Information. An employer shall release information regarding an employee's drug testing results, evaluation, or rehabilitation to a third party in accordance with the specific, written consent of the employee authorizing release of the information to an identified person, to the Federal Aviation Administration or the Administrator upon receipt of a written request or order, or as required by this appendix. Except as required by law or this appendix, no employer shall release employee information.

E. Refusal to Submit to Testing. 1. Each employee shall notify the FAA within 5 working days of any employee who holds a certificate issued under part 61, part 63, or part 65 of this chapter who has refused to submit to a drug test required under this appendix. Notification should be sent to: Federal Aviation Administration.
Duties.

1. During the MRO's interview with an employee or applicant who has had a confirmed positive drug test result, the MRO shall inquire, and the individual must disclose, whether the individual holds an airman medical certificate issued under part 67 of this chapter or, if an applicant, would be required to hold such certificate in order to perform the duties of the position for which the applicant is applying.

2. The MRO must process employee requests for testing of split specimens in accordance with section VI, paragraph C, of this appendix.

3. The MRO shall advise each employee who receives a verified positive drug test result on or refuses to submit to a drug test required under this appendix of the resources available to the employee in evaluating and resolving problems associated with illegal use of drugs, including the names, addresses, and telephone numbers of substance abuse professionals (SAP) and counseling and treatment programs.

4. The MRO shall ensure that each employee who receives a verified positive drug test result on or refuses to submit to a drug test required under this appendix is evaluated by a SAP to determine if the employee is in need of assistance in resolving problems associated with illegal use of drugs. The MRO may perform this evaluation if the MRO is qualified as a SAP.

5. Prior to recommending that an employee be returned to the performance of a safety-sensitive function after the employee has received a verified positive drug test result on or refused to submit to a drug test required by this appendix, the MRO shall—
   a. Ensure that an employee returning to the performance of a safety-sensitive function has received a return to duty verified negative drug test result on a test conducted under section V., paragraph F of this appendix;
   b. Ensure that each employee has been evaluated in accordance with section VII, paragraph A.4 of this appendix; and
   c. Ensure that the individual demonstrates compliance with any rehabilitation program recommended following the evaluation required under section VII, paragraph A.4 of this appendix.

6. Prior to recommending that an individual be hired to perform a safety-sensitive function after such individual has received a verified positive drug test result on a pre-employment test or has refused to submit to a pre-employment drug test required by this appendix, the MRO shall—
   a. Ensure that an individual has received a verified negative drug test result on a subsequent pre-employment test conducted under section V., paragraph A.5 of this appendix;
   b. Evaluate the individual (if the MRO is qualified to be a SAP), or have the individual evaluated by a SAP, for drug use or abuse; and
   c. Ensure that the individual has complied with the requirements of any rehabilitation program in which the individual participated following the verified positive pre-employment drug test result or the refusal to submit to a pre-employment test.

7. The MRO shall not recommend that a person who fails to satisfy the requirements in section VII, paragraph A.5 or A.6 of this appendix be hired to perform or returned to duty to perform a safety-sensitive function.

B. MRO Determinations. In the case of an employee or applicant who holds an airman medical certificate issued under part 67 of this chapter, or who is or would be required to hold such certificate in order to perform a safety-sensitive function for an employer, the MRO shall take the following actions after verifying a positive drug test result.

1. In addition to the evaluation required in section VII, paragraph A.4 of this appendix, the MRO shall make a determination of probable drug dependence or nondependence as specified in part 67 of this chapter within 10 working days of verifying the test result. If the MRO is unable to make such a determination, he or she should so state in the individual's records.
2. If the MRO determines that an individual is nondependent, the MRO may recommend that the individual be returned to duty or hired to perform safety-sensitive functions subject to the requirements of section VII, paragraph A.5 of this appendix. If the MRO makes a determination of probable drug dependence or cannot make a dependency determination, the MRO shall not recommend that the individual be returned to duty unless and until such individual has been found nondependent by or has received a special issuance medical certificate from the Federal Air Surgeon.

3. After making the determinations in section VII, paragraphs B.1 and B.2 of this appendix, the MRO must forward the names of such individuals with identifying information, the determinations concerning dependence, SAP evaluation (if available), return to duty recommendations, and any supporting information to the Federal Air Surgeon within 12 working days after verifying the positive drug test result of such individuals.

4. All reports required under this section shall be forwarded to the Federal Air Surgeon, Federal Aviation Administration, Attn: Drug Abatement Division (AAM-800), 400 7th Street, SW., Washington, DC 20590.

C. MRO Records. Each MRO shall maintain records concerning drug tests performed under this rule in accordance with the following provisions:

1. All records shall be maintained in confidence and shall be released only in accordance with the provisions of this rule and 49 CFR part 40.

2. Records concerning drug tests confirmed positive by the laboratory shall be maintained for 5 years. Such records include the MRO copies of the custody and control form, medical interviews, documentation of the basis for verifying as negative test results, and copies of documentation confirming as positive by the laboratory, any other documentation concerning the MRO’s verification process, and copies of dependency determinations where applicable of section VII, paragraphs B.1 and B.2 of this appendix. The employer shall implement a reasonable program of initial training for employees. The employee training program must include at least the following elements: display and distribution of informational material; display and distribution of a community service hot-line telephone number for employee assistance; and display and distribution of the employer’s policy regarding drug use in the workplace. The employer’s policy shall include information regarding the consequences under the rule of using drugs while performing safety-sensitive functions subject to the requirements of this rule. Each employee shall receive specific training on specific, contemporaneous
physical, behavioral, and performance indicators of probable drug use in addition to the training specified above. The employer shall ensure that supervisors who will make reasonable cause determinations receive at least 60 minutes of initial training. The employer shall implement a reasonable recurrent training program for supervisory personnel making reasonable cause determinations during subsequent years. The employer shall identify the employee and supervisor EAP training in the employer’s drug testing plan submitted to the FAA for approval.

IX. Employer’s Antidrug Program Plan. A. Schedule for Submission of Plans and Implementation. 1. Each employer shall submit an antidrug program plan to the Federal Aviation Administration, Office of Aviation Medicine, Drug Abatement Division (AAM—800), 400 7th Street, SW., Washington, DC 20590.

2. (a) Any person who applies for a certificate under the provisions of part 121 or part 135 of this chapter after September 19, 1994 shall submit an antidrug program plan to the FAA for approval and must obtain such approval prior to beginning operations under the certificate. The program shall be implemented not later than the date of inception of operations. Contractor employees to a new certificate holder must be subject to an FAA-approved antidrug program within 60 days of the implementation of the employer’s program.

(b) Any person who intends to begin sightseeing operations as an operator under 14 CFR 135.1(c) after September 19, 1994 shall, not later than 60 days prior to the proposed initiation of such operations, submit an antidrug program plan to the FAA for approval. No operator may begin conducting sightseeing flights prior to receipt of approval; the program shall be implemented concurrently with the inception of operations. Contractor employees to a new certificate holder must be subject to an FAA-approved program within 60 days of the implementation of the employer’s program.

(c) Any person who intends to begin air traffic control operations as an operator as defined in 14 CFR 65.46(a)(2) (air traffic controller not operated by the FAA or by or under contract to the U.S. military) after September 19, 1994 shall, not later than 60 days prior to the proposed initiation of such operations, submit an antidrug program plan to the FAA for approval. No air traffic control facility may begin conducting air traffic control operations prior to receipt of approval; the program shall be implemented concurrently with the inception of operations. Contractor employees to a new air traffic control facility must be subject to an FAA-approved program within 60 days of the implementation of the facility’s program.

3. In accordance with this appendix, an entity or individual that holds a repair station certificate issued by the FAA pursuant to part 145 of this chapter and employs individuals who perform a safety-sensitive function pursuant to a primary or direct contract with an employer or an operator may submit an antidrug program plan to the FAA for approval. Each certificated repair station shall implement its approved antidrug program in accordance with its terms.

4. Any entity or individual whose employees perform safety-sensitive functions pursuant to a contract with an employer (as defined in section II of this appendix), and any consortium may submit an antidrug program plan to the FAA for approval on a form and in a manner prescribed by the Administrator.

(a) The plan shall specify the procedures that will be used to comply with the requirements of this appendix.

(b) Each consortium program must provide for reporting changes in consortium membership to the FAA within 10 working days of such changes.

(c) Each contractor or consortium shall implement its antidrug program in accordance with the terms of its approved plan.

5. Each air traffic control facility operating under contract to the FAA shall submit an antidrug program plan to the FAA (specifying the procedures for all testing required by this appendix) not later than November 17, 1994. Each facility shall implement its antidrug program not later than 60 days after approval of the program by the FAA. Employees performing air traffic control duties by contract for the air traffic control facility (i.e., not directly employed by the facility) must be subject to an FAA-approved antidrug program within 60 days of implementation of the air traffic control facility’s program.

6. Each employer, or contractor company that has submitted an antidrug plan directly to the FAA, shall ensure that it is continuously covered by an FAA-approved antidrug program, and shall obtain appropriate approval from the FAA prior to changing programs (e.g., joining another carrier’s program, joining a consortium, or transferring to another consortium).

B. An employer’s antidrug plan must specify the methods by which the employer will comply with the testing requirements of this appendix. The plan must provide the name and address of the laboratory which has been selected by the employer for analysis of the specimens collected during the employer’s antidrug testing program.

C. An employer’s antidrug plan must specify the procedures and personnel the employer will use to ensure that a determination is made as to the veracity of test results and possible legitimate explanations for an employee receiving a verified positive drug test result.

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D. The employer shall consider its antidrug program to be approved by the Administrator, unless notified to the contrary by the FAA, within 60 days after submission of the plan to the FAA.

X. Reporting of Antidrug Program Results. A. Annual reports of antidrug program results shall be submitted to the FAA in the form and manner prescribed by the Administrator by March 15 of the succeeding calendar year for the prior calendar year (January 1 through December 31) in accordance with the provisions below.

1. Each part 121 certificate holder shall submit an annual report each year.
2. Each entity conducting an antidrug program under an FAA-approved antidrug plan, other than a part 121 certificate holder, that has 50 or more employees performing a safety-sensitive function shall submit an annual report to the FAA for that calendar year.

3. The Administrator reserves the right to require that aviation employers not otherwise required to submit annual reports prepare and submit such reports to the FAA. Employers that will be required to submit annual reports under this provision will be notified in writing by the FAA.

B. Each report shall be submitted in the form and manner prescribed by the Administrator. No other form, including another form, including another form and manner prescribed by the Administrator, is acceptable for submission to the FAA.

C. Each report shall be signed by the employer's antidrug program manager or other designated representative.

D. Each report with verified positive drug test results shall include all of the following informational elements:

1. Number of covered employees by employee category.
2. Number of covered employees affected by the antidrug rule of another operating administration identified and reported by number and employee category.
3. Number of specimens collected by type of test and employee category.
4. Number of positive drug test results reported by an MRO by type of test and employee category.
5. Number of negative drug test results reported by a Medical Review Officer (MRO) by type of test, drug, and employee category.
6. Number of negative drug test results reported by an MRO by type of test and employee category.
7. Action taken following a verified positive drug test result(s), by type of action.
8. Number of employees returned to duty during the reporting period after having received a verified positive drug test result on or refused to submit to a drug test required under the FAA rule.
9. Number of employees by employee category with tests verified positive for multiple drugs by an MRO.
10. Number of employees who refused to submit to a drug test and the action taken in response to the refusal(s).
11. Number of covered employees who have received required initial training.
12. Number of supervisory personnel who have received required initial training.
13. Number of supervisors who have received required recurrent training.

E. Each report with only negative drug test results shall include all of the following informational elements. (This report may only be submitted by employers with no verified positive drug test results during the reporting year.)

1. Number of covered employees by employee category.
2. Number of covered employees affected by the antidrug rule of another operating administration identified and reported by number and employee category.
3. Number of specimens collected by type of test and employee category.
4. Number of negative tests reported by an MRO by type of test and employee category.
5. Number of employees who refused to submit to a drug test and the action taken in response to the refusal(s).
6. Number of employees returned to duty during the reporting period after having received a verified positive drug test result on or refused to submit to a drug test required under the FAA rule.
7. Number of covered employees who have received required initial training.
8. Number of supervisory personnel who have received required initial training.
9. Number of supervisors who have received required recurrent training.

F. An FAA-approved consortium may prepare reports on behalf of individual aviation employers for purposes of compliance with this reporting requirement. However, the aviation employer shall sign and submit such a report and shall remain responsible for ensuring the accuracy and timeliness of each report prepared on its behalf by a consortium.

XI. Preemption. A. The issuance of 14 CFR parts 65, 121, and 135 by the FAA preempts any state or local law, rule, regulation, order, or standard covering the subject matter of 14 CFR parts 65, 121, and 135, including but not limited to, drug testing of aviation personnel performing safety-sensitive functions.

B. The issuance of 14 CFR parts 65, 121, and 135 does not preempt provisions of state criminal law that impose sanctions for reckless conduct of an individual that leads to actual loss of life, injury, or damage to property whether such provisions apply specifically to aviation employees or generally to the public.
Federal Aviation Administration, DOT

XII. Employees Located Outside the Territory of the United States. A. No individual shall undergo a drug test required under the provisions of this appendix while located outside the territory of the United States.

1. Each employee who is assigned to perform safety-sensitive functions solely outside the territory of the United States shall be removed from the random testing pool upon the inception of such assignment.

2. Each covered employee who is removed from the random testing pool under this paragraph A shall be returned to the random testing pool when the employee resumes the performance of safety-sensitive functions wholly or partially within the territory of the United States.

B. The provisions of this appendix shall not apply to any person who performs a function listed in section III of this appendix by contract for an employer outside the territory of the United States.


APPENDIX J TO PART 121—ALCOHOL MISUSE PREVENTION PROGRAM

This appendix contains the standards and components that must be included in an alcohol misuse prevention program required by this chapter.

I. GENERAL.

A. Purpose. The purpose of this appendix is to establish programs designed to help prevent accidents and injuries resulting from the misuse of alcohol by employees who perform safety-sensitive functions in aviation.

B. Alcohol testing procedures. Each employer shall ensure that all alcohol testing conducted pursuant to this appendix complies with the procedures set forth in 49 CFR part 40. The provisions of 49 CFR part 40 that address alcohol testing are made applicable to employers by this appendix.

C. Definitions. As used in this appendix—

1. Accident means an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and the time all such persons have disembarked, and in which any person suffers death or serious injury or in which the aircraft receives substantial damage.

2. Administrator means the Administrator of the Federal Aviation Administration or his or her designated representative.

3. Alcohol means the intoxicating agent in beverage alcohol, ethyl alcohol, or other low molecular weight alcohols, including methyl or isopropyl alcohol.

4. Alcohol concentration (or content) means the alcohol in a volume of breath expressed in terms of grams of alcohol per 210 liters of breath as indicated by an evidential breath test under this appendix.

5. Alcohol misuse prevention program means an entity, including a group or association of employers or contractors, that provides alcohol testing as required by this appendix and that acts on behalf of such employers or contractors, provided that it has submitted an alcohol misuse prevention program certification statement to the FAA in accordance with this appendix.

6. Contractor means a company that has employees who perform safety-sensitive functions by contract for an employer.

7. Covered employee means a person who performs, either directly or by contract, a safety-sensitive function listed in section II of this appendix for an employer (as defined below). For purposes of pre-employment testing only, the term “covered employee” includes a person applying to perform a safety-sensitive function.

8. DOT agency means an agency (or ‘operating administration’) of the United States Department of Transportation administering regulations requiring alcohol testing (14 CFR parts 65, 121, and 135; 49 CFR parts 199, 219, and 382) in accordance with 49 CFR part 40.

9. Employer means a part 121 certificate holder; a part 135 certificate holder; an air traffic control facility not operated by the FAA or by or under contract to the U.S. military; and an operator as defined in 14 CFR 135.1(c).

10. Performing (a safety-sensitive function): an employee is considered to be performing a safety-sensitive function during any period in which he or she is actually performing, ready to perform, or immediately available to perform such functions.

11. Refuse to submit (to an alcohol test) means that a covered employee fails to provide adequate breath for testing without a valid medical explanation after he or she has received notice of the requirement to be tested in accordance with this appendix, or engages in conduct that clearly obstructs the testing process.

12. Safety-sensitive function means a function listed in section II of this appendix.

13. Screening test means an analytical procedure to determine whether a covered employee may have a prohibited concentration of alcohol in his or her system.

14. Violation rate means the number of covered employees (as reported under section IV of this appendix) found during random tests given under this appendix to have an alcohol concentration greater than 0.02.

Alcohol use means the consumption of any beverage, mixture, or preparation, including any medication, containing alcohol.
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III. TESTS REQUIRED

A. Pre-employment

1. Prior to the first time a covered employee performs safety-sensitive functions for an employer, the employee shall undergo testing for alcohol. No employer shall allow a covered employee to perform safety-sensitive functions unless the employee has been administered an alcohol test with a result indicating an alcohol concentration less than 0.04. If a pre-employment test result under this paragraph indicates an alcohol concentration of 0.02 or greater but less than 0.04, the provisions of paragraph F of section V of this appendix apply.

2. An employer is not required to administer an alcohol test as required by this paragraph if:
   (a) The employee has undergone an alcohol test required by this appendix or the alcohol misuse rule of another DOT agency under 49 CFR part 40 within the previous 6 months, with a result indicating an alcohol concentration less than 0.04; and
   (b) The employer ensures that no prior employer of the covered employee of whom the employer has knowledge has records of a violation of §65.46a, 121.458, or 135.253 of this chapter or the alcohol misuse rule of another DOT agency within the previous 6 months.

B. Post-accident

1. As soon as practicable following an accident, each employer shall test each surviving covered employee for alcohol if that employee's performance of a safety-sensitive function either contributed to the accident or cannot be completely discounted as a contributing factor to the accident. The decision not to administer a test under this section shall be based on the employer's determination, using the best available information at the time of the determination, that the covered employee's performance could not have contributed to the accident.

2. (a) If a test required by this section is not administered within 2 hours following the accident, the employer shall prepare and maintain on file a record stating the reasons the test was not promptly administered. If a test required by this section is not administered within 8 hours following the accident, the employer shall cease attempts to administer an alcohol test and shall prepare and maintain the same record. Records shall be submitted to the FAA upon request of the Administrator or his or her designee.
   (b) For the years stated in this paragraph, employers who submit MIS reports shall submit to the FAA each record of a test required by this section that is not completed within 8 hours. The employer's records of tests that are not completed within 8 hours shall be submitted to the FAA by March 15, 1996; March 15, 1997; and March 15, 1998 for...
Federal Aviation Administration, DOT

calendar years 1995, 1996, and 1997, respectively. Employers shall append these records to their MIS submissions. Each record shall include the following information:

(i) Type of test (reasonable suspicion/post-accident);

(ii) Triggering event (including date, time, and location);

(iii) Employee category (do not include employee name or other identifying information);

(iv) Reason(s) test could not be completed within 8 hours; and

(v) If blood alcohol testing could have been completed within eight hours, the name, address, and telephone number of the testing site where blood testing could have occurred.

3. A covered employee who is subject to post-accident testing shall remain readily available for such testing or may be deemed by the employer to have refused to submit to testing. Nothing in this section shall be construed to require the delay of necessary medical attention for injured people following an accident or to prohibit a covered employee from leaving the scene of an accident for the period necessary to obtain assistance in responding to the accident or to obtain necessary emergency medical care.

C. Random testing

1. Except as provided in paragraphs 2-4 of this section, the minimum annual percentage rate for random alcohol testing will be 25 percent of the covered employees.

2. The Administrator’s decision to increase or decrease the minimum annual percentage rate for random alcohol testing is based on the violation rate for the entire industry. All information used for this determination is drawn from alcohol MIS reports required by this appendix. In order to ensure reliability of the data, the Administrator considers the quality and completeness of the reported data, may obtain additional information or reports from employers, and may make appropriate modifications in calculating the industry violation rate. Each year, the Administrator will publish in the Federal Register the minimum annual percentage rate for random alcohol testing of covered employees. The new minimum annual percentage rate for random alcohol testing will be applicable starting January 1 of the calendar year following publication.

3. (a) When the minimum annual percentage rate for random alcohol testing is 25 percent or more, the Administrator may lower this rate to 10 percent of all covered employees if the Administrator determines that the data received under the reporting requirements of this appendix for two consecutive calendar years indicate that the violation rate is less than 1.0 percent but equal to or greater than 0.5 percent.

(b) When the minimum annual percentage rate for random alcohol testing is 25 percent or less, and the data received under the reporting requirements of this appendix for that calendar year indicate that the violation rate is equal to or greater than 0.5 percent but less than 1.0 percent, the Administrator will increase the minimum annual percentage rate for random alcohol testing to 25 percent of all covered employees.

4. (a) When the minimum annual percentage rate for random alcohol testing is 10 percent, and the data received under the reporting requirements of this appendix for that calendar year indicate that the violation rate is equal to or greater than 0.5 percent but less than 1.0 percent, the Administrator will increase the minimum annual percentage rate for random alcohol testing to 25 percent of all covered employees.

(b) When the minimum annual percentage rate for random alcohol testing is 25 percent or less, and the data received under the reporting requirements of this appendix for that calendar year indicate that the violation rate is equal to or greater than 1.0 percent, the Administrator will increase the minimum annual percentage rate for random alcohol testing to 50 percent of all covered employees.

5. The selection of employees for random alcohol testing shall be made by a scientifically valid method, such as a random-number table or a computer-based random number generator that is matched with employees’ Social Security numbers, payroll identification numbers, or other comparable identifying numbers. Under the selection process used, each covered employee shall have an equal chance of being tested each time selections are made.

6. The employer shall randomly select a sufficient number of covered employees for testing during each calendar year to equal an annual rate not less than the minimum annual percentage rate for random alcohol testing determined by the Administrator. If the employer conducts random testing through a consortium, the number of employees to be tested may be calculated for each individual employer or may be based on the total number of covered employees who are subject to random alcohol testing at the same minimum annual percentage rate under this appendix or any DOT alcohol testing rule.

7. Each employer shall ensure that random alcohol tests conducted under this appendix are unannounced and that the dates for administering random tests are spread reasonably throughout the calendar year.

8. Each employer shall require that each covered employee who is notified of selection for random testing proceeds to the testing site immediately; provided, however, that if the employee is performing a safety-sensitive function at the time of the notification, the employer shall instead ensure that the employee ceases to perform the safety-
sensitive function and proceeds to the testing site as soon as possible.

9. A covered employee shall only be randomly tested while the employee is performing safety-sensitive functions; just before the employee is required to perform safety-sensitive functions; just after the employee has ceased performing such functions.

10. If a given covered employee is subject to random alcohol testing under the alcohol testing rules of more than one DOT agency, the employee shall be subject to random alcohol testing at the percentage rate established for the calendar year by the DOT agency regulating more than 50 percent of the employee’s functions.

11. If an employer is required to conduct random alcohol testing under the alcohol testing rules of more than one DOT agency, the employer may—
   (a) Establish separate pools for random selection, with each pool containing the covered employees who are subject to testing at the same required rate; or
   (b) Randomly select such employees for testing at the highest percentage rate established for the calendar year by any DOT agency to which the employer is subject.

D. Reasonable Suspicion Testing

1. An employer shall require a covered employee to submit to an alcohol test when the employer has reasonable suspicion to believe that the employee has violated the alcohol misuse prohibitions in §65.46a, 121.458, or 135.253 of this chapter.

2. The employer’s determination that reasonable suspicion exists to require the covered employee to undergo an alcohol test shall be based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech or body odors of the employee. The required observations shall be made by a supervisor who is trained in detecting the symptoms of alcohol misuse.

3. Alcohol testing is authorized by this section only if the observations required by paragraph 2 are made during, just preceding, or just after the period of the work day that the covered employee is required to be in compliance with this rule. An employee may be directed by the employer to undergo reasonable suspicion testing for alcohol only while the employee is performing safety-sensitive functions; just before the employee is to perform safety-sensitive functions; or just after the employee has ceased performing such functions.

4. (a) If a test required by this section is not administered within 2 hours following the determination made under paragraph 2 of this section, the employer shall prepare and maintain on file a record stating the reasons the test was not promptly administered. If a test required by this section is not administered within 8 hours following the determination made under paragraph 2 of this section, the employer shall cease attempts to administer an alcohol test and shall state in the record the reasons for not administering the test.

(b) For the years stated in this paragraph, employers who submit MIS reports shall submit to the FAA each record of a test required by this section that is not completed within 8 hours. The employer’s records of tests that are not completed within 8 hours shall be submitted to the FAA by March 15, 1996; March 15, 1997; and March 15, 1998; for calendar years 1995, 1996, and 1997, respectively. Employers shall append these records to their MIS submissions. Each record shall include the following information:
   (i) Type of test (reasonable suspicion/post-accident);
   (ii) Triggering event (including date, time, and location);
   (iii) Employee category (do not include employee name or other identifying information);
   (iv) Reason(s) test could not be completed within 8 hours; and
   (v) If blood alcohol testing could have been completed within eight hours, the name, address, and telephone number of the testing site where blood testing could have occurred.

(c) Notwithstanding the absence of a reasonable suspicion alcohol test under this section, no covered employee shall report for duty or remain on duty requiring the performance of safety-sensitive functions while the employee is under the influence of or impaired by alcohol, as shown by the behavioral, speech, or performance indicators of alcohol misuse, nor shall an employer permit the covered employee to perform or continue to perform safety-sensitive functions until:
   (1) An alcohol test is administered and the employee’s alcohol concentration measures less than 0.02; or
   (2) The start of the employee’s next regularly scheduled duty period, but not less than 8 hours following the determination made under paragraph 2 of this section that there is reasonable suspicion that the employee has violated the alcohol misuse provisions in §65.46a, 121.458, or 135.253 of this chapter.

(d) Except as provided in paragraph 4(b), no employer shall take any action under this appendix against a covered employee based solely on the employee’s behavior and appearance in the absence of an alcohol test. This does not prohibit an employer with authority independent of this appendix from taking any action otherwise consistent with law.
E. Return to Duty Testing

Each employer shall ensure that before a covered employee returns to duty requiring the performance of a safety-sensitive function after engaging in conduct prohibited in §65.46a, 121.458, or 135.253 of this chapter, the employee shall undergo a return to duty alcohol test with a result indicating an alcohol concentration of less than 0.02.

F. Follow-up Testing

Following a determination under section VI, paragraph C.2 of this appendix that a covered employee is in need of assistance in resolving problems associated with alcohol misuse, each employer shall ensure that the employee is subject to unannounced follow-up alcohol testing as directed by a substance abuse professional in accordance with the provisions of section VI, paragraph C.3(b)(2) of this appendix. A covered employee shall be tested under this paragraph only while the employee is performing safety-sensitive functions; just before the employee is to perform safety-sensitive functions; or just after the employee has ceased performing such functions.

G. Retesting of Covered Employees With an Alcohol Concentration of 0.02 or Greater but Less Than 0.04

Each employer shall retest a covered employee to ensure compliance with the provisions of section V, paragraph F of this appendix, if the employer chooses to permit the employee to perform a safety-sensitive function within 8 hours following the administration of an alcohol test indicating an alcohol concentration of 0.02 or greater but less than 0.04.

IV. HANDLING OF TEST RESULTS, RECORD RETENTION, AND CONFIDENTIALITY

A. Retention of Records

1. General Requirement. Each employer shall maintain records of its alcohol misuse prevention program as provided in this section. The records shall be maintained in a secure location with controlled access.

2. Period of Retention. Each employer shall maintain the records in accordance with the following schedule:

(a) Five years. Records of employee alcohol test results with results indicating an alcohol concentration of 0.02 or greater, records related to other violations of §65.46a, 121.458, or 135.253 of this chapter, documentation of refusals to take required alcohol tests, calibration documentation, employee evaluations and referrals, and copies of any annual reports submitted to the FAA under this appendix shall be maintained for a minimum of 3 years.

(b) Two years. Records related to the collection process (except calibration of evidential breath testing devices) and training shall be maintained for a minimum of 2 years.

(c) One year. Records of all test results below 0.02 shall be maintained for a minimum of 1 year.

3. Types of Records. The following specific records shall be maintained:

(a) Records related to the collection process:

(1) Collection logbooks, if used.

(2) Documents relating to the random selection process.

(3) Calibration documentation for evidential breath testing devices.

(4) Documentation of breath alcohol technician training.

(5) Documents generated in connection with decisions to administer reasonable suspicion alcohol tests.

(6) Documents generated in connection with decisions on post-accident tests.

(7) Documents verifying existence of a medical explanation of the inability of a covered employee to provide adequate breath for testing.

(b) Records related to test results:

(1) The employer's copy of the alcohol test form, including the results of the test;

(2) Documents related to the refusal of any covered employee to submit to an alcohol test required by this appendix.

(3) Documents presented by a covered employee to dispute the result of an alcohol test administered under this appendix.

(c) Records related to other violations of §65.46a, 121.458, or 135.253 of this chapter.

(d) Records related to evaluations:

(1) Records pertaining to a determination by a substance abuse professional concerning a covered employee's need for assistance.

(2) Records concerning a covered employee's compliance with the recommendations of the substance abuse professional.

(3) Records of notifications to the Federal Air Surgeon of violations of the alcohol misuse prohibitions in this chapter by covered employees who hold medical certificates issued under part 67 of this chapter.

(e) Records related to education and training:

(1) Materials on alcohol misuse awareness, including a copy of the employer's policy on alcohol misuse.

(2) Documentation of compliance with the requirements of section VI, paragraph A of this appendix.

(3) Documentation of training provided to supervisors for the purpose of qualifying the supervisors to make a determination concerning the need for alcohol testing based on reasonable suspicion.

(4) Certification that any training conducted under this appendix complies with the requirements for such training.
1. Annual reports summarizing the results of alcohol misuse prevention programs shall be submitted to the FAA in the form and manner prescribed by the Administrator by March 15 of each year covering the previous calendar year (January 1 through December 31) in accordance with the provisions below:
   (a) Each part 121 certificate holder shall submit an annual report each year.
   (b) Each entity conducting an alcohol misuse prevention program under the provisions of this appendix, other than a part 121 certificate holder, that has 50 or more covered employees on January 1 of any calendar year shall submit an annual report to the FAA for that calendar year.
   (c) The Administrator reserves the right to require employers not otherwise required to submit annual reports to prepare and submit such reports to the FAA. Employers that will be required to submit annual reports under this provision will be notified in writing by the FAA.
   2. Each employer that is subject to more than one DOT agency alcohol rule shall identify each employee covered by the regulations of more than one DOT agency. The identification will be by the total number and category of covered function. Prior to conducting any alcohol test on a covered employee subject to the rules of more than one DOT agency, the employer shall determine which DOT agency rule or rules authorizes or requires the test. The test result information shall be directed to the appropriate DOT agency or agencies.
   3. Each employer shall ensure the accuracy and timeliness of each report submitted.
   4. Each report shall be submitted in the form and manner prescribed by the Administrator.
   5. Each report shall be signed by the employer’s alcohol misuse prevention program manager or other designated representative.
   6. Each report that contains information on an alcohol screening test result of 0.02 or greater or violations of the alcohol misuse provisions of §65.46a, 121.458, or 135.253 of this chapter shall include the following informational elements:
      (a) Number of covered employees by employee category.
      (b) Number of covered employees in each category subject to alcohol testing under the alcohol misuse rule of another DOT agency, identified by each agency.
      (c)(1) Number of screening tests by type of test and employee category.
      (2) Number of confirmation tests, by type of test and employee category.
      (d) Number of confirmation alcohol tests indicating an alcohol concentration of 0.02 or greater but less than 0.04 by type of test and employee category.
      (e) Number of confirmation alcohol tests indicating an alcohol concentration of 0.04 or greater, by type of test and employee category.
      (f) Number of persons denied a position as a covered employee following a pre-employment alcohol test indicating an alcohol concentration of 0.04 or greater.
      (g) Number of covered employees with a confirmation alcohol test indicating an alcohol concentration of 0.04 or greater who were returned to duty in covered positions (having complied with the recommendations of a substance abuse professional as described in section V, paragraph E, and section VI, paragraph C of this appendix).
      (h) Number of covered employees who were administered alcohol and drug tests at the same time, with both a positive drug test result and an alcohol test result indicating an alcohol concentration of 0.04 or greater.
      (i) Number of covered employees who were found to have violated other alcohol misuse provisions of §65.46a, 121.458, or 135.253 of this chapter, and the action taken in response to the violation.
      (j) Number of covered employees who refused to submit to an alcohol test required under this appendix, the number of such refusals that were for random tests, and the action taken in response to each refusal.
      (k) Number of supervisors who have received required training during the reporting period in determining the existence of reasonable suspicion of alcohol misuse.
   7. Each report with no screening test results of 0.02 or greater or violations of the alcohol misuse provisions of §65.46a, 121.458, or 135.253 of this chapter shall include the following informational elements. (This report may only be submitted if the program results meet these criteria.)
      (a) Number of covered employees by employee category.
      (b) Number of covered employees in each category subject to alcohol testing under the alcohol misuse rule of another DOT agency, identified by each agency.
      (c) Number of screening tests by type of test and employee category.
      (d) Number of covered employees who engaged in alcohol misuse who were returned to duty in covered positions (having complied with the recommendations of a substance abuse professional as described in section V, paragraph E, and section VI, paragraph C of this appendix).
      (e) Number of covered employees who refused to submit to an alcohol test required under this appendix, and the action taken in response to each refusal.
      (f) Number of supervisors who have received required training during the reporting period in determining the existence of reasonable suspicion of alcohol misuse.
     6. An FAA-approved consortium may prepare reports on behalf of individual aviation
employers for purposes of compliance with this reporting requirement. However, the aviation employer shall sign and submit such a report and shall remain responsible for ensuring the accuracy and timeliness of each report prepared on its behalf by a consortium.

C. Access to Records and Facilities

1. Except as required by law or expressly authorized or required in this appendix, no employer shall release covered employee information that is contained in records required to be maintained under this appendix.

2. A covered employee is entitled, upon written request, to obtain copies of any records pertaining to the employee’s use of alcohol, including any records pertaining to his or her alcohol tests. The employer shall promptly provide the records requested by the employee. Access to an employee’s records shall not be contingent upon payment for records other than those specifically requested.

3. Each employer shall make available copies of all results of alcohol testing conducted under this appendix and any other information pertaining to the employer’s alcohol misuse prevention program, when requested by the Federal Aviation Administration, DOT Pt. 121, App. J, or any DOT agency with regulatory authority over the employer or covered employee.

4. When requested by the National Transportation Safety Board as part of an accident investigation, each employer shall disclose information related to the employer’s administration of a post-accident alcohol test administered following the accident under investigation.

5. Records shall be made available to a subsequent employer upon receipt of written request from the covered employee. Disclosure by the subsequent employer is permitted only as expressly authorized by the terms of the employee’s request.

6. An employer may disclose information required to be maintained under this appendix pertaining to a covered employee to the employee or to the decisionmaker in a lawsuit, grievance, or other proceeding initiated by or on behalf of the individual and arising from the results of an alcohol test administered under this appendix or from the employer’s determination that the employee engaged in conduct prohibited under §65.46a, 121.458, or 135.253 of this chapter (including, but not limited to, a worker’s compensation, unemployment compensation, or other proceeding relating to a benefit sought by the employee).

7. An employer shall release information regarding a covered employee’s records as directed by the specific, written consent of the employee authorizing release of the information to an identified person. Release of such information by the person receiving the information is permitted only in accordance with the terms of the employee's consent.

8. Each employer shall permit access to all facilities utilized in complying with the requirements of this appendix to the Secretary of Transportation or any DOT agency with regulatory authority over the employer or any of its covered employees.

V. CONSEQUENCES FOR EMPLOYEES ENGAGING IN ALCOHOL-RELATED CONDUCT

A. Removal From Safety-sensitive Function

1. Except as provided in section VI of this appendix, no covered employee shall perform safety-sensitive functions if the employee has engaged in conduct prohibited by §65.46a, 121.458, or 135.253 of this chapter or an alcohol misuse rule of another DOT agency.

2. No employer shall permit any covered employee to perform safety-sensitive functions if the employer has determined that the employee has violated this paragraph.

B. Permanent Disqualification From Service

An employee who violates §65.46a(c), 121.458(c), or 135.253(c) of this chapter, or who engages in alcohol use that violates another alcohol misuse provision of §65.46a, 121.458, or 135.253 of this chapter and had previously engaged in alcohol use that violated the provisions of §65.46a, 121.458, or 135.253 of this chapter after becoming subject to such prohibitions is permanently precluded from performing for an employer the safety-sensitive duties the employee performed before such violation.

C. Notice to the Federal Air Surgeon

1. An employer who determines that a covered employee who holds an airman medical certificate issued under part 67 of this chapter engaged in alcohol use that violated the alcohol misuse provisions of §65.46a, 121.458, or 135.253 of this chapter shall notify the Federal Air Surgeon within 2 working days.

2. Each such employer shall forward to the Federal Air Surgeon a copy of the report of any evaluation performed under the provisions of section VI of this appendix within 2 working days of the employer’s receipt of the report.

3. All documents shall be sent to the Federal Air Surgeon, Office of Aviation Medicine, Drug Abatement Division (AAM-800), 400 7th Street SW., Washington, DC 20590.

4. No covered employee who holds a part 67 airman medical certificate shall perform safety-sensitive duties for an employer following a violation until and unless the Federal Air Surgeon has recommended that the employee be permitted to perform such duties.
D. Notice of Refusals

1. Except as provided in subparagraph 2 of this paragraph D, each employer shall notify the FAA within 5 working days of any covered employee who holds a certificate issued under 14 CFR part 61, part 63, or part 65 who has refused to submit to an alcohol test required under this appendix. Notifications should be sent to: Federal Aviation Administration, Aviation Standards National Field Office, Airmen Certification Branch, A.V.N.-460, P.O. Box 25082, Oklahoma City, OK 73125.

2. An employer is not required to notify the above office of refusals to submit to pre-employment alcohol tests or refusals to submit to return to duty tests.

E. Required Evaluation and Testing

No covered employee who has engaged in conduct prohibited by §65.46a, 121.68, or 135.133 of this chapter shall perform safety-sensitive functions unless the employee has met the requirements of section VI, paragraph C of this appendix. No employer shall permit a covered employee who has engaged in such conduct to perform safety-sensitive functions unless the employee has met the requirements of section VI, paragraph C of this appendix.

F. Other Alcohol-Related Conduct

1. No covered employee tested under the provisions of section III of this appendix who is found to have an alcohol concentration of 0.02 or greater but less than 0.04 shall perform or continue to perform safety-sensitive functions for an employer, nor shall an employer permit the employee to perform or continue to perform safety-sensitive functions, until:
   (a) The employee’s alcohol concentration measures less than 0.02; or
   (b) The start of the employee’s next regularly scheduled duty period, but not less than 8 hours following administration of the test.

2. Except as provided in subparagraph 1 of this paragraph, no employer shall take any action under this rule against an employee based solely on test results showing an alcohol concentration less than 0.04. This does not prohibit an employer with authority independent of this rule from taking any action otherwise consistent with law.

VI. ALCOHOL MISUSE INFORMATION, TRAINING, AND REFERRAL

A. Employer Obligation to Promulgate a Policy on the Misuse of Alcohol

1. General requirements. Each employer shall provide educational materials that explain these alcohol misuse requirements and the employer’s policies and procedures with respect to meeting those requirements.

(a) The employer shall ensure that a copy of these materials is distributed to each covered employee prior to the start of alcohol testing under the employer’s FAA-mandated alcohol misuse prevention program and to each person subsequently hired for or transferred to a covered position.

(b) Each employer shall provide written notice to representatives of employee organizations of the availability of this information.

(c) The materials to be made available to employees shall include detailed discussion of at least the following:
   (a) The identity of the person designated by the employer to answer employee questions about the materials.
   (b) The categories of employees who are subject to the provisions of these alcohol misuse requirements.
   (c) Sufficient information about the safety-sensitive functions performed by those employees to make clear what period of the work day the covered employee is required to be in compliance with these alcohol misuse requirements.
   (d) Specific information concerning employee conduct that is prohibited by this chapter.
   (e) The circumstances under which a covered employee will be tested for alcohol under this appendix.
   (f) The procedures that will be used to test for the presence of alcohol, protect the employee and the integrity of the breath testing process, safeguard the validity of the test results, and ensure that those results are attributed to the correct employee.
   (g) The requirement that a covered employee submit to alcohol tests administered in accordance with this appendix.
   (h) An explanation of what constitutes a refusal to submit to an alcohol test and the attendant consequences.
   (i) The consequences for covered employees found to have violated the prohibitions in this chapter, including the requirement that the employee be immediately removed from performing safety-sensitive functions, and the procedures under section VI of this appendix.
   (j) The consequences for covered employees found to have an alcohol concentration of 0.02 or greater but less than 0.04.

(k) Information concerning the effects of alcohol misuse on an individual’s health, work, and personal life; signs and symptoms of an alcohol problem; and available methods of evaluating and resolving problems associated with the misuse of alcohol; and intervening when an alcohol problem is suspected, including confrontation, referral to any available employee assistance program, and/or referral to management.

(l) Optional provisions. The materials supplied to covered employees may also include information on additional employer policies...
with respect to the use or possession of alcohol, including any consequences for an employee found to have a specified alcohol level, that are based on the employer’s authority independent of this appendix. Any such additional policies or consequences must be clearly and obviously described as being based on independent authority.

B. Training for Supervisors

Each employer shall ensure that persons designated to determine whether reasonable suspicion exists to require a covered employee to undergo alcohol testing under section II of this appendix receive at least 60 minutes of training on the physical, behavioral, speech, and performance indicators of probable alcohol misuse.

C. Referral, Evaluation, and Treatment

1. Each covered employee who has engaged in conduct prohibited by § 65.46a, 121.458, or 135.253 of this chapter shall be evaluated by the employer of the resources available to the employee in evaluating and resolving problems associated with the misuse of alcohol, including the names, addresses, and telephone numbers of substance abuse professionals and counseling and treatment programs.

2. Each covered employee who engages in conduct prohibited under § 65.46a, 121.458, or 135.253 of this chapter shall be evaluated before a covered employee returns to duty requiring the performance of a safety-sensitive function after engaging in conduct prohibited by § 65.46a, 121.458, or 135.253 of this chapter, the employee shall undergo a return-to-duty alcohol test with a result indicating an alcohol concentration of less than 0.02.

In addition, each covered employee identified as needing assistance in resolving problems associated with alcohol misuse—

(i) Shall be evaluated by a substance abuse professional to determine whether the employee has properly followed any rehabilitation program prescribed under subparagraph 2 of this paragraph, and

(ii) Shall be subject to unannounced follow-up alcohol tests administered by the employer following the employee’s return to duty. The number and frequency of such follow-up testing shall be determined by a substance abuse professional, but shall consist of at least six tests in the first 12 months following the employee’s return to duty. The employer may direct the employee to undergo testing for drugs (both return to duty and follow-up), in addition to alcohol testing, if the substance abuse professional determines that drug testing is necessary for the particular employee. Any such drug testing shall be conducted in accordance with the requirements of 49 CFR part 40. Follow-up testing shall not exceed 60 months from the date of the employee’s return to duty. The substance abuse professional may terminate the requirement for follow-up testing at any time after the first six tests have been administered, if the substance abuse professional determines that such testing is no longer necessary.

3. (a) Before a covered employee returns to duty requiring the performance of a safety-sensitive function after engaging in conduct prohibited by § 65.46a, 121.458, or 135.253 of this chapter, the employee shall undergo a return-to-duty alcohol test with a result indicating an alcohol concentration of less than 0.02.

(b) The employer or a person under contract to provide treatment for alcohol problems on behalf of the employer—

1. Each employer shall submit an alcohol misuse prevention program (AMPP) certification statement as prescribed in paragraph B of section VII of this appendix, in duplicate, to the FAA, Office of Aviation Medicine, Drug Abatement Division (AAM—900), 400 7th Street SW., Washington, DC 20590, in accordance with the schedule below.

(a) Each employer that holds a part 121 certificate, each employer that holds a part

VII. EMPLOYER’S ALCOHOL MISUSE PREVENTION PROGRAM

A. Schedule for Submission of Certification Statements and Implementation

1. Each employer shall submit an alcohol misuse prevention program (AMPP) certification statement as prescribed in paragraph B of section VII of this appendix, in duplicate, to the FAA, Office of Aviation Medicine, Drug Abatement Division (AAM—900), 400 7th Street SW., Washington, DC 20590, in accordance with the schedule below.

(a) Each employer that holds a part 121 certificate, each employer that holds a part
135 certificate and directly employs more than 50 covered employees, and each air traffic control facility affected by this rule shall submit a certification statement to the FAA by July 1, 1995. Each employer must implement an AMPP meeting the requirements of this appendix on January 1, 1995. Contractor employees to these employers must be subject to an AMPP meeting the requirements of this appendix on July 1, 1995. Contractor employees to these employers must be subject to an AMPP meeting the requirements of this appendix by January 1, 1995.

(c) Each employer that holds a part 135 certificate and directly employs 11 to 50 covered employees shall submit a certification statement to the FAA by January 1, 1995. Each employer must implement an AMPP meeting the requirements of this appendix by July 1, 1995. Contractor employees to these employers must be subject to an AMPP meeting the requirements of this appendix by July 1, 1995.

2. A company providing covered employees by contract to employers may be authorized by the FAA to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each contractor company that establishes an AMPP shall implement its AMPP in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any contractor company that fails to properly implement its AMPP.

(b) No employer shall use a contractor company’s employee who is not subject to the employer’s AMPP unless the employer has first determined that the employee is subject to the contractor company’s FAA-mandated AMPP.

3. A consortium may be authorized to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each consortium that so certifies shall implement the AMPP on behalf of the consortium members in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any consortium that fails to properly implement the AMPP.

(b) Each employer that participates in an FAA-approved consortium remains individually responsible for ensuring compliance with the provisions of these alcohol misuse requirements and must maintain all records required under section IV of this appendix.

(c) Each consortium shall notify the FAA of any membership termination within 10 days of such termination.

4. Any person who applies for a certificate under the provisions of parts 121 or 135 of this chapter after the effective date of the final rule shall submit an alcohol misuse prevention program (AMPP) certification statement to the FAA prior to beginning operations pursuant to the certificate. The AMPP shall be implemented concurrently with beginning such operations or on the date specified in paragraph A.1. of this section, whichever is later. Contractor employees to a new certificate holder must be subject to an FAA-mandated AMPP within 180 days of the implementation of the employer’s AMPP.

5. Any person who intends to begin air traffic control operations as an employer as defined in 14 CFR 135.1(c) shall submit a certification statement to the FAA by July 1, 1995. Each employer must implement an AMPP meeting the requirements of this appendix by July 1, 1995. Contractor employees to these employers must be subject to an AMPP meeting the requirements of this appendix by July 1, 1995.

2. A company providing covered employees by contract to employers may be authorized by the FAA to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each contractor company that establishes an AMPP shall implement its AMPP in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any contractor company that fails to properly implement its AMPP.

(b) No employer shall use a contractor company’s employee who is not subject to the employer’s AMPP unless the employer has first determined that the employee is subject to the contractor company’s FAA-mandated AMPP.

3. A consortium may be authorized to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each consortium that so certifies shall implement the AMPP on behalf of the consortium members in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any consortium that fails to properly implement the AMPP.

(b) Each employer that participates in an FAA-approved consortium remains individually responsible for ensuring compliance with the provisions of these alcohol misuse requirements and must maintain all records required under section IV of this appendix.

(c) Each consortium shall notify the FAA of any membership termination within 10 days of such termination.

4. Any person who applies for a certificate under the provisions of parts 121 or 135 of this chapter after the effective date of the final rule shall submit an alcohol misuse prevention program (AMPP) certification statement to the FAA prior to beginning operations pursuant to the certificate. The AMPP shall be implemented concurrently with beginning such operations or on the date specified in paragraph A.1. of this section, whichever is later. Contractor employees to a new certificate holder must be subject to an FAA-mandated AMPP within 180 days of the implementation of the employer’s AMPP.

5. Any person who intends to begin air traffic control operations as an employer as defined in 14 CFR 135.1(c) shall submit a certification statement to the FAA by July 1, 1995. Each employer must implement an AMPP meeting the requirements of this appendix by July 1, 1995. Contractor employees to these employers must be subject to an AMPP meeting the requirements of this appendix by July 1, 1995.

2. A company providing covered employees by contract to employers may be authorized by the FAA to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each contractor company that establishes an AMPP shall implement its AMPP in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any contractor company that fails to properly implement its AMPP.

(b) No employer shall use a contractor company’s employee who is not subject to the employer’s AMPP unless the employer has first determined that the employee is subject to the contractor company’s FAA-mandated AMPP.

3. A consortium may be authorized to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each consortium that so certifies shall implement the AMPP on behalf of the consortium members in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any consortium that fails to properly implement the AMPP.

(b) Each employer that participates in an FAA-approved consortium remains individually responsible for ensuring compliance with the provisions of these alcohol misuse requirements and must maintain all records required under section IV of this appendix.

(c) Each consortium shall notify the FAA of any membership termination within 10 days of such termination.

4. Any person who applies for a certificate under the provisions of parts 121 or 135 of this chapter after the effective date of the final rule shall submit an alcohol misuse prevention program (AMPP) certification statement to the FAA prior to beginning operations pursuant to the certificate. The AMPP shall be implemented concurrently with beginning such operations or on the date specified in paragraph A.1. of this section, whichever is later. Contractor employees to a new certificate holder must be subject to an FAA-mandated AMPP within 180 days of the implementation of the employer’s AMPP.

5. Any person who intends to begin air traffic control operations as an employer as defined in 14 CFR 135.1(c) shall submit a certification statement to the FAA by July 1, 1995. Each employer must implement an AMPP meeting the requirements of this appendix by July 1, 1995. Contractor employees to these employers must be subject to an AMPP meeting the requirements of this appendix by July 1, 1995.

2. A company providing covered employees by contract to employers may be authorized by the FAA to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each contractor company that establishes an AMPP shall implement its AMPP in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any contractor company that fails to properly implement its AMPP.

(b) No employer shall use a contractor company’s employee who is not subject to the employer’s AMPP unless the employer has first determined that the employee is subject to the contractor company’s FAA-mandated AMPP.

3. A consortium may be authorized to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each consortium that so certifies shall implement the AMPP on behalf of the consortium members in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any consortium that fails to properly implement the AMPP.

(b) Each employer that participates in an FAA-approved consortium remains individually responsible for ensuring compliance with the provisions of these alcohol misuse requirements and must maintain all records required under section IV of this appendix.

(c) Each consortium shall notify the FAA of any membership termination within 10 days of such termination.

4. Any person who applies for a certificate under the provisions of parts 121 or 135 of this chapter after the effective date of the final rule shall submit an alcohol misuse prevention program (AMPP) certification statement to the FAA prior to beginning operations pursuant to the certificate. The AMPP shall be implemented concurrently with beginning such operations or on the date specified in paragraph A.1. of this section, whichever is later. Contractor employees to a new certificate holder must be subject to an FAA-mandated AMPP within 180 days of the implementation of the employer’s AMPP.

5. Any person who intends to begin air traffic control operations as an employer as defined in 14 CFR 135.1(c) shall submit a certification statement to the FAA by July 1, 1995. Each employer must implement an AMPP meeting the requirements of this appendix by July 1, 1995. Contractor employees to these employers must be subject to an AMPP meeting the requirements of this appendix by July 1, 1995.

2. A company providing covered employees by contract to employers may be authorized by the FAA to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each contractor company that establishes an AMPP shall implement its AMPP in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any contractor company that fails to properly implement its AMPP.

(b) No employer shall use a contractor company’s employee who is not subject to the employer’s AMPP unless the employer has first determined that the employee is subject to the contractor company’s FAA-mandated AMPP.

3. A consortium may be authorized to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of paragraph B of section VII of this appendix directly to the FAA. Each consortium that so certifies shall implement the AMPP on behalf of the consortium members in accordance with the provisions of this appendix.

(a) The FAA may revoke its authorization in the case of any consortium that fails to properly implement the AMPP.

(b) Each employer that participates in an FAA-approved consortium remains individually responsible for ensuring compliance with the provisions of these alcohol misuse requirements and must maintain all records required under section IV of this appendix.

(c) Each consortium shall notify the FAA of any membership termination within 10 days of such termination.

4. Any person who applies for a certificate under the provisions of parts 121 or 135 of this chapter after the effective date of the final rule shall submit an alcohol misuse prevention program (AMPP) certification statement to the FAA prior to beginning operations pursuant to the certificate. The AMPP shall be implemented concurrently with beginning such operations or on the date specified in paragraph A.1. of this section, whichever is later. Contractor employees to a new certificate holder must be subject to an FAA-mandated AMPP within 180 days of the implementation of the employer’s AMPP.

5. Any person who intends to begin air traffic control operations as an employer as defined in 14 CFR 135.1(c) shall submit a certification statement to the FAA by July 1, 1995. Each employer must implement an AMPP meeting the requirements of this appendix by July 1, 1995. Contractor employees to these employers must be subject to an AMPP meeting the requirements of this appendix by July 1, 1995.
join a consortium or another carrier's program, change consortium, etc.) prior to the effective date of such change. The employer or contractor company must ensure that it is continuously covered by an FAA-mandated alcohol misuse prevention program.

B. Required Content of AMPP Certification Statements

1. Each AMPP certification statement submitted by an employer or a contractor company shall provide the following information:
   (a) The name, address, and telephone number of the employer/contractor company and for the employer/contractor company AMPP manager;
   (b) FAA operating certificate number (if applicable);
   (c) The date on which the employer or contractor company will implement its AMPP;
   (d) If the submitter is a consortium member, the identity of the consortium; and
   (e) A statement signed by an authorized representative of the employer or contractor company certifying an understanding of and agreement to comply with the provisions of the FAA's alcohol misuse prevention regulations.

2. Each consortium certification statement shall provide the following information:
   (a) The name, address, and telephone number of the consortium's AMPP manager;
   (b) A list of the specific services the consortium will be providing in implementation of FAA-mandated AMPPs (e.g., random testing, SAP).
   (c) A statement signed by an authorized representative of the consortium certifying an understanding of and agreement to comply with the provisions of the FAA's alcohol misuse prevention regulations.

VIII. EMPLOYEES LOCATED OUTSIDE THE U.S.

A. No covered employee shall be tested for alcohol misuse while located outside the territory of the United States.

1. Each covered employee who is assigned to perform safety-sensitive functions solely outside the territory of the United States shall be removed from the random testing pool when the employee resumes the performance of safety-sensitive functions wholly or partially within the territory of the United States.

2. Each covered employee who is removed from the random testing pool under this paragraph shall be returned to the random testing pool when the employee resumes the performance of safety-sensitive functions.

B. The provisions of this appendix shall not apply to any person who performs a safety-sensitive function by contract for an employer outside the territory of the United States.


EFFECTIVE DATE NOTE: By Amdt. 121±237, 60 FR 24706, May 10, 1995, part 121, was renumbered by suspending appendix J, sec. III, subsection A ("Pre-employment"), effective May 10, 1995.

APPENDIX K TO PART 121—PERFORMANCE REQUIREMENTS FOR CERTAIN TURBOPROPULSER POWERED AIRPLANES

1. Applicability. This appendix specifies requirements for the following turbopropeller powered airplanes that must comply with the Airplane Performance Operating Limitations in §§121.189 through 121.197:

a. After December 20, 2010, each airplane manufactured before March 20, 1997 and type certificated in the:
   i. Normal category before July 1, 1970, and meets special conditions issued by the Administrator for airplanes intended for use in operations under part 135 of this chapter.
   iii. Normal category, and complies with the additional airworthiness standards in appendix A of part 135 of this chapter.
   iv. Normal category, and complies with section 1(a) or 1(b) of SFAR No. 41 of 14 CFR part 21.

b. After March 20, 1997, each airplane:
   i. Type certificated prior to March 29, 1995, in the commuter category.
   ii. Manufactured on or after March 20, 1997, and that was type certificated in the normal category, and complies with the requirements described in paragraphs 1.a.iii through 1.b.ii of this appendix.

2. Background. Sections 121.157 and 121.173(b) require that the airplanes operated under this part and described in paragraph 1.a.ii of this appendix, comply with the Airplane Performance Operating Limitations in §§121.189 through 121.197. Airplanes described in §121.157(f) and paragraph 1.a of this appendix must comply on and after December 20, 2010. Airplanes described under this part must comply on and after March 20, 1997. (Airplanes type certificated in the normal category, and in accordance with SFAR No. 41 of 14 CFR part 21, as described in paragraph 1.a.iv of this appendix, may not be produced after October 17, 1991.)

3. References. Unless otherwise specified, references in this appendix to sections of part 23 of this chapter are to those sections...
4. **Interim Airplane Performance Operating Limitations.**
   a. Until December 20, 2010, airplanes described in paragraph 1.a of this appendix may continue to comply with the requirements in subpart I of part 135 and §135.181(a)(2) of this chapter that apply to small, nontransport category airplanes.
   b. Until March 20, 1997, airplanes described in paragraph 1.b.i of this appendix may continue to comply with the requirements in subpart I of part 135 of this chapter that apply to commuter category airplanes.

5. **Final Airplane Performance Operating Limitations.**
   a. Through an amended type certification program or a supplemental type certification program, each airplane described in paragraph 1.a and 1.b.ii of this appendix must be shown to comply with the commuter category performance requirements specified in this appendix, which are included in part 23 of this chapter. Each new revision to a current airplane performance operating limitation for an airplane that is or has been demonstrated to comply, must also be approved by the Administrator. An airplane approved to the requirements of section 1.(b) of SFAR No. 41 of 14 CFR part 21, as described in paragraph 1.a.iv of this appendix, and that has been demonstrated to comply with the additional requirements of section 4.(c) of SFAR No. 41 of 14 CFR part 21 and International Civil Aviation Organization Annex 8 (available from the FAA, 800 Independence Avenue SW., Washington, DC.
   b. Each turbopropeller powered airplane subject to this appendix must be demonstrated to comply with the airplane performance operating limitation requirements of this chapter specified as follows:
      i. Section 23.45 Performance General.
      ii. Section 23.53 Takeoff speeds.
      iii. Section 23.55 Accelerate stop distance.
      vi. Section 23.59 Takeoff distance and takeoff run.
      vii. Section 23.61 Takeoff flight path.
      viii. Section 23.65 Climb: All engines operating.
      ix. Section 23.67 Climb: one engine inoperative.
      x. Section 23.75 Landing.
      xi. Section 23.77 Balked landing.
      xii. Sections 23.1581 through 23.1589 Airplane flight manual and approved manual material.

6. **Operation.** After compliance with the final airplane performance operating limitations requirements has been demonstrated and added to the Airplane Flight Manual performance data of the affected airplane, that airplane must be operated in accordance with the performance limitations of §§121.189 through 121.197.

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**APPENDIX L TO PART 121—TYPE CERTIFICATION REGULATIONS MADE PREVIOUSLY EFFECTIVE**

Appendix L lists regulations in this part that require compliance with standards contained in superseded type certification regulations that continue to apply to certain transport category airplanes. The tables set out citations to current CFR section, applicable aircraft, superseded type certification regulation and applicable time periods, and the CFR edition and Federal Register documents where the regulation having prior effect is found. Copies of all superseded regulations may be obtained at the Federal Aviation Administration Law Library, Room 924, 800 Independence Avenue SW., Washington, DC.

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<table>
<thead>
<tr>
<th>Part 121 section</th>
<th>Applicable aircraft</th>
<th>Provisions: CFR/FR references</th>
</tr>
</thead>
<tbody>
<tr>
<td>------------------</td>
<td>---------------------</td>
<td>--------------------------------</td>
</tr>
</tbody>
</table>
PART 121—TYPE CERTIFICATION REGULATIONS MADE PREVIOUSLY EFFECTIVE AIRPLANE FLIGHT RECORDER SPECIFICATION

The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Time or Relative Times Counts.</td>
<td>24 Hrs, 0 to 4095.</td>
<td>+/-0.125% Per Hour.</td>
<td>4</td>
<td>1 sec</td>
<td>UTC time preferred when available. County increments each 4 seconds of system operator.</td>
</tr>
<tr>
<td>2. Pressure Altitude.</td>
<td>-1000 ft to max certificated altitude of aircraft, +5000 ft.</td>
<td>+/-100 to +/-700 ft (see table, TSO C124a or TSO C51a).</td>
<td>1</td>
<td>5' to 35'</td>
<td>Data should be obtained from the air data computer when practicable.</td>
</tr>
<tr>
<td>3. Indicated airspeed or Calibrated airspeed.</td>
<td>50 KIAS or minimum value to Max Vne. to 1.2 Vso.</td>
<td>+/-5% and +/-3%.</td>
<td>1</td>
<td>1 kt</td>
<td>Data should be obtained from the air data computer when practicable.</td>
</tr>
<tr>
<td>4. Heading (Primary flight crew reference).</td>
<td>0°-360° and Discrete “true” or “mag”.</td>
<td>+/-2°</td>
<td>1</td>
<td>0.5°</td>
<td>When true or magnetic heading can be selected as the primary heading reference, a discrete indicating selection must be recorded.</td>
</tr>
<tr>
<td>5. Normal Acceleration (Vertical).</td>
<td>-3g to +6g</td>
<td>+/-1% of max range excluding datum error of +/-5%.</td>
<td>0.125</td>
<td>0.004g</td>
<td></td>
</tr>
<tr>
<td>6. Pitch Attitude</td>
<td>+/-75°</td>
<td>+/-2°</td>
<td>1 or 0.25 for airplanes operated under §121.344(f).</td>
<td>0.5°</td>
<td>A sampling rate of 0.25 is recommended.</td>
</tr>
<tr>
<td>7. Roll Attitude</td>
<td>+/-180°</td>
<td>+/-2°</td>
<td>1 or 0.5 for airplanes operated under §121.344(f).</td>
<td>0.5°</td>
<td>A sampling rate of 0.5 is recommended.</td>
</tr>
<tr>
<td>8. Manual Radio Transmitter Keying or CVR/DFDR synchronization reference.</td>
<td>On-Off (Discrete) None</td>
<td></td>
<td>1</td>
<td></td>
<td>Preferably each crew member but one discrete acceptable for all transmission provided the CVR/DFDR system complies with TSO C124a CVR synchronization requirements (paragraph 4.2.1 ED-55).</td>
</tr>
<tr>
<td>9. Thrust/Power on Each Engine—primary flight crew reference.</td>
<td>Full Range Forward.</td>
<td>+/-2%</td>
<td>1 (per engine)</td>
<td>0.2% of full range.</td>
<td>Sufficient parameters (e.g. EPR, N1 or Torque, NP) as appropriate to the particular engine to be recorded to determine power in forward and reverse thrust, including potential overspeed conditions.</td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Autopilot Engagement</td>
<td>Discrete “on” or “off”</td>
<td>...........................</td>
<td>1</td>
<td>...........................</td>
<td>...........................</td>
</tr>
<tr>
<td>11. Longitudinal Acceleration</td>
<td>$</td>
<td>\pm</td>
<td>1g$</td>
<td>...........................</td>
<td>0.25</td>
</tr>
<tr>
<td>12a. Pitch Control(position(s) non-fly-by-wire systems)</td>
<td>Full Range</td>
<td>$</td>
<td>\pm</td>
<td>2^\circ$ Unless Higher Accuracy Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 121.344(f).</td>
</tr>
<tr>
<td>12b. Pitch Control(position(s) fly-by-wire systems)</td>
<td>Full Range</td>
<td>$</td>
<td>\pm</td>
<td>2^\circ$ Unless Higher Accuracy Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 121.344(f).</td>
</tr>
<tr>
<td>13a. Lateral Control(position(s) non-fly-by-wire)</td>
<td>Full Range</td>
<td>$</td>
<td>\pm</td>
<td>2^\circ$ Unless Higher Accuracy Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 121.344(f).</td>
</tr>
<tr>
<td>13b. Lateral Control(position(s) fly-by-wire)</td>
<td>Full Range</td>
<td>$</td>
<td>\pm</td>
<td>2^\circ$ Unless Higher Accuracy Required.</td>
<td>0.5</td>
</tr>
<tr>
<td>14a. Yaw Control(position(s) non-fly-by-wire)</td>
<td>Full Range</td>
<td>$</td>
<td>\pm</td>
<td>2^\circ$ Unless Higher Accuracy Required.</td>
<td>0.5</td>
</tr>
<tr>
<td>14b. Yaw Control(position(s) fly-by-wire)</td>
<td>Full Range</td>
<td>$</td>
<td>\pm</td>
<td>2^\circ$ Unless Higher Accuracy Required.</td>
<td>0.5</td>
</tr>
<tr>
<td>15. Pitch Control Surface(position)</td>
<td>Full Range</td>
<td>$</td>
<td>\pm</td>
<td>2^\circ$ Unless Higher Accuracy Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 121.344(f).</td>
</tr>
<tr>
<td>16. Lateral Control Surface(position)</td>
<td>Full Range</td>
<td>$</td>
<td>\pm</td>
<td>2^\circ$ Unless Higher Accuracy Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 121.344(f).</td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. Yaw Control Surface(s) Position.</td>
<td>Full Range</td>
<td>+/− 2° Unless Higher Accuracy Uniquely Required.</td>
<td>0.5</td>
<td>0.2% of full range.</td>
<td>For airplanes with multiple or split surfaces, a suitable combination of surface position sensors is acceptable in lieu of recording each surface separately. The control surfaces may be sampled alternately to produce the sampling interval of 0.5.</td>
</tr>
<tr>
<td>18. Lateral Acceleration.</td>
<td>+/− 1g</td>
<td>+/− 1.5% max. range excluding datum error of +/− 5%.</td>
<td>0.25</td>
<td>0.004g</td>
<td></td>
</tr>
<tr>
<td>19. Pitch Trim Surface Position.</td>
<td>Full Range</td>
<td>+/− 3° Unless Higher Accuracy Uniquely Required.</td>
<td>1</td>
<td>0.3% of full range</td>
<td></td>
</tr>
<tr>
<td>20. Trailing Edge Flap or Cockpit Control Selection.</td>
<td>Full Range or Each Position (discrete).</td>
<td>+/− 3° or as Pilot’s indicator.</td>
<td>2</td>
<td>0.5% of full range.</td>
<td>Flap position and cockpit control may each be sampled alternately at 4 second intervals, to give a data point every 2 seconds.</td>
</tr>
<tr>
<td>21. Leading Edge Flap or Cockpit Control Selection.</td>
<td>Full Range or Each Discrete Position.</td>
<td>+/− 3° or as Pilot’s indicator and sufficient to determine each discrete position.</td>
<td>2</td>
<td>0.5% of full range</td>
<td>Left and right sides, or flap position and cockpit control may each be sampled at 4 second intervals, so as to give a data point every 2 seconds.</td>
</tr>
<tr>
<td>22. Each Thrust Reverser Position (or equivalent for propeller airplane).</td>
<td>Stowed, In Transit, and Reverse (Discrete).</td>
<td>1 (per engine)</td>
<td>1 or 0.5 for airplanes operated under §121.344(f).</td>
<td>0.2% of full range</td>
<td>Turbo-jet=2 discrete enable the 3 states to be determined. Turbo-prop=discrete.</td>
</tr>
<tr>
<td>23. Ground Spoiler Position or Speed Brake Selection.</td>
<td>Full Range or Each Position (discrete).</td>
<td>+/− 2° Unless Higher Accuracy Uniquely Required.</td>
<td>1</td>
<td>0.2% of full range</td>
<td></td>
</tr>
<tr>
<td>24. Outside Air Temperature or Total Air Temperature.</td>
<td>−50°C to +90°C</td>
<td>+/− 2°C</td>
<td>2</td>
<td>0.3°C</td>
<td></td>
</tr>
<tr>
<td>25. Autopilot/ Autothrottle/ AFCS Mode and Engagement Status.</td>
<td>A suitable combination of discrete.</td>
<td>1</td>
<td></td>
<td></td>
<td>Discretes should show which systems are engaged and which primary modes are controlling the flight path and speed of the aircraft.</td>
</tr>
<tr>
<td>26. Radio Altitude</td>
<td>−20 ft to 2,500 ft.</td>
<td>+/− 2 ft or +/− 3% Which-ever is Greater Below 500 ft and +/− 5% Above 500 ft.</td>
<td>1</td>
<td>1 ft = 5% above 500 ft.</td>
<td>For autoland/category 3 operations. Each radio altimeter should be recorded, but arranged so that at least one is recorded each second.</td>
</tr>
<tr>
<td>27. Localizer Deviation, MLS Azimuth, or GPS Latitude Deviation.</td>
<td>+/− 400 Microamps or available sensor range as installed.</td>
<td>+/− 62°</td>
<td>1</td>
<td>0.3% of full range.</td>
<td>For autoland/category 3 operations. Each system should be recorded but arranged so that at least one is recorded each second. It is not necessary to record ILS and MLS at the same time, only the approach aid in use need be recorded.</td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
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<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>28. Glideslope Deviation, MLS Elevation, or GPS Vertical Deviation.</td>
<td>+/- 400 Microamps or available sensor range as installed 0.9 to +30°</td>
<td>As installed +/- 3 – 3% recommended</td>
<td>1</td>
<td>0.3% of full range</td>
<td>For autoland/category 3 operations. Each system should be recorded but arranged so that at least one is recorded each second. It is not necessary to record ILS and MLS at the same time, only the approach aid in use need be recorded.</td>
</tr>
<tr>
<td>29. Marker Beacon Passage</td>
<td>Discrete “on” or “off”.</td>
<td>1</td>
<td>A single discrete is acceptable for all markers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Master Warning.</td>
<td>Discrete</td>
<td>1</td>
<td>Record the master warning and record each “red” warning that cannot be determined from other parameters or from the cockpit voice recorder.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Air/ground sensor (primary airplane system reference nose or main gear), Angle of Attack (If measured directly).</td>
<td>Discrete “air” or “ground”.</td>
<td>1 (0.25 recommended)</td>
<td>If left and right sensors are available, each may be recorded at 4 or 1 second intervals, as appropriate, so as to give a data point at 2 seconds or 0.5 second, as required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Angle of Attack (If measured directly).</td>
<td>As installed</td>
<td>2 or 0.5 for airplanes operated under §121.344(d).</td>
<td>0.3% of full range.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Hydraulic Pressure Low, Each System.</td>
<td>Discrete or available sensor range, “low” or “normal”.</td>
<td>+/- 5%</td>
<td>0.5% of full range.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Groundspeed</td>
<td>As Installed</td>
<td>Most Accurate Systems Installed.</td>
<td>1</td>
<td>0.2% of full range.</td>
<td></td>
</tr>
<tr>
<td>35. GPWS (ground proximity warning system).</td>
<td>Discrete “warning” or “off”.</td>
<td>1</td>
<td>A suitable combination of discretes unless recorder capacity is limited in which case a single discrete for all modes is acceptable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. Landing Gear Position or Landing gear cockpit control selection.</td>
<td>Discrete</td>
<td>4</td>
<td>A suitable combination of discretes should be recorded.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37. Drift Angle ...</td>
<td>As installed</td>
<td>4</td>
<td>Provided by the Primary Navigation System Reference. Where capacity permits Latitude/longitude resolution should be 0.0002°.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38. Wind Speed and Direction.</td>
<td>As installed</td>
<td>4</td>
<td>0.1°, 1 knot, and 1.0°.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. Latitude and Longitude.</td>
<td>As installed</td>
<td>4</td>
<td>0.002°, or as installed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. Stick shaker and pusher activation.</td>
<td>Discrete(s) “on” or “off”.</td>
<td>1</td>
<td>A suitable combination of discretes to determine activation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41. Windshear Detection.</td>
<td>Discrete “warning” or “off”.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42. Throttle/power lever position.</td>
<td>Full Range</td>
<td>+/- 2%</td>
<td>1 for each lever</td>
<td>2% of full range</td>
<td>For airplanes with non-mechanically linked cockpit engine controls.</td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>43. Additional Engine Parameters.</td>
<td>As installed</td>
<td>As installed</td>
<td>Each engine each second</td>
<td>2% of full range</td>
<td>Where capacity permits, the preferred priority is indicated vibration level, N2, EGT, Fuel Flow, Fuel Cut-off lever position and N3, unless engine manufacturer recommends otherwise.</td>
</tr>
<tr>
<td>44. Traffic Alert and Collision Avoidance System (TCAS).</td>
<td>Discretes</td>
<td>As installed</td>
<td>1</td>
<td></td>
<td>A suitable combination of discretes should be recorded to determine the status of—Combined Control, Vertical Control, Up Advisory, and Down Advisory. (ref. ARINC Characteristic 735 Attachment 6E, TCAS VERTICAL RA DATA OUTPUT WORD.)</td>
</tr>
<tr>
<td>45. DME 1 and 2 Distance.</td>
<td>0–200 NM</td>
<td>As installed</td>
<td>4</td>
<td>1 NM</td>
<td>1 mile</td>
</tr>
<tr>
<td>46. Nav 1 and 2 Selected Frequency.</td>
<td>Full Range</td>
<td>As installed</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47. Selected barometric setting.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>(1 per 64 sec.)</td>
<td>0.2% of full range</td>
<td></td>
</tr>
<tr>
<td>48. Selected Altitude.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>1</td>
<td>100 ft</td>
<td></td>
</tr>
<tr>
<td>49. Selected speed.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>1</td>
<td>1 knot</td>
<td></td>
</tr>
<tr>
<td>50. Selected Mach.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>1</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>51. Selected vertical speed.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>1</td>
<td>100 ft/min</td>
<td></td>
</tr>
<tr>
<td>52. Selected heading.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>1</td>
<td>1°</td>
<td></td>
</tr>
<tr>
<td>53. Selected flight path.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>1</td>
<td>1°</td>
<td></td>
</tr>
<tr>
<td>54. Selected decision height.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>64</td>
<td>1 ft</td>
<td></td>
</tr>
<tr>
<td>55. EFIS display format.</td>
<td>Discrete(s)</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56. Multi-function/Engine Alerts Display format.</td>
<td>Discrete(s)</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57. Thrust command.</td>
<td>Full Range</td>
<td>±/−2%</td>
<td>2</td>
<td>2% of full range</td>
<td></td>
</tr>
<tr>
<td>58. Thrust target in CG trim tank.</td>
<td>Full Range</td>
<td>±/−2%</td>
<td>4</td>
<td>2% of full range</td>
<td></td>
</tr>
<tr>
<td>59. Fuel quantity</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>(1 per 64 sec.)</td>
<td>1% of full range</td>
<td></td>
</tr>
<tr>
<td>61. Ice Detection</td>
<td>Discrete “ice” or “no ice.”</td>
<td></td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>62. Engine warning each engine vibration.</td>
<td>Discrete</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>63. Engine warning each engine over temp.</td>
<td>Discrete</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>64. Engine warning each engine oil pressure low.</td>
<td>Discrete</td>
<td>...........................</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65. Engine warning each engine over speed.</td>
<td>Discrete</td>
<td>...........................</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66. Yaw Trim Surface Position.</td>
<td>Full Range</td>
<td>+/− 3% Unless Higher Accuracy Uniquely Required</td>
<td>2</td>
<td>0.3% of full range.</td>
<td></td>
</tr>
<tr>
<td>67. Roll Trim Surface Position.</td>
<td>Full Range</td>
<td>+/− 3% Unless Higher Accuracy Uniquely Required</td>
<td>2</td>
<td>0.3% of full range.</td>
<td></td>
</tr>
<tr>
<td>68. Brake Pressure (left and right).</td>
<td>As installed</td>
<td>+/− 5%</td>
<td>1</td>
<td></td>
<td>To determine braking effort applied by pilots or by autobrakes.</td>
</tr>
<tr>
<td>69. Brake Pedal Application (left and right).</td>
<td>Discrete or Analog “applied” or “off”.</td>
<td>+/− 5% (Analog)</td>
<td>1</td>
<td></td>
<td>To determine braking applied by pilots.</td>
</tr>
<tr>
<td>70. Yaw or sideslip angle.</td>
<td>Full Range</td>
<td>+/− 5%</td>
<td>4</td>
<td>0.5°</td>
<td></td>
</tr>
<tr>
<td>71. Engine bleed valve position.</td>
<td>Discrete “open” or “closed”.</td>
<td>...........................</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72. De-icing or anti-icing system selection.</td>
<td>Discrete “on” or “off”.</td>
<td>...........................</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73. Computed center of gravity.</td>
<td>Full Range</td>
<td>+/− 5%</td>
<td>(1 per 64 sec.)</td>
<td>1% of full range</td>
<td></td>
</tr>
<tr>
<td>74. AC electrical bus status.</td>
<td>Discrete “power” or “off”.</td>
<td>...........................</td>
<td>4</td>
<td>Each bus.</td>
<td></td>
</tr>
<tr>
<td>75. DC electrical bus status.</td>
<td>Discrete “power” or “off”.</td>
<td>...........................</td>
<td>4</td>
<td>Each bus.</td>
<td></td>
</tr>
<tr>
<td>76. APU bleed valve position.</td>
<td>Discrete “open” or “closed”.</td>
<td>...........................</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>77. Hydraulic Pressure (each system).</td>
<td>Full range</td>
<td>+/− 5%</td>
<td>2</td>
<td>100 psi</td>
<td></td>
</tr>
<tr>
<td>78. Loss of cabin pressure.</td>
<td>Discrete “loss” or “normal”.</td>
<td>...........................</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>79. Computer failure (critical flight and engine control systems).</td>
<td>Discrete “fail” or “normal”.</td>
<td>...........................</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80. Heads-up display (when an information source is installed).</td>
<td>Discrete(s) “on” or “off”.</td>
<td>...........................</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>81. Para-visual display (when an information source is installed).</td>
<td>Discrete(s) “on” or “off”.</td>
<td>...........................</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>82. Cockpit trim control input position—pitch.</td>
<td>Full Range</td>
<td>+/− 5%</td>
<td>1</td>
<td>0.2% of full range.</td>
<td>Where mechanical means for control inputs are not available, cockpit display trim positions should be recorded.</td>
</tr>
<tr>
<td>83. Cockpit trim control input position—roll.</td>
<td>Full Range</td>
<td>+/− 5%</td>
<td>1</td>
<td>0.2% of full range.</td>
<td>Where mechanical means for control inputs are not available, cockpit display trim positions should be recorded.</td>
</tr>
</tbody>
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The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

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<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>84. Cockpit trim control input position—yaw</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.2% of full range</td>
<td>Where mechanical means for control inputs are not available, cockpit display trim positions should be recorded.</td>
</tr>
<tr>
<td>85. Trailing edge flap and cockpit flap control position</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>2</td>
<td>0.5% of full range</td>
<td>Trailing edge flaps and cockpit flap control position may each be sampled alternately at 4 second intervals to provide a sample each 0.5 second.</td>
</tr>
<tr>
<td>86. Leading edge flap and cockpit flap control position</td>
<td>Full Range or Discrete</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.5% of full range</td>
<td>For fly-by-wire flight control systems, where flight control surface position is a function of the displacement of the control input device only, it is not necessary to record this parameter. For airplanes that have a flight control breakaway capability that allows either pilot to operate the control independently, record both control force inputs. The control force inputs may be sampled alternately once per 2 seconds to produce the sampling interval of 1.</td>
</tr>
<tr>
<td>87. Ground spoiler position and speed brake selection</td>
<td>Full Range or Discrete</td>
<td>+/- 5%</td>
<td>0.5</td>
<td>0.2% of full range</td>
<td>For fly-by-wire flight control systems, where flight control surface position is a function of the displacement of the control input device only, it is not necessary to record this parameter. For airplanes that have a flight control breakaway capability that allows either pilot to operate the control independently, record both control force inputs. The control force inputs may be sampled alternately once per 2 seconds to produce the sampling interval of 1.</td>
</tr>
<tr>
<td>88. All cockpit flight control input forces (control wheel, control column, rudder pedal)</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.2% of full range</td>
<td>For fly-by-wire flight control systems, where flight control surface position is a function of the displacement of the control input device only, it is not necessary to record this parameter. For airplanes that have a flight control breakaway capability that allows either pilot to operate the control independently, record both control force inputs. The control force inputs may be sampled alternately once per 2 seconds to produce the sampling interval of 1.</td>
</tr>
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</table>
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Appendix E to Part 125—Airplane Flight Recorder Specification

Authority: 49 U.S.C. 106(g), 40113, 44701-44702, 44705, 44710-44717, 44722.

Source: Docket No. 19779, 45 FR 67235, Oct. 9, 1980, unless otherwise noted.

Special Federal Aviation Regulation No. 38-2

Editorial Note: For the text of SFAR No. 38-2, see part 121 of this chapter.
this chapter by an applicant for a certificate under part 119 of this chapter or they are being operated by a foreign air carrier or a foreign person engaged in common carriage solely outside the United States under part 91 of this chapter; or

(5) They are being operated under a deviation authority issued under §125.3 of this chapter.

(c) The rules of this part, except §125.247, do not apply to the operation of airplanes specified in paragraph (a) when they are operated outside the United States by a person who is not a citizen of the United States.

§125.3 Deviation authority.

(a) The Administrator may, upon consideration of the circumstances of a particular operation, issue deviation authority providing relief from specified sections of part 125. This deviation authority will be issued as a Letter of Deviation Authority.

(b) A Letter of Deviation Authority may be terminated or amended at any time by the Administrator.

(c) A request for deviation authority must be submitted to the nearest Flight Standards District Office, not less than 60 days prior to the date of intended operations. A request for deviation authority must contain a complete statement of the circumstances and justification for the deviation requested.

§125.5 Display of certificate.

(a) The certificate holder must display a true copy of the certificate in each of its aircraft.

(b) Each operator holding a Letter of Deviation Authority issued under this part must carry a true copy in each of its airplanes.

§125.7 Display of certificate.

(a) The certificate holder must display a true copy of the certificate in each of its aircraft.

(b) Each operator holding a Letter of Deviation Authority issued under this part must carry a true copy in each of its airplanes.

§125.9 Definitions.

(a) For the purposes of this part, maximum payload capacity means:

(1) For an airplane for which a maximum zero fuel weight is prescribed in FAA technical specifications, the maximum zero fuel weight, less empty weight, less all justifiable airplane equipment, and less the operating load (consisting of minimum flightcrew, foods and beverages and supplies and equipment related to foods and beverages, but not including disposable fuel or oil):

(i) Crew—200 pounds for each crewmember required under this chapter

(ii) Oil—350 pounds.

(iii) Fuel—the minimum weight of fuel required under this chapter for a flight between domestic points 174 nautical miles apart under VFR weather conditions that does not involve extended overwater operations.

(b) For the purposes of this part, empty weight means the weight of the airframe, engines, propellers, and fixed
§ 125.11 Certificate eligibility and prohibited operations.

(a) No person is eligible for a certificate or operations specifications under this part if the person holds the appropriate operating certificate and/or operations specifications necessary to conduct operations under part 121, 129, or 135 of this chapter.

(b) No certificate holder may conduct any operation which results directly or indirectly from any person’s holding out to the public to furnish transportation.

(c) No person holding operations specifications under this part may operate or list on its operations specifications any aircraft listed on any operations specifications or other required aircraft listing under part 121, 129, or 135 of this chapter.


Subpart B—Certification Rules and Miscellaneous Requirements

§ 125.21 Application for operating certificate.

(a) Each applicant for the issuance of an operating certificate must submit an application in a form and manner prescribed by the Administrator to the FAA Flight Standards district office in whose area the applicant proposes to establish or has established its principal operations base. The application must be submitted at least 60 days before the date of intended operations.

(b) Each application submitted under paragraph (a) of this section must contain a signed statement showing the following:

   (1) The name and address of each director and each officer or person employed or who will be employed in a management position described in §125.25.

   (2) A list of flight crewmembers with the type of airman certificate held, including ratings and certificate numbers.

§ 125.23 Rules applicable to operations subject to this part.

Each person operating an airplane in operations under this part shall—

(a) While operating inside the United States, comply with the applicable rules in part 91 of this chapter; and

(b) While operating outside the United States, comply with Annex 2, Rules of the Air, to the Convention on International Civil Aviation or the regulations of any foreign country, whichever applies, and with any rules of parts 61 and 91 of this chapter and this part that are more restrictive than that Annex or those regulations and that can be complied with without violating that Annex or those regulations. Annex 2 is incorporated by reference in §91.703(b) of this chapter.


§ 125.25 Management personnel required.

(a) Each applicant for a certificate under this part must show that it has enough management personnel, including at least a director of operations, to assure that its operations are conducted in accordance with the requirements of this part.

(b) Each applicant shall—

   (1) Set forth the duties, responsibilities, and authority of each of its management personnel in the general policy section of its manual;
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§ 125.35 Amendment of operations specifications.

(a) The FAA Flight Standards district office charged with the overall inspection of the certificate holder may amend any operations specifications issued under this part if—

(1) It determines that safety in air commerce requires that amendment; or

(2) Upon application by the holder, that district office determines that safety in air commerce allows that amendment.

(b) The certificate holder must file an application to amend operations specifications at least 15 days before the date proposed by the applicant for the amendment to become effective.
§ 125.37 Duty period limitations.

(a) Each flight crewmember and flight attendant must be relieved from all duty for at least 8 consecutive hours during any 24-hour period.

(b) The Administrator may specify rest, flight time, and duty time limitations in the operations specifications that are other than those specified in paragraph (a) of this section.


§ 125.39 Carriage of narcotic drugs, marihuana, and depressant or stimulant drugs or substances.

If the holder of a certificate issued under this part permits any airplane owned or leased by that holder to be engaged in any operation that the certificate holder knows to be in violation of § 91.19(a) of this chapter, that operation is a basis for suspending or revoking the certificate.


§ 125.41 Availability of certificate and operations specifications.

Each certificate holder shall make its operating certificate and operations specifications available for inspection by the Administrator at its principal operations base.

§ 125.43 Use of operations specifications.

(a) Each certificate holder shall keep each of its employees informed of the provisions of its operations specifications that apply to the employee's duties and responsibilities.

(b) Each certificate holder shall maintain a complete and separate set of its operations specifications. In addition, each certificate holder shall insert pertinent excerpts of its operations specifications, or reference thereto, in its manual in such a manner that they retain their identity as operations specifications.


§ 125.45 Inspection authority.

Each certificate holder shall allow the Administrator, at any time or place, to make any inspections or tests to determine its compliance with the Federal Aviation Act of 1958, the Federal Aviation Regulations, its operating certificate and operations specifications, its letter of deviation authority, or its eligibility to continue to hold its certificate or its letter of deviation authority.
§ 125.71 Change of address.
Each certificate holder shall notify the FAA Flight Standards district office charged with the overall inspection of its operations, in writing, at least 30 days in advance, of any change in the address of its principal business office, its principal operations base, or its principal maintenance base.

§ 125.49 Airport requirements.
(a) No certificate holder may use any airport unless it is adequate for the proposed operation, considering such items as size, surface, obstructions, and lighting.
(b) No pilot of an airplane carrying passengers at night may take off from, or land on, an airport unless—
(1) That pilot has determined the wind direction from an illuminated wind direction indicator or local ground communications, or, in the case of takeoff, that pilot’s personal observations; and
(2) The limits of the area to be used for landing or takeoff are clearly shown by boundary or runway marker lights.
(c) For the purposes of paragraph (b) of this section, if the area to be used for takeoff or landing is marked by flare pots or lanterns, their use must be approved by the Administrator.

§ 125.51 En route navigational facilities.
(a) Except as provided in paragraph (b) of this section, no certificate holder may conduct any operation over a route unless nonvisual ground aids are—
(1) Available over the route for navigating airplanes within the degree of accuracy required for ATC; and
(2) Located to allow navigation to any airport of destination, or alternate airport, within the degree of accuracy necessary for the operation involved.
(b) Nonvisual ground aids are not required for—
(1) Day VFR operations that can be conducted safely by pilotage because of the characteristics of the terrain;
(2) Night VFR operations on routes that the Administrator determines have reliable landmarks adequate for safe operation; or
(3) Operations where the use of celestial or other specialized means of navigation, such as an inertial navigation system, is approved.

§ 125.53 Flight locating requirements.
(a) Each certificate holder must have procedures established for locating each flight for which an FAA flight plan is not filed that—
(1) Provide the certificate holder with at least the information required to be included in a VFR flight plan;
(2) Provide for timely notification of an FAA facility or search and rescue facility, if an airplane is overdue or missing; and
(3) Provide the certificate holder with the location, date, and estimated time for reestablishing radio or telephone communications, if the flight will operate in an area where communications cannot be maintained.
(b) Flight locating information shall be retained at the certificate holder’s principal operations base, or at other places designated by the certificate holder in the flight locating procedures, until the completion of the flight.
(c) Each certificate holder shall furnish the representative of the Administrator assigned to it with a copy of its flight locating procedures and any changes or additions, unless those procedures are included in a manual required under this part.

Subpart C—Manual Requirements
§ 125.71 Preparation.
(a) Each certificate holder shall prepare and keep current a manual setting forth the certificate holder’s procedures and policies acceptable to the Administrator. This manual must be used by the certificate holder’s flight, ground, and maintenance personnel in conducting its operations. However, the Administrator may authorize a deviation from this paragraph if the Administrator finds that, because of the limited size of the operation, all or part of the manual is not necessary for guidance of flight, ground, or maintenance personnel.
(b) Each certificate holder shall maintain at least one copy of the manual at its principal operations base.
§ 125.73  Contents.

Each manual shall have the date of the last revision and revision number on each revised page. The manual must include—

(a) The name of each management person who is authorized to act for the certificate holder, the person’s assigned area of responsibility, and the person’s duties, responsibilities, and authority;

(b) Procedures for ensuring compliance with airplane weight and balance limitations;

(c) Copies of the certificate holder’s operations specifications or appropriate extracted information, including area of operations authorized, category and class of airplane authorized, crew complements, and types of operations authorized;

(d) Procedures for complying with accident notification requirements;

(e) Procedures for ensuring that the pilot in command knows that required airworthiness inspections have been made and that the airplane has been approved for return to service in compliance with applicable maintenance requirements;

(f) Procedures for reporting and recording mechanical irregularities that come to the attention of the pilot in command before, during, and after completion of a flight;

(g) Procedures to be followed by the pilot in command for determining that mechanical irregularities or defects reported for previous flights have been corrected or that correction has been deferred;

(h) Procedures to be followed by the pilot in command to obtain maintenance, preventive maintenance, and servicing of the airplane at a place where previous arrangements have not been made by the operator, when the pilot is authorized to so act for the operator;

(i) Procedures for the release for, or continuation of, flight if any item of equipment required for the particular type of operation becomes inoperative or unserviceable en route;

(j) Procedures for refueling airplanes, eliminating fuel contamination, protecting from fire (including electrostatic protection), and supervising and protecting passengers during refueling;

(k) Procedures to be followed by the pilot in command in the briefing under § 125.327;

(l) Flight locating procedures, when applicable;
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§ 125.111 General.

(a) Except as provided in paragraph (b) of this section, no certificate holder may use an airplane powered by airplane engines rated at more than 600 horsepower each for maximum continuous operation unless that airplane meets the requirements of §§ 125.113 through 125.181.

(b) If the Administrator determines that, for a particular model of airplane used in cargo service, literal compliance with any requirement under paragraph (a) of this section would be extremely difficult and that compliance would not contribute materially to the data presentation are approved by the Administrator.

Subpart D—Airplane Requirements

§ 125.91 Airplane requirements: General.

(a) No certificate holder may operate an airplane governed by this part unless it—

1. Carries an appropriate current airworthiness certificate issued under this chapter; and

2. Is in an airworthy condition and meets the applicable airworthiness requirements of this chapter, including those relating to identification and equipment.

(b) No person may operate an airplane unless the current empty weight and center of gravity are calculated from the values established by actual weighing of the airplane within the preceding 36 calendar months.

(c) Paragraph (b) of this section does not apply to airplanes issued an original airworthiness certificate within the preceding 36 calendar months.

§ 125.93 Airplane limitations.

No certificate holder may operate a land airplane (other than a DC-3, C-46, CV-240, CV-340, CV-440, CV-580, CV-600, CV-640, or Martin 404) in an extended overwater operation unless it is certificated or approved as adequate for ditching under the ditching provisions of part 25 of this chapter.

Subpart E—Special Airworthiness Requirements

§ 125.111 General.

(a) Except as provided in paragraph (b) of this section, no certificate holder may use an airplane powered by airplane engines rated at more than 600 horsepower each for maximum continuous operation unless that airplane meets the requirements of §§ 125.113 through 125.181.

(b) If the Administrator determines that, for a particular model of airplane used in cargo service, literal compliance with any requirement under paragraph (a) of this section would be extremely difficult and that compliance would not contribute materially to the
§ 125.113 Cabin interiors.

(a) Upon the first major overhaul of an airplane cabin or refurbishing of the cabin interior, all materials in each compartment used by the crew or passengers that do not meet the following requirements must be replaced with materials that meet these requirements:

(1) For an airplane for which the application for the type certificate was filed prior to May 1, 1972, § 25.853 in effect on April 30, 1972.

(2) For an airplane for which the application for the type certificate was filed on or after May 1, 1972, the materials requirement under which the airplane was type certificated.

(b) Except as provided in paragraph (a) of this section, each compartment used by the crew or passengers must meet the following requirements:

(1) Materials must be at least flash resistant.

(2) The wall and ceiling linings and the covering of upholstering, floors, and furnishings must be flame resistant.

(3) Each compartment where smoking is to be allowed must be equipped with self-contained ash trays that are completely removable and other compartments must be placarded against smoking.

(4) Each receptacle for used towels, papers, and wastes must be of fire-resistant material and must have a cover or other means of containing possible fires started in the receptacles.

§ 125.115 Internal doors.

In any case where internal doors are equipped with louvres or other ventilating means, there must be a means convenient to the crew for closing the flow of air through the door when necessary.

§ 125.117 Ventilation.

Each passenger or crew compartment must be suitably ventilated. Carbon monoxide concentration may not be more than one part in 20,000 parts of air, and fuel fumes may not be present. In any case where partitions between compartments have louvres or other means allowing air to flow between compartments, there must be a means convenient to the crew for closing the flow of air through the partitions when necessary.

§ 125.119 Fire precautions.

(a) Each compartment must be designed so that, when used for storing cargo or baggage, it meets the following requirements:

(1) No compartment may include controls, wiring, lines, equipment, or accessories that would upon damage or failure, affect the safe operation of the airplane unless the item is adequately shielded, isolated, or otherwise protected so that it cannot be damaged by movement of cargo in the compartment and so that damage to or failure of the item would not create a fire hazard in the compartment.

(b) Cargo or baggage may not interfere with the functioning of the fire-protective features of the compartment.

(3) Materials used in the construction of the compartments, including tie-down equipment, must be at least flame resistant.

(4) Each compartment must include provisions for safeguarding against fires according to the classifications set forth in paragraphs (b) through (f) of this section.

(b) Class A. Cargo and baggage compartments are classified in the “A” category if a fire therein would be readily discernible to a member of the crew while at that crewmember’s station, and all parts of the compartment are easily accessible in flight. There must be a hand fire extinguisher available for each Class A compartment.

(c) Class B. Cargo and baggage compartments are classified in the “B” category if enough access is provided while in flight to enable a member of
the crew to effectively reach all of the compartment and its contents with a hand fire extinguisher and the compartment is so designed that, when the access provisions are being used, no hazardous amount of smoke, flames, or extinguishing agent enters any compartment occupied by the crew or passengers. Each Class B compartment must comply with the following:

(1) It must have a separate approved smoke or fire detector system to give warning at the pilot or flight engineer station.

(2) There must be a hand-held fire extinguisher available for the compartment.

(3) It must be lined with fire-resistant material, except that additional service lining of flame-resistant material may be used.

(d) Class C. Cargo and baggage compartments are classified in the “C” category if they do not conform with the requirements for the “A”, “B”, “D”, or “E” categories. Each Class C compartment must comply with the following:

(1) It must have a separate approved smoke or fire detector system to give warning at the pilot or flight engineer station.

(2) It must have an approved built-in fire-extinguishing system controlled from the pilot or flight engineer station.

(3) It must be designed to exclude hazardous quantities of smoke, flames, or extinguishing agents from entering into any compartment occupied by the crew or passengers.

(4) It must have ventilation and draft control so that the extinguishing agent provided can control any fire that may start in the compartment.

(5) It must be lined with fire-resistant material, except that additional service lining of flame-resistant material may be used.

(e) Class D. Cargo and baggage compartments are classified in the “D” category if they are so designed and constructed that a fire occurring therein will be completely confined without endangering the safety of the airplane or the occupants. Each Class D compartment must comply with the following:

(1) It must have a means to exclude hazardous quantities of smoke, flames, or noxious gases from entering any compartment occupied by the crew or passengers.

(2) Ventilation and drafts must be controlled within each compartment so that any fire likely to occur in the compartment will not progress beyond safe limits.

(3) It must be completely lined with fire-resistant material.

(4) Consideration must be given to the effect of heat within the compartment on adjacent critical parts of the airplane.

(f) Class E. On airplanes used for the carriage of cargo only, the cabin area may be classified as a Class “E” compartment. Each Class E compartment must comply with the following:

(1) It must be completely lined with fire-resistant material.

(2) It must have a separate system of an approved type smoke or fire detector to give warning at the pilot or flight engineer station.

(3) It must have a means to shut off the ventilating air flow to or within the compartment and the controls for that means must be accessible to the flightcrew in the crew compartment.

(4) It must have a means to exclude hazardous quantities of smoke, flames, or noxious gases from entering the flightcrew compartment.

(5) Required crew emergency exits must be accessible under all cargo loading conditions.

§ 125.121 Proof of compliance with § 125.119.

Compliance with those provisions of §125.119 that refer to compartment accessibility, the entry of hazardous quantities of smoke or extinguishing agent into compartment occupied by the crew or passengers, and the dissipation of the extinguishing agent in Class “C” compartments must be shown by tests in flight. During these tests it must be shown that no inadvertent operation of smoke or fire detectors in other compartments within the airplane would occur as a result of fire contained in any one compartment, either during the time it is being extinguished, or thereafter, unless the extinguishing system floods those compartments simultaneously.
§ 125.123 Propeller deicing fluid.

If combustible fluid is used for propeller deicing, the certificate holder must comply with §125.153.

§ 125.125 Pressure cross-feed arrangements.

(a) Pressure cross-feed lines may not pass through parts of the airplane used for carrying persons or cargo unless there is a means to allow crewmembers to shut off the supply of fuel to these lines or the lines are enclosed in a fuel and fume-proof enclosure that is ventilated to the exterior of the airplane. However, such an enclosure need not be used if those lines incorporate no fittings on or within the personnel or cargo areas and are suitably routed or protected to prevent accidental damage.

(b) Lines that can be isolated from the rest of the fuel system by valves at each end must incorporate provisions for relieving excessive pressures that may result from exposure of the isolated line to high temperatures.

§ 125.127 Location of fuel tanks.

(a) Fuel tanks must be located in accordance with §125.153.

(b) No part of the engine nacelle skin that lies immediately behind a major air outlet from the engine compartment may be used as the wall of an integral tank.

(c) Fuel tanks must be isolated from personnel compartments by means of fume- and fuel-proof enclosures.

§ 125.129 Fuel system lines and fittings.

(a) Fuel lines must be installed and supported so as to prevent excessive vibration and so as to be adequate to withstand loads due to fuel pressure and accelerated flight conditions.

(b) Lines connected to components of the airplane between which there may be relative motion must incorporate provisions for flexibility.

(c) Flexible connections in lines that may be under pressure and subject to axial loading must use flexible hose assemblies rather than hose clamp connections.

(d) Flexible hoses must be of an acceptable type or proven suitable for the particular application.

§ 125.131 Fuel lines and fittings in designated fire zones.

Fuel lines and fittings in each designated fire zone must comply with §125.157.

§ 125.133 Fuel valves.

Each fuel valve must—

(a) Comply with §125.155; 
(b) Have positive stops or suitable index provisions in the “on” and “off” positions; and

(c) Be supported so that loads resulting from its operation or from accelerated flight conditions are not transmitted to the lines connected to the valve.

§ 125.135 Oil lines and fittings in designated fire zones.

Oil lines and fittings in each designated fire zone must comply with §125.157.

§ 125.137 Oil valves.

(a) Each oil valve must—

(1) Comply with §125.155; 
(2) Have positive stops or suitable index provisions in the “on” and “off” positions; and

(3) Be supported so that loads resulting from its operation or from accelerated flight conditions are not transmitted to the lines attached to the valve.

(b) The closing of an oil shutoff means must not prevent feathering the propeller, unless equivalent safety provisions are incorporated.

§ 125.139 Oil system drains.

Accessible drains incorporating either a manual or automatic means for positive locking in the closed position must be provided to allow safe drainage of the entire oil system.

§ 125.141 Engine breather lines.

(a) Engine breather lines must be so arranged that condensed water vapor that may freeze and obstruct the line cannot accumulate at any point.

(b) Engine breathers must discharge in a location that does not constitute a fire hazard in case foaming occurs and so that oil emitted from the line does not impinge upon the pilots’ windshield.

(c) Engine breathers may not discharge into the engine air induction system.
§ 125.143 Firewalls.
Each engine, auxiliary power unit, fuel-burning heater, or other item of combustible equipment that is intended for operation in flight must be isolated from the rest of the airplane by means of firewalls or shrouds, or by other equivalent means.

§ 125.145 Firewall construction.
Each firewall and shroud must—
(a) Be so made that no hazardous quantity of air, fluids, or flame can pass from the engine compartment to other parts of the airplane;
(b) Have all openings in the firewall or shroud sealed with close-fitting fireproof grommets, bushings, or firewall fittings;
(c) Be made of fireproof material; and
(d) Be protected against corrosion.

§ 125.147 Cowling.
(a) Cowling must be made and supported so as to resist the vibration, inertia, and air loads to which it may be normally subjected.
(b) Provisions must be made to allow rapid and complete drainage of the cowling in normal ground and flight attitudes. Drains must not discharge in locations constituting a fire hazard. Parts of the cowling that are subjected to high temperatures because they are near exhaust system parts or because of exhaust gas impingement must be made of fireproof material. Unless otherwise specified in these regulations, all other parts of the cowling must be made of material that is at least fire resistant.

§ 125.149 Engine accessory section diaphragm.
Unless equivalent protection can be shown by other means, a diaphragm that complies with § 125.145 must be provided on air-cooled engines to isolate the engine power section and all parts of the exhaust system from the engine accessory compartment.

§ 125.151 Powerplant fire protection.
(a) Designated fire zones must be protected from fire by compliance with §§ 125.153 through 125.159.
(b) Designated fire zones are—
(1) Engine accessory sections;
(2) Installations where no isolation is provided between the engine and accessory compartment; and
(3) Areas that contain auxiliary power units, fuel-burning heaters, and other combustion equipment.

§ 125.153 Flammable fluids.
(a) No tanks or reservoirs that are a part of a system containing flammable fluids or gases may be located in designated fire zones, except where the fluid contained, the design of the system, the materials used in the tank, the shutoff means, and the connections, lines, and controls provide equivalent safety.
(b) At least one-half inch of clear airspace must be provided between any tank or reservoir and a firewall or shroud isolating a designated fire zone.

§ 125.155 Shutoff means.
(a) Each engine must have a means for shutting off or otherwise preventing hazardous amounts of fuel, oil, deicer, and other flammable fluids from flowing into, within, or through any designated fire zone. However, means need not be provided to shut off flow in lines that are an integral part of an engine.
(b) The shutoff means must allow an emergency operating sequence that is compatible with the emergency operation of other equipment, such as feathering the propeller, to facilitate rapid and effective control of fires.
(c) Shutoff means must be located outside of designated fire zones, unless equivalent safety is provided, and it must be shown that no hazardous amount of flammable fluid will drain into any designated fire zone after a shutoff.
(d) Adequate provisions must be made to guard against inadvertent operation of the shutoff means and to make it possible for the crew to reopen the shutoff means after it has been closed.

§ 125.157 Lines and fittings.
(a) Each line, and its fittings, that is located in a designated fire zone, if it carries flammable fluids or gases under pressure, or is attached directly to the engine, or is subject to relative motion between components (except lines and

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§ 125.159 Vent and drain lines.

All vent and drain lines, and their fittings, that are located in a designated fire zone must, if they carry flammable fluids or gases, comply with § 125.157, if the Administrator finds that the rupture or breakage of any vent or drain line may result in a fire hazard.

§ 125.161 Fire-extinguishing systems.

(a) Unless the certificate holder shows that equivalent protection against destruction of the airplane in case of fire is provided by the use of fireproof materials in the nacelle and other components that would be subjected to flame, fire-extinguishing systems must be provided to serve all designated fire zones.

(b) Materials in the fire-extinguishing system must not react chemically with the extinguishing agent so as to be a hazard.

§ 125.163 Fire-extinguishing agents.

Only methyl bromide, carbon dioxide, or another agent that has been shown to provide equivalent extinguishing action may be used as a fire-extinguishing agent. If methyl bromide or any other toxic extinguishing agent is used, provisions must be made to prevent harmful concentrations of fluid or fluid vapors from entering any personnel compartment either because of leakage during normal operation of the airplane or because of discharging the fire extinguisher on the ground or in flight when there is a defect in the extinguishing system. If a methyl bromide system is used, the containers must be charged with dry agent and sealed by the fire-extinguisher manufacturer or some other person using satisfactory recharging equipment. If carbon dioxide is used, it must not be possible to discharge enough gas into the personnel compartments to create a danger of suffocating the occupants.

§ 125.165 Extinguishing agent container pressure relief.

Extinguishing agent containers must be provided with a pressure relief to prevent bursting of the container because of excessive internal pressures. The discharge line from the relief connection must terminate outside the airplane in a place convenient for inspection on the ground. An indicator must be provided at the discharge end of the line to provide a visual indication when the container has discharged.

§ 125.167 Extinguishing agent container compartment temperature.

Precautions must be taken to ensure that the extinguishing agent containers are installed in places where reasonable temperatures can be maintained for effective use of the extinguishing system.

§ 125.169 Fire-extinguishing system materials.

(a) Except as provided in paragraph (b) of this section, each component of a fire-extinguishing system that is in a designated fire zone must be made of fire-resistant materials.

(b) Connections that are subject to relative motion between components of the airplane must be made of flexible materials that are at least fire-resistant and be located so as to minimize the probability of failure.

§ 125.171 Fire-detector systems.

Enough quick-acting fire detectors must be provided in each designated fire zone to assure the detection of any fire that may occur in that zone.

§ 125.173 Fire detectors.

Fire detectors must be made and installed in a manner that assures their ability to resist, without failure, all vibration, inertia, and other loads to which they may be normally subjected. Fire detectors must be unaffected by exposure to fumes, oil, water, or other fluids that may be present.

§ 125.175 Protection of other airplane components against fire.

(a) Except as provided in paragraph (b) of this section, all airplane surfaces aft of the nacelles in the area of one
Federal Aviation Administration, DOT

§ 125.183 Carriage of cargo in passenger compartments.

(a) Except as provided in paragraph (b) or (c) of this section, no certificate holder may carry cargo in the passenger compartment of an airplane.

(b) Cargo may be carried aft of the foremost seated passengers if it is carried in an approved cargo bin that meets the following requirements:

(1) The bin must withstand the load factors and emergency landing conditions applicable to the passenger seats of the airplane in which the bin is installed, multiplied by a factor of 1.15, using the combined weight of the bin and the maximum weight of cargo that may be carried in the bin.

(2) The maximum weight of cargo that the bin is approved to carry and any instructions necessary to ensure proper weight distribution within the bin must be conspicuously marked on the bin.

(3) The bin may not impose any load on the floor or other structure of the airplane that exceeds the load limitations of that structure.

(4) The bin must be attached to the seat tracks or to the floor structure of the airplane, and its attachment must withstand the load factors and emergency landing conditions applicable to the passenger seats of the airplane in which the bin is installed, multiplied by either the factor 1.15 or the seat attachment factor specified for the airplane, whichever is greater, using the combined weight of the bin and the maximum weight of cargo that may be carried in the bin.

(5) The bin may not be installed in a position that restricts access to or use of any required emergency exit, or of the aisle in the passenger compartment.

(6) The bin must be fully enclosed and made of material that is at least fire resistant.

(7) Suitable safeguards must be provided within the bin to prevent the cargo from shifting under emergency landing conditions.

(8) The bin may not be installed in a position that obscures any passenger's view of the "seat belt" sign, "no smoking" sign, or any required exit sign, unless an auxiliary sign or other approved means for proper notification of the passenger is provided.

(c) All cargo may be carried forward of the foremost seated passengers and carry-on baggage may be carried alongside the foremost seated passengers if the cargo (including carry-on baggage) is carried either in approved bins as specified in paragraph (b) of this section or in accordance with the following:

(1) It is properly secured by a safety belt or other tie down having enough strength to eliminate the possibility of
§ 125.185 Carriage of cargo in cargo compartments.

(2) It is packaged or covered in a manner to avoid possible injury to passengers.

(3) It does not impose any load on seats or the floor structure that exceeds the load limitation for those components.

(4) Its location does not restrict access to or use of any required emergency or regular exit, or of the aisle in the passenger compartment.

(5) Its location does not obscure any passenger's view of the "seat belt" sign, "no smoking" sign, or required exit sign, unless an auxiliary sign or other approved means for proper notification of the passenger is provided.

§ 125.187 Landing gear: Aural warning device.

(a) Except for airplanes that comply with the requirements of §25.729 of this chapter on or after January 6, 1992, each airplane must have a landing gear aural warning device that functions continuously under the following conditions:

(1) For airplanes with an established approach wing-flap position, whenever the wing flaps are extended beyond the maximum certificated approach climb configuration position in the Airplane Flight Manual and the landing gear is not fully extended and locked.

(2) For airplanes without an established approach climb wing-flap position, whenever the wing flaps are extended beyond the position at which landing gear extension is normally performed and the landing gear is not fully extended and locked.

(b) The warning system required by paragraph (a) of this section—

(1) May not have a manual shutoff; (2) Must be in addition to the throttle-actuated device installed under the type certification airworthiness requirements; and

(3) May utilize any part of the throttle-actuated system including the aural warning device.

(c) The flap position sensing unit may be installed at any suitable place in the airplane.


§ 125.189 Demonstration of emergency evacuation procedures.

(a) Each certificate holder must show, by actual demonstration conducted in accordance with paragraph (a) of appendix B of this part, that the emergency evacuation procedures for each type and model of airplane with a seating of more than 44 passengers, that is used in its passenger-carrying operations, allow the evacuation of the full seating capacity, including crewmembers, in 90 seconds or less, in each of the following circumstances:

(1) A demonstration must be conducted by the certificate holder upon the initial introduction of a type and model of airplane into passenger-carrying operations. However, the demonstration need not be repeated for any airplane type or model that has the same number and type of exits, the same cabin configuration, and the same emergency equipment as any other airplane used by the certificate holder in successfully demonstrating emergency evacuation in compliance with this paragraph.

(2) A demonstration must be conducted—

(i) Upon increasing by more than 5 percent the passenger seating capacity for which successful demonstration has been conducted; or

(ii) Upon a major change in the passenger cabin interior configuration that will affect the emergency evacuation of passengers.

(b) If a certificate holder has conducted a successful demonstration required by §121.291(a) in the same type airplane as a part 121 or part 123 certificate holder, it need not conduct a demonstration under this paragraph in
that type airplane to achieve certification under part 125.

(c) Each certificate holder operating or proposing to operate one or more landplanes in extended overwater operations, or otherwise required to have certain equipment under §125.209, must show, by a simulated ditching conducted in accordance with paragraph (b) of appendix B of this part, that it has the ability to efficiently carry out its ditching procedures.

(d) If a certificate holder has conducted a successful demonstration required by §121.291(b) in the same type airplane as a part 121 or part 123 certificate holder, it need not conduct a demonstration under this paragraph in that type airplane to achieve certification under part 125.

Subpart F—Instrument and Equipment Requirements

§125.201 Inoperable instruments and equipment.

(a) No person may take off an airplane with inoperable instruments or equipment installed unless the following conditions are met:

1. An approved Minimum Equipment List exists for that airplane.

2. The Flight Standards District Office having certification responsibility has issued the certificate holder operations specifications authorizing operations in accordance with an approved Minimum Equipment List. The flight crew shall have direct access at all times prior to flight to all of the information contained in the approved Minimum Equipment List through printed or other means approved by the Administrator in the certificate holder operations specifications. An approved Minimum Equipment List, as authorized by the operations specifications, constitutes an approved change to the type design without requiring recertification.

3. The approved Minimum Equipment List must:

(i) Be prepared in accordance with the limitations specified in paragraph (b) of this section.

(ii) Provide for the operation of the airplane with certain instruments and equipment in an inoperable condition.

(b) The following instruments and equipment may not be included in the Minimum Equipment List:

1. Instruments and equipment that are either specifically or otherwise required by the airworthiness requirements under which the airplane is type certificated and which are essential for safe operations under all operating conditions.

2. Instruments and equipment required by an airworthiness directive to be in operable condition unless the airworthiness directive provides otherwise.

3. Instruments and equipment required for specific operations by this part.

(c) Notwithstanding paragraphs (b)(1) and (b)(3) of this section, an airplane with inoperable instruments or equipment may be operated under a special flight permit under §§21.197 and 21.199 of this chapter.

[Doc. No. 25780, 56 FR 12310, Mar. 22, 1991]

§125.203 Radio and navigational equipment.

(a) No person may operate an airplane unless it has two-way radio communications equipment able, at least in flight, to transmit to, and receive from, ground facilities 25 miles away.

(b) No person may operate an airplane over-the-top unless it has radio navigational equipment able to receive radio signals from the ground facilities to be used.

(c) Except as provided in paragraph (e) of this section, no person may operate an airplane carrying passengers under IFR or in extended overwater operations unless it has at least the following radio communication and navigational equipment appropriate to the facilities to be used which are capable of transmitting to, and receiving from,
§ 125.205 Equipment requirements: Airplanes under IFR.

No person may operate an airplane under IFR unless it has—
(a) A vertical speed indicator;
(b) A free-air temperature indicator;
(c) A heated pitot tube for each airspeed indicator;
(d) A power failure warning device or vacuum indicator to show the power available for gyroscopic instruments from each power source;
(e) An alternate source of static pressure for the altimeter and the airspeed and vertical speed indicators;
(f) At least two generators each of which is on a separate engine, or which any combination of one-half of the total number are rated sufficiently to supply the electrical loads of all required instruments and equipment necessary for safe emergency operation of the airplane; and
(g) Two independent sources of energy (with means of selecting either), of which at least one is an engine-driven pump or generator, each of which is able to drive all gyroscopic instruments and installed so that failure of one instrument or source does not interfere with the energy supply to the remaining instruments or the other energy source. For the purposes of this paragraph, each engine-driven source of energy must be on a different engine.

§ 125.206 Pitot heat indication systems.

(a) Except as provided in paragraph (b) of this section, after April 12, 1981, no person may operate a transport category airplane equipped with a flight instrument pitot heating system unless the airplane is equipped with an operable pitot heat indication system that complies with §25.1326 of this chapter in effect on April 12, 1978.

(b) A certificate holder may obtain an extension of the April 12, 1981, compliance date specified in paragraph (a)
§ 125.207 Emergency equipment requirements.

(a) No person may operate an airplane having a seating capacity of 20 or more passengers unless it is equipped with the following emergency equipment:

(1) One approved first aid kit for treatment of injuries likely to occur in flight or in a minor accident, which meets the following specifications and requirements:

(i) Each first aid kit must be dust and moisture proof and contain only materials that either meet Federal Specifications GGK-391a, as revised, or as approved by the Administrator.

(ii) Required first aid kits must be readily accessible to the cabin flight attendants.

(iii) Except as provided in paragraph (a)(1)(iv) of this section, at time of takeoff, each first aid kit must contain at least the following or other contents approved by the Administrator:

<table>
<thead>
<tr>
<th>Contents</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesive bandage compressors, 1 in</td>
<td>16</td>
</tr>
<tr>
<td>Antiseptic swabs</td>
<td>20</td>
</tr>
<tr>
<td>Ammonia inhalants</td>
<td>10</td>
</tr>
<tr>
<td>Bandage compressors, 4 in</td>
<td>8</td>
</tr>
<tr>
<td>Triangular bandage compressors, 40 in</td>
<td>5</td>
</tr>
<tr>
<td>Arm splint, noninflatable</td>
<td>1</td>
</tr>
<tr>
<td>Leg splint, noninflatable</td>
<td>1</td>
</tr>
<tr>
<td>Roller bandage, 4 in</td>
<td>4</td>
</tr>
<tr>
<td>Adhesive tape, 1-in standard roll</td>
<td>2</td>
</tr>
<tr>
<td>Bandage scissors</td>
<td>1</td>
</tr>
<tr>
<td>Protective latex gloves or equivalent nonpermeable gloves</td>
<td>1</td>
</tr>
</tbody>
</table>

(iv) Protective latex gloves or equivalent nonpermeable gloves may be placed in the first aid kit or in a location that is readily accessible to crew members.

(2) A crash axe carried so as to be accessible to the crew but inaccessible to passengers during normal operations.

(3) Signs that are visible to all occupants to notify them when smoking is prohibited and when safety belts should be fastened. The signs must be so constructed that they can be turned on and off by a crewmember. They must be turned on for each takeoff and each landing and when otherwise considered to be necessary by the pilot in command.

(4) The additional emergency equipment specified in appendix A of this part.

(b) Megaphones. Each passenger-carrying airplane must have a portable battery-powered megaphone or megaphones readily accessible to the crewmembers assigned to direct emergency evacuation, installed as follows:

(1) One megaphone on each airplane with a seating capacity of more than 60 and less than 100 passengers, at the most rearward location in the passenger cabin where it would be readily accessible to a normal flight attendant seat. However, the Administrator may grant a deviation from the requirements of this paragraph if the Administrator finds that a different location would be more useful for evacuation of persons during an emergency.

(2) Two megaphones in the passenger cabin on each airplane with a seating capacity of more than 99 and less than 200 passengers, one installed at the forward end and the other at the most rearward location where it would be readily accessible to a normal flight attendant seat.

(3) Three megaphones in the passenger cabin on each airplane with a seating capacity of more than 199 passengers, one installed at the forward end, one installed at the most rearward location where it would be readily accessible to a normal flight attendant seat, and one installed in a readily accessible location in the mid-section of the airplane.

§ 125.209 Emergency equipment: Extended overwater operations.

(a) No person may operate an airplane in extended overwater operations unless it carries, installed in conspicuously marked locations easily accessible to the occupants if a ditching occurs, the following equipment:

(1) An approved life preserver equipped with an approved survivor locator light, or an approved flotation means, for each occupant of the aircraft. The life preserver or other flotation means must be easily accessible to each seated occupant. If a flotation means other than a life preserver is used, it must be readily removable from the airplane.

(2) Enough approved life rafts (with proper buoyancy) to carry all occupants of the airplane, and at least the following equipment for each raft clearly marked for easy identification—

(i) One canopy (for sail, sunshade, or rain catcher);

(ii) One radar reflector (or similar device);

(iii) One life raft repair kit;

(iv) One bailing bucket;

(v) One signaling mirror;

(vi) One police whistle;

(vii) One raft knife;

(viii) One CO₂ bottle for emergency inflation;

(ix) One inflation pump;

(x) Two oars;

(xi) One 75-foot retaining line;

(xii) One magnetic compass;

(xiii) One dye marker;

(xiv) One flashlight having at least two size "D" cells or equivalent;

(xv) At least one approved pyrotechnic signaling device;

(xvi) A 2-day supply of emergency food rations supplying at least 1,000 calories a day for each person;

(xvii) One sea water desalting kit for each two persons that raft is rated to carry, or two pints of water for each person the raft is rated to carry;

(xviii) One fishing kit; and

(xix) One book on survival appropriate for the area in which the airplane is operated.

(b) No person may operate an airplane in extended overwater operations unless there is attached to one of the life rafts required by paragraph (a) of this section, an approved survival type emergency locator transmitter. Batteries used in this transmitter must be replaced (or recharged, if the batteries are rechargeable) when the transmitter has been in use for more than one cumulative hour, or, when 50 percent of their useful life (or for rechargeable batteries, 50 percent of their useful life of charge) has expired, as established by the transmitter manufacturer under its approval. The new expiration date for replacing (or recharging) the battery must be legibly marked on the outside of the transmitter. The battery useful life (or useful life of charge) requirements of this paragraph do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.


§ 125.211 Seat and safety belts.

(a) No person may operate an airplane unless there are available during the takeoff, en route flight, and landing—

(1) An approved seat or berth for each person on board the airplane who is at least 2 years old; and

(2) An approved safety belt for separate use by each person on board the airplane who is at least 2 years old, except that two persons occupying a berth may share one approved safety belt and two persons occupying a multiple lounge or divan seat may share one approved safety belt during en route flight only.

(b) Except as provided in paragraphs (b)(1) and (b)(2) of this section, each person on board an airplane operated under this part shall occupy an approved seat or berth with a separate safety belt properly secured about him or her during movement on the surface, takeoff, and landing. A safety belt provided for the occupant of a seat may not be used for more than one person who has reached his or her second birthday. Notwithstanding the preceding requirements, a child may:

(1) Be held by an adult who is occupying an approved seat or berth, provided the child has not reached his or her second birthday and the child does not...
occupy or use any restraining device; or

(2) Notwithstanding any other requirement of this chapter, occupy an approved child restraint system furnished by the certificate holder or one of the persons described in paragraph (b)(2)(i) of this section, provided:

(i) The child is accompanied by a parent, guardian, or attendant designated by the child's parent or guardian to attend to the safety of the child during the flight;

(ii) Except as provided in paragraph (b)(2)(ii)(D) of this section, the approved child restraint system bears one or more labels as follows:

(A) Seats manufactured to U.S. standards between January 1, 1981, and February 25, 1985, must bear the label: "This child restraint system conforms to all applicable Federal motor vehicle safety standards";

(B) Seats manufactured to U.S. standards on or after February 26, 1985, must bear two labels:

(1) "This child restraint system conforms to all applicable Federal motor vehicle safety standards";

(2) "THIS RESTRAINT IS CERTIFIED FOR USE IN MOTOR VEHICLES AND AIRCRAFT" in red lettering;

(C) Seats that do not qualify under paragraphs (b)(2)(ii)(A) and (b)(2)(ii)(B) of this section must bear either a label showing approval of a foreign government or a label showing that the seat was manufactured under the standards of the United Nations;

(D) Notwithstanding any other provisions of this section, booster-type child restraint systems (as defined in Federal Motor Vehicle Standard No. 213 (49 CFR 571.213)), vest- and harness-type child restraint systems, and lap held child restraints are not approved for use in aircraft; and

(iii) The certificate holder complies with the following requirements:

(A) The restraint system must be properly secured to an approved forward-facing seat or berth;

(B) The child must be properly secured in the restraint system and must not exceed the specified weight limit for the restraint system; and

(C) The restraint system must bear the appropriate label(s).

(c) Except as provided in paragraph (c)(3) of this section, the following prohibitions apply to certificate holders:

(1) No certificate holder may permit a child, in an aircraft, to occupy a booster-type child restraint system, a vest-type child restraint system, a harness-type child restraint system, or a lap held child restraint system during take off, landing, and movement on the surface.

(2) Except as required in paragraph (c)(3) of this section, no certificate holder may prohibit a child, if requested by the child's parent, guardian, or designated attendant, from occupying a child restraint system furnished by the child's parent, guardian, or designated attendant provided:

(i) The child holds a ticket for an approved seat or berth or such seat or berth is otherwise made available by the certificate holder for the child's use;

(ii) The requirements of paragraph (b)(2) of this section are met;

(iii) The requirements of paragraph (b)(2) of this section are met; and

(iv) The child restraint system has one or more of the labels described in paragraphs (b)(2)(ii)(A) through (b)(2)(ii)(C) of this section.

(3) This section does not prohibit the certificate holder from providing child restraint systems authorized by this section or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.

(d) Each sideward facing seat must comply with the applicable requirements of §25.785(c) of this chapter.

(e) No certificate holder may take off or land an airplane unless each passenger seat back is in the upright position. Each passenger shall comply with instructions given by a crewmember in compliance with this paragraph. This paragraph does not apply to seats on which cargo or persons who are unable to sit erect for a medical reason are carried in accordance with procedures in the certificate holder's manual if the seat back does not obstruct any passenger's access to the aisle or to any emergency exit.

(f) Each occupant of a seat equipped with a shoulder harness must fasten the shoulder harness during takeoff.
§ 125.213 Miscellaneous equipment.

No person may conduct any operation unless the following equipment is installed in the airplane:

(a) If protective fuses are installed on an airplane, the number of spare fuses approved for the airplane and appropriately described in the certificate holder's manual.

(b) A windshield wiper or equivalent for each pilot station.

(c) A power supply and distribution system that meets the requirements of §§ 25.1309, 25.1331, 25.1351 (a) and (b) (1) through (4), 25.1353, 25.1355, and 25.1431(b) or that is able to produce and distribute the load for the required instruments and equipment, with use of an external power supply if any one power source or component of the power distribution system fails. The use of common elements in the system may be approved if the Administrator finds that they are designed to be reasonably protected against malfunctioning. Engine-driven sources of energy, when used, must be on separate engines.

(d) A means for indicating the adequacy of the power being supplied to required flight instruments.

(e) Two independent static pressure systems, vented to the outside atmospheric pressure so that they will be least affected by air flow variation or moisture or other foreign matter, and installed so as to be airtight except for the vent. When a means is provided for transferring an instrument from its primary operating system to an alternative system, the means must include a positive positioning control and must be marked to indicate clearly which system is being used.

(f) A placard on each door that is the means of access to a required passenger emergency exit to indicate that it must be open during takeoff and landing.

(g) A means for the crew, in an emergency, to unlock each door that leads to a compartment that is normally accessible to passengers and that can be locked by passengers.

§ 125.215 Operating information required.

(a) The operator of an airplane must provide the following materials, in current and appropriate form, accessible to the pilot at the pilot station, and the pilot shall use them:

(1) A cockpit checklist.

(2) An emergency cockpit checklist containing the procedures required by paragraph (c) of this section, as appropriate.

(3) Pertinent aeronautical charts.

(4) For IFR operations, each pertinent navigational en route, terminal area, and approach and letdown chart;

(5) One-engine-inoperative climb performance data and, if the airplane is approved for use in IFR or over-the-top operations, that data must be sufficient to enable the pilot to determine that the airplane is capable of carrying passengers over-the-top or in IFR conditions at a weight that will allow it to climb, with the critical engine inoperative, at least 50 feet a minute when operating at the MEA's of the route to be flown or 5,000 feet MSL, whichever is higher.

(b) Each cockpit checklist required by paragraph (a)(1) of this section must contain the following procedures:

(1) Before starting engines;

(2) Before take-off;

(3) Cruise;

(4) Before landing;

(5) After landing;

(6) Stopping engines.

(c) Each emergency cockpit checklist required by paragraph (a)(2) of this section must contain the following procedures, as appropriate:

(1) Emergency operation of fuel, hydraulic, electrical, and mechanical systems.

(2) Emergency operation of instruments and controls.

(3) Engine inoperative procedures.

(4) Any other emergency procedures necessary for safety.
§ 125.217 Passenger information.

(a) Except as provided in paragraph (b) of this section, no person may operate an airplane carrying passengers unless it is equipped with signs that meet the requirements of § 25.791 of this chapter and that are visible to passengers and flight attendants to notify them when smoking is prohibited and when safety belts must be fastened. The signs must be so constructed that the crew can turn them on and off. They must be turned on during airplane movement on the surface, for each takeoff, for each landing, and when otherwise considered to be necessary by the pilot in command.

(b) No passenger or crewmember may smoke while any “No Smoking” sign is lighted nor may any passenger or crewmember smoke in any lavatory.

(c) Each passenger required by § 125.211(b) to occupy a seat or berth shall fasten his or her safety belt about him or her and keep it fastened while any “Fasten Seat Belt” sign is lighted.

(d) Each passenger shall comply with instructions given him or her by crewmembers regarding compliance with paragraphs (b) and (c) of this section.

[Doc. No. 26142, 57 FR 42675, Sept. 15, 1992]

§ 125.219 Oxygen for medical use by passengers.

(a) Except as provided in paragraphs (d) and (e) of this section, no certificate holder may allow the carriage or operation of equipment for the storage, generation or dispensing of medical oxygen unless the unit to be carried is constructed so that all valves, fittings, and gauges are protected from damage during that carriage or operation and unless the following conditions are met:

1. The equipment must be—
   (i) Of an approved type or in conformity with the manufacturing, packaging, marking, labeling, and maintenance requirements of title 49 CFR, parts 171, 172, and 173, except § 173.24(a)(1); (ii) When owned by the certificate holder, maintained under the certificate holder’s approved maintenance program;
   (iii) Free of flammable contaminants on all exterior surfaces; and
   (iv) Appropriately secured.

2. When the oxygen is stored in the form of a liquid, the equipment must have been under the certificate holder’s approved maintenance program since its purchase new or since the storage container was last purged.

3. When the oxygen is stored in the form of a compressed gas as defined in title 49 CFR, § 173.300(a)—
   (i) When owned by the certificate holder, it must be maintained under its approved maintenance program; and
   (ii) The pressure in any oxygen cylinder must not exceed the rated cylinder pressure.

4. The pilot in command must be advised when the equipment is on board and when it is intended to be used.

5. The equipment must be stowed, and each person using the equipment must be seated so as not to restrict access to or use of any required emergency or regular exit or of the aisle in the passenger compartment.

(b) When oxygen is being used, no person may smoke and no certificate holder may allow any person to smoke within 10 feet of oxygen storage and dispensing equipment carried under paragraph (a) of this section.

(c) No certificate holder may allow any person other than a person trained in the use of medical oxygen equipment to connect or disconnect oxygen bottles or any other ancillary component while any passenger is aboard the airplane.

(d) Paragraph (a)(1)(i) of this section does not apply when that equipment is furnished by a professional or medical emergency service for use on board an airplane in a medical emergency when no other practical means of transportation (including any other properly equipped certificate holder) is reasonably available and the person carried under the medical emergency is accompanied by a person trained in the use of medical oxygen.

(e) Each certificate holder who, under the authority of paragraph (d) of this section, deviates from paragraph (a)(1)(i) of this section under a medical emergency shall, within 10 days, excluding Saturdays, Sundays, and federal holidays, after the deviation, send to the FAA Flight Standards district...
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office charged with the overall inspection of the certificate holder a complete report of the operation involved, including a description of the deviation and the reasons for it.

§ 125.221 Icing conditions: Operating limitations.

(a) No pilot may take off an airplane that has frost, ice, or snow adhering to any propeller, windshield, wing, stabilizing or control surface, to a powerplant installation, or to an airspeed, altimeter, rate of climb, or flight attitude instrument system, except under the following conditions:

1. Takeoffs may be made with frost adhering to the wings, or stabilizing or control surfaces, if the frost has been polished to make it smooth.

2. Takeoffs may be made with frost under the wing in the area of the fuel tanks if authorized by the Administrator.

(b) No certificate holder may authorize an airplane to take off and no pilot may take off an airplane any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the airplane unless the pilot has completed the testing required under §125.287(a)(9) and unless one of the following requirements is met:

1. A pretakeoff contamination check, that has been established by the certificate holder and approved by the Administrator for the specific airplane type, has been completed within 5 minutes prior to beginning takeoff. A pretakeoff contamination check is a check to make sure the wings and control surfaces are free of frost, ice, or snow.

2. The certificate holder has an approved alternative procedure and under that procedure the airplane is determined to be free of frost, ice, or snow.

3. The certificate holder has an approved deicing/anti-icing program that complies with §121.629(c) of this chapter and the takeoff complies with that program.

(c) Except for an airplane that has ice protection provisions that meet appendix C of this part or those for transport category airplane type certification, no pilot may fly an airplane into known or forecast severe icing conditions.

(d) Except for an airplane that has ice protection provisions that meet appendix C of this part or those for transport category airplane type certification, no pilot may fly an airplane into known or forecast severe icing conditions.

(e) If current weather reports and briefing information relied upon by the pilot in command indicate that the forecast icing condition that would otherwise prohibit the flight will not be encountered during the flight because of changed weather conditions since the forecast, the restrictions in paragraphs (b) and (c) of this section based on forecast conditions do not apply.


§ 125.223 Airborne weather radar equipment requirements.

(a) No person may operate an airplane governed by this part in passenger-carrying operations unless approved airborne weather radar equipment is installed in the airplane.

(b) No person may begin a flight under IFR or night VFR conditions when current weather reports indicate that thunderstorms, or other potentially hazardous weather conditions that can be detected with airborne weather radar equipment, may reasonably be expected along the route to be flown, unless the airborne weather radar equipment required by paragraph (a) of this section is in satisfactory operating condition.

(c) If the airborne weather radar equipment becomes inoperative en route, the airplane must be operated under the instructions and procedures specified for that event in the manual required by §125.71.

(d) This section does not apply to airplanes used solely within the State of Hawaii, within the State of Alaska, within that part of Canada west of longitude 130 degrees W, between latitude
§ 125.224 Traffic Alert and Collision Avoidance System.

(a) After December 30, 1993, no person may operate a large airplane that has a passenger seating configuration, excluding any pilot seat, of more than 30 seats unless it is equipped with an approved TCAS II traffic alert and collision avoidance system and the appropriate class of Mode S transponder.

(b) The manual required by § 125.71 of this part shall contain the following information on the TCAS II system required by this section:

(1) Appropriate procedures for—
   (i) The operation of the equipment; and
   (ii) Proper flightcrew action with respect to the equipment.

(2) An outline of all input sources that must be operating for the TCAS II to function properly.


§ 125.225 Flight recorders.

(a) Except as provided in paragraph (d) of this section, after October 11, 1991, no person may operate a large airplane type certificated before October 1, 1969, for operations above 25,000 feet altitude, nor a multiengine, turbine powered airplane type certificated after September 30, 1969, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving data from the storage medium. The following information must be able to be determined within the ranges, accuracies, resolutions, and recording intervals specified in appendix D of this part:

(1) Time;
(2) Altitude;
(3) Airspeed;
(4) Vertical acceleration;
(5) Heading;
(6) Time of each radio transmission to or from air traffic control;
(7) Pitch attitude;
(8) Roll attitude;
(9) Longitudinal acceleration;
(10) Control column or pitch control surface position; and
(11) Thrust of each engine.

(b) Except as provided in paragraph (d) of this section, after October 11, 1991, no person may operate a large airplane type certificated after September 30, 1969, for operations above 25,000 feet altitude, nor a multiengine, turbine powered airplane type certificated after September 30, 1969, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The following information must be able to be determined within the ranges, accuracies, resolutions, and recording intervals specified in appendix D of this part:

(1) Time;
(2) Altitude;
(3) Airspeed;
(4) Vertical acceleration;
(5) Heading;
(6) Time of each radio transmission to or from air traffic control;
(7) Pitch attitude;
(8) Roll attitude;
(9) Longitudinal acceleration;
(10) Control column or pitch control surface position; and
(11) Thrust of each engine.

(c) After October 11, 1991, no person may operate a large airplane equipped with a digital data bus and ARINC 717 digital flight data acquisition unit (DFDAU) or equivalent unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data.
§ 125.226 Digital flight data recorders.

(a) Except as provided in paragraph (l) of this section, no person may operate under this part a turbine-engine-powered transport category airplane unless it is equipped with one or more approved flight recorders that use a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. Any parameters specified in appendix D of this part must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified.

(d) No person may operate under this part an airplane that is manufactured after October 11, 1991, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The parameters specified in appendix D of this part must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified. For the purpose of this section, “manufactured” means the point in time at which the airplane inspection acceptance records reflect that the airplane is complete and meets the FAA-approved type design data.

(e) Whenever a flight recorder required by this section is installed, it must be operated continuously from the instant the airplane begins the takeoff roll until it has completed the landing roll at an airport.

(f) Except as provided in paragraph (g) of this section, and except for recorded data erased as authorized in this paragraph, each certificate holder shall keep the recorded data prescribed in paragraph (a), (b), (c), or (d) of this section, as applicable, until the airplane has been operated for at least 25 hours of the operating time specified in §125.227(a) of this chapter. A total of 1 hour of recorded data may be erased for the purpose of testing the flight recorder or the flight recorder system. Any erasure made in accordance with this paragraph must be of the oldest recorded data accumulated at the time of testing. Except as provided in paragraph (g) of this section, no record need be kept more than 60 days.

(g) In the event of an accident or occurrence that requires immediate notification of the National Transportation Safety Board under 49 CFR part 830 and that results in termination of the flight, the certificate holder shall remove the recording media from the airplane and keep the recorded data required by paragraph (a), (b), (c), or (d) of this section, as applicable, for at least 60 days or for a longer period upon the request of the Board or the Administrator.

(h) Each flight recorder required by this section must be installed in accordance with the requirements of §25.1459 of this chapter in effect on August 31, 1977. The correlation required by §25.1459(c) of this chapter need be established only on one airplane of any group of airplanes.

(1) That are of the same type;

(2) On which the flight recorder models and their installations are the same; and

(3) On which there are no differences in the type design with respect to the installation of the first pilot's instruments associated with the flight recorder. The most recent instrument calibration, including the recording medium from which this calibration is derived, and the recorder correlation must be retained by the certificate holder.

(i) Each flight recorder required by this section that records the data specified in paragraphs (a), (b), (c), or (d) of this section must have an approved device to assist in locating that recorder under water.

(6) Pitch attitude;
(7) Roll attitude;
(8) Manual radio transmitter keying, or CVR/DFDR synchronization reference;
(9) Thrust/power of each engine—primary flight crew reference;
(10) Autopilot engagement status;
(11) Longitudinal acceleration;
(12) Pitch control input;
(13) Lateral control input;
(14) Rudder pedal input;
(15) Primary pitch control surface position;
(16) Primary lateral control surface position;
(17) Primary yaw control surface position;
(18) Lateral acceleration;
(19) Pitch trim surface position or parameters of paragraph (a)(82) of this section if currently recorded;
(20) Trailing edge flap or cockpit flap control selection (except when parameters of paragraph (a)(85) of this section apply);
(21) Leading edge flap or cockpit flap control selection (except when parameters of paragraph (a)(86) of this section apply);
(22) Each Thrust reverser position (or equivalent for propeller airplane);
(23) Ground spoiler position or speed brake selection (except when parameters of paragraph (a)(87) of this section apply);
(24) Outside or total air temperature;
(25) Automatic Flight Control System (AFCS) modes and engagement status, including autothrottle;
(26) Radio altitude (when an information source is installed);
(27) Localizer deviation, MLS Azimuth;
(28) Glideslope deviation, MLS Elevation;
(29) Marker beacon passage;
(30) Master warning;
(31) Air/ground sensor (primary airplane system reference nose or main gear);
(32) Angle of attack (when information source is installed);
(33) Hydraulic pressure low (each system);
(34) Ground speed (when an information source is installed);
(35) Ground proximity warning system;
(36) Landing gear position or landing gear cockpit control selection;
(37) Drift angle (when an information source is installed);
(38) Wind speed and direction (when an information source is installed);
(39) Latitude and longitude (when an information source is installed);
(40) Stick shaker/pusher (when an information source is installed);
(41) Windshear (when an information source is installed);
(42) Throttle/power lever position;
(43) Additional engine parameters (as designed in appendix E of this part);
(44) Traffic alert and collision avoidance system;
(45) DME 1 and 2 distances;
(46) Nav 1 and 2 selected frequency;
(47) Selected barometric setting (when an information source is installed);
(48) Selected altitude (when an information source is installed);
(49) Selected speed (when an information source is installed);
(50) Selected mach (when an information source is installed);
(51) Selected vertical speed (when an information source is installed);
(52) Selected heading (when an information source is installed);
(53) Selected flight path (when an information source is installed);
(54) Selected decision height (when an information source is installed);
(55) EFIS display format;
(56) Multi-function/engine/alerts display format;
(57) Thrust command (when an information source is installed);
(58) Thrust target (when an information source is installed);
(59) Fuel quantity in CG trim tank (when an information source is installed);
(60) Primary Navigation System Reference;
(61) Icing (when an information source is installed);
(62) Engine warning each engine vibration (when an information source is installed);
(63) Engine warning each engine over temp. (when an information source is installed);
(64) Engine warning each engine oil pressure low (when an information source is installed);
(65) Engine warning each engine over speed (when an information source is installed);
(66) Yaw trim surface position;
(67) Roll trim surface position;
(68) Brake pressure (selected system);
(69) Brake pedal application (left and right);
(70) Yaw of sideslip angle (when an information source is installed);
(71) Engine bleed valve position (when an information source is installed);
(72) De-icing or anti-icing system selection (when an information source is installed);
(73) Computed center of gravity (when an information source is installed);
(74) AC electrical bus status;
(75) DC electrical bus status;
(76) APU bleed valve position (when an information source is installed);
(77) Hydraulic pressure (each system);
(78) Loss of cabin pressure;
(79) Computer failure;
(80) Heads-up display (when an information source is installed);
(81) Para-visual display (when an information source is installed);
(82) Cockpit trim control input position—pitch;
(83) Cockpit trim control input position—roll;
(84) Cockpit trim control input position—yaw;
(85) Trailing edge flap and cockpit flap control position;
(86) Leading edge flap and cockpit flap control position;
(87) Ground spoiler position and speed brake selection; and
(88) All cockpit flight control input forces (control wheel, control column, rudder pedal).

(b) For all turbine-engine-powered transport category airplanes manufactured on or before October 11, 1991, by August 20, 2001—

(1) For airplanes not equipped as of July 16, 1996, with a flight data acquisition unit (FDAU), the parameters listed in paragraphs (a)(1) through (a)(18) of this section must be recorded within the ranges and accuracies specified in Appendix D of this part, and—

(i) All cockpit flight control input forces (control wheel, control column, rudder pedal), and

(ii) Parameters listed in paragraphs (a)(12) through (a)(17) each may be recorded from a single source.

(2) For airplanes that were equipped as of July 16, 1996, with a flight data acquisition unit (FDAU), the parameters listed in paragraphs (a)(1) through (a)(22) of this section must be recorded within the ranges, accuracies, and recording intervals specified in Appendix E of this part. Parameters listed in paragraphs (a)(12) through (a)(17) each may be recorded from a single source.

(c) For all turbine-engine-powered transport category airplanes manufactured on or before October 11, 1991—

(1) That were equipped as of July 16, 1996, with one or more digital data bus(es) and an ARINC 717 digital flight data acquisition unit (DFDAU) or equivalent, the parameters specified in paragraphs (a)(1) through (a)(22) of this section must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix E of this part by August 20, 2001. Parameters listed in paragraphs (a)(12) through (a)(14) each may be recorded from a single source.

(2) Commensurate with the capacity of the recording system (DFDAU or equivalent and the DFDR), all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix E of this part by August 20, 2001.

(3) That were subject to §125.225(e) of this part, all conditions of §125.225(c)
must continue to be met until compliance with paragraph (c)(1) of this section is accomplished.

(d) For all turbine-engine-powered transport category airplanes that were manufactured after October 11, 1991—

(1) The parameters listed in paragraphs (a)(1) through (a)(34) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix E of this part by August 20, 2001. Parameters listed in paragraphs (a)(12) through (a)(14) each may be recorded from a single source.

(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system, must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix E of this part by August 20, 2001.

(e) For all turbine-engine-powered transport category airplanes that are manufactured after August 18, 2000—

(1) The parameters listed in paragraph (a)(1) through (57) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix E of this part.

(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system, must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix E of this part.

(f) For all turbine-engine-powered transport category airplanes that are manufactured after August 19, 2002 parameters listed in paragraph (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix E of this part.

(g) Whenever a flight data recorder required by this section is installed, it must be operated continuously from the instant the airplane begins its takeoff roll until it has completed its landing roll.

(h) Except as provided in paragraph (i) of this section, and except for recorded data erased as authorized in this paragraph, each certificate holder shall keep the recorded data prescribed by this section, as appropriate, until the airplane has been operated for at least 25 hours of the operating time specified in §121.359(a) of this part. A total of 1 hour of recorded data may be erased for the purpose of testing the flight recorder or the flight recorder system. Any erasure made in accordance with this paragraph must be of the oldest recorded data accumulated at the time of testing. Except as provided in paragraph (i) of this section, no record need to be kept more than 60 days.

(i) In the event of an accident or occurrence that requires immediate notification of the National Transportation Safety Board under 49 CFR 830 of its regulations and that results in termination of the flight, the certificate holder shall remove the recorder from the airplane and keep the recorder data prescribed by this section, as appropriate, for at least 60 days or for a longer period upon the request of the Board or the Administrator.

(j) Each flight data recorder system required by this section must be installed in accordance with the requirements of §25.1459 (a), (b), (d), and (e) of this chapter. A correlation must be established between the values recorded by the flight data recorder and the corresponding values being measured. The correlation must contain a sufficient number of correlation points to accurately establish the conversion from the recorded values to engineering units or discrete state over the full operating range of the parameter. Except for airplanes having separate altitude and airspeed sensors that are an integral part of the flight data recorder system, a single correlation may be established for any group of airplanes—

(1) That are of the same type;

(2) On which the flight recorder system and its installation are the same; and

(3) On which there is no difference in the type design with respect to the installation of those sensors associated with the flight data recorder system. Documentation sufficient to convert recorded data into the engineering units and discrete values specified in

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§ 125.227  Cockpit voice recorders.

(a) No certificate holder may operate a large turbine engine powered airplane or a large pressurized airplane with four reciprocating engines unless an approved cockpit voice recorder is installed in that airplane and is operated continuously from the start of the use of the checklist (before starting engines for the purpose of flight) to completion of the final checklist at the termination of the flight.

(b) Each certificate holder shall establish a schedule for completion, before the prescribed dates, of the cockpit voice recorder installations required by paragraph (a) of this section. In addition, the certificate holder shall identify any airplane specified in paragraph (a) of this section he intends to discontinue using before the prescribed dates.

(c) The cockpit voice recorder required by this section must also meet the following standards:

(1) The cockpit voice recorder required by this section shall be located in the cockpit area in such a manner that it is not likely to be separated during crash impact, unless the cockpit voice recorder and the flight data recorder, required by § 125.225 of this chapter, are installed adjacent to each other in such a manner that they are not likely to be separated during crash impact.

(d) In complying with this section, an approved cockpit voice recorder having an erasure feature may be used so that, at any time during the operation of the recorder, information recorded more than 30 minutes earlier may be erased or otherwise obliterated.

(e) For those aircraft equipped to record the uninterrupted audio signals received by a boom or a mask microphone the flight crewmembers are required to use the boom microphone below 18,000 feet mean sea level. No person may operate a large turbine engine powered airplane or a large pressurized airplane with four reciprocating engines manufactured after October 11, 1991, unless it is equipped to record the uninterrupted audio signal received by a boom or mask microphone in accordance with § 25.1457(c)(5) of this chapter.

(f) In the event of an accident or occurrence requiring immediate notification of the National Transportation Safety Board under 49 CFR part 830 of its regulations, which results in the termination of the flight, the certificate holder shall keep the recorded information for at least 60 days or, if requested by the Administrator or the applicable appendix must be maintained by the certificate holder.

(k) Each flight data recorder required by this section must have an approved device to assist in locating that recorder under water.

(l) The following airplanes that were manufactured before August 18, 1997 need not comply with this section, but must continue to comply with applicable paragraphs of § 125.225 of this chapter, as appropriate:

(1) Airplanes that meet the Stage 2 noise levels of part 36 of this chapter and are subject to § 91.801(c) of this chapter, until January 1, 2000. On and after January 1, 2000, any Stage 2 airplane otherwise allowed to be operated under Part 91 of this chapter must comply with the applicable flight data recorder requirements of this section for that airplane.


§ 125.247 Inspection programs and maintenance.

(a) No person may operate an airplane subject to this part unless:

(1) The replacement times for life-limited parts specified in the aircraft type certificate data sheets, or other documents approved by the Administrator, are complied with;

(2) Defects disclosed between inspections, or as a result of inspection, have been corrected in accordance with part 43 of this chapter; and

(3) The airplane, including airframe, aircraft engines, propellers, appliances, and survival and emergency equipment, and their component parts, is inspected in accordance with an inspection program approved by the Administrator.

(b) The inspection program specified in paragraph (a)(3) of this section must include at least the following:

(1) Instructions, procedures, and standards for the conduct of inspections for the particular make and model of airplane, including necessary tests and checks. The instructions and procedures must set forth in detail the parts and areas of the airframe, aircraft engines, propellers, appliances, and survival and emergency equipment required to be inspected.

(2) A schedule for the performance of inspections that must be performed under the program, expressed in terms of the time in service, calendar time, number of system operations, or any combination of these.

(c) No person may be used to perform the inspections required by this part unless that person is authorized to perform maintenance under part 43 of this chapter.

(d) No person may operate an airplane subject to this part unless—

(1) The installed engines have been maintained in accordance with the overhaul periods recommended by the manufacturer or a program approved by the Administrator; and

(2) The engine overhaul periods are specified in the inspection programs required by §125.247(a)(3).
§ 125.249  Maintenance manual requirements.

(a) Each certificate holder's manual required by §125.71 of this part shall contain, in addition to the items required by §125.73 of this part, at least the following:

(1) A description of the certificate holders maintenance organization, when the certificate holder has such an organization.

(2) A list of those persons with whom the certificate holder has arranged for performance of inspections under this part. The list shall include the persons' names and addresses.

(3) The inspection programs required by §125.247 of this part to be followed in the performance of inspections under this part including—

(i) The method of performing routine and nonroutine inspections (other than required inspections);

(ii) The designation of the items that must be inspected (required inspections), including at least those which if improperly accomplished could result in a failure, malfunction, or defect endangering the safe operation of the airplane;

(iii) The method of performing required inspections;

(iv) Procedures for the inspection of work performed under previously required inspection findings ("buy-back procedures");

(v) Procedures, standards, and limits necessary for required inspections and acceptance or rejection of the items required to be inspected;

(b) In addition, each certificate holder's manual shall contain a suitable system which may include a coded system that provides for the retention of the following:

(1) A description (or reference to data acceptable to the Administrator) of the work performed.

(2) The name of the person performing the work and the person's certificate type and number.

(3) The name of the person approving the work and the person's certificate type and number.

§ 125.251 Required inspection personnel.

(a) No person may use any person to perform required inspections unless the person performing the inspection is appropriately certificated, properly trained, qualified, and authorized to do so.

(b) No person may perform a required inspection if that person performed the item of work required to be inspected.

Subpart H—Airman and Crewmember Requirements

§ 125.261 Airman: Limitations on use of services.

(a) No certificate holder may use any person as an airman nor may any person serve as an airman unless that person—

(1) Holds an appropriate current airman certificate issued by the FAA;

(2) Has any required appropriate current airman and medical certificates in that person's possession while engaged in operations under this part; and

(3) Is otherwise qualified for the operation for which that person is to be used.

(b) Each airman covered by paragraph (a) of this section shall present the certificates for inspection upon the request of the Administrator.
§ 125.263 Composition of flightcrew.

(a) No certificate holder may operate an airplane with less than the minimum flightcrew specified in the type certificate and the Airplane Flight Manual approved for that type airplane and required by this part for the kind of operation being conducted.

(b) In any case in which this part requires the performance of two or more functions for which an airman certificate is necessary, that requirement is not satisfied by the performance of multiple functions at the same time by one airman.

(c) On each flight requiring a flight engineer, at least one flight crewmember, other than the flight engineer, must be qualified to provide emergency performance of the flight engineer's functions for the safe completion of the flight if the flight engineer becomes ill or is otherwise incapacitated. A pilot need not hold a flight engineer's certificate to perform the flight engineer's functions in such a situation.

§ 125.265 Flight engineer requirements.

(a) No person may operate an airplane for which a flight engineer is required by the type certification requirements without a flight crewmember holding a current flight engineer certificate.

(b) No person may serve as a required flight engineer on an airplane unless, within the preceding 6 calendar months, that person has had at least 50 hours of flight time as a flight engineer on that type airplane, or the Administrator has checked that person on that type airplane and determined that person is familiar and competent with all essential current information and operating procedures.

§ 125.267 Flight navigator and long-range navigation equipment.

(a) No certificate holder may operate an airplane outside the 48 conterminous States and the District of Columbia when its position cannot be reliably fixed for a period of more than 1 hour, without—

(1) A flight crewmember who holds a current flight navigator certificate; or

(2) Two independent, properly functioning, and approved long-range means of navigation which enable a reliable determination to be made of the position of the airplane by each pilot seated at that person's duty station.

(b) Operations where a flight navigator or long-range navigation equipment, or both, are required are specified in the operations specifications of the operator.

§ 125.269 Flight attendants.

(a) Each certificate holder shall provide at least the following flight attendants on each passenger-carrying airplane used:

(1) For airplanes having more than 19 but less than 51 passengers—one flight attendant.

(2) For airplanes having more than 50 but less than 101 passengers—two flight attendants.

(3) For airplanes having more than 100 passengers—two flight attendants plus one additional flight attendant for each unit (or part of a unit) of 50 passengers above 100 passengers.

(b) The number of flight attendants approved under paragraphs (a) and (b) of this section are set forth in the certificate holder's operations specifications.

(c) During takeoff and landing, flight attendants required by this section shall be located as near as practicable to required floor level exits and shall be uniformly distributed throughout the airplane to provide the most effective egress of passengers in event of an emergency evacuation.

§ 125.271 Emergency and emergency evacuation duties.

(a) Each certificate holder shall, for each type and model of airplane, assign to each category of required crewmember, as appropriate, the necessary functions to be performed in an emergency or a situation requiring emergency evacuation. The certificate holder shall show those functions are realistic, can be practically accomplished, and will meet any reasonably anticipated emergency, including the possible incapacitation of individual crewmembers or their inability to reach the passenger cabin because of shifting
§ 125.281  Cargo in combination cargo-passenger airplanes.

(b) The certificate holder shall describe in its manual the functions of each category of required crewmembers under paragraph (a) of this section.

Subpart I—Flight Crewmember Requirements

§ 125.281  Pilot-in-command qualifications.

No certificate holder may use any person, nor may any person serve, as pilot in command of an airplane unless that person—

(a) Holds at least a commercial pilot certificate, an appropriate category, class, and type rating, and an instrument rating; and

(b) Has had at least 1,200 hours of flight time as a pilot, including 500 hours of cross-country flight time, 100 hours of night flight time, including at least 10 night takeoffs and landings, and 75 hours of actual or simulated instrument flight time, at least 50 hours of which were actual flight.

§ 125.283  Second-in-command qualifications.

No certificate holder may use any person, nor may any person serve, as second in command of an airplane unless that person—

(a) Holds at least a commercial pilot certificate with appropriate category and class ratings, and an instrument rating; and

(b) For flight under IFR, meets the recent instrument experience requirements prescribed for a pilot in command in part 61 of this chapter.

§ 125.285  Pilot qualifications: Recent experience.

(a) No certificate holder may use any person, nor may any person serve, as a required pilot flight crewmember unless within the preceding 90 calendar days that person has made at least three takeoffs and landings in the type airplane in which that person is to serve. The takeoffs and landings required by this paragraph may be performed in a flight simulator if the flight simulator is qualified and approved by the Administrator for such purpose. However, any person who fails to qualify for a 90-consecutive-day period following the date of that person’s last qualification under this paragraph must reestablish recency of experience as provided in paragraph (b) of this section.

(b) A required pilot flight crewmember who has not met the requirements of paragraph (a) of this section may reestablish recency of experience by making at least three takeoffs and landings under the supervision of an authorized check airman, in accordance with the following:

(1) At least one takeoff must be made with a simulated failure of the most critical powerplant.

(2) At least one landing must be made from an ILS approach to the lowest ILS minimums authorized for the certificate holder.

(3) At least one landing must be made to a complete stop.

(c) A required pilot flight crewmember who performs the maneuvers required by paragraph (b) of this section in a qualified and approved flight simulator, as prescribed in paragraph (a) of this section, must—

(1) Have previously logged 100 hours of flight time in the same type airplane in which the pilot is to serve; and

(2) Be observed on the first two landings made in operations under this part by an authorized check airman who acts as pilot in command and occupies a pilot seat. The landings must be made in weather minimums that are not less than those contained in the certificate holder’s operations specifications for Category I operations and must be made within 45 days following completion of simulator testing.

(d) An authorized check airman who observes the takeoffs and landings prescribed in paragraphs (b) and (c)(3) of this section shall certify that the person being observed is proficient and qualified to perform flight duty in operations under this part, and may require any additional maneuvers that are determined necessary to make this certifying statement.

§ 125.287 Initial and recurrent pilot testing requirements.

(a) No certificate holder may use any person, nor may any person serve as a pilot, unless, since the beginning of the 12th calendar month before that service, that person has passed a written or oral test, given by the Administrator or an authorized check airman on that person’s knowledge in the following areas—

(1) The appropriate provisions of parts 61, 91, and 125 of this chapter and the operations specifications and the manual of the certificate holder;

(2) For each type of airplane to be flown by the pilot, the airplane powerplant, major components and systems, major appliances, performance and operating limitations, standard and emergency operating procedures, and the contents of the approved Airplane Flight Manual or approved equivalent, as applicable;

(3) For each type of airplane to be flown by the pilot, the method of determining compliance with weight and balance limitations for takeoff, landing, and en route operations;

(4) Navigation and use of air navigation aids appropriate to the operation of pilot authorization, including, when applicable, instrument approach facilities and procedures;

(5) Air traffic control procedures, including IFR procedures when applicable;

(6) Meteorology in general, including the principles of frontal systems, icing, fog, thunderstorms, and windshear, and, if appropriate for the operation of the certificate holder, high altitude weather;

(7) Procedures for avoiding operations in thunderstorms and hail, and for operating in turbulent air or in icing conditions;

(8) New equipment, procedures, or techniques, as appropriate;

(9) Knowledge and procedures for operating during ground icing conditions, (i.e., any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the airplane), if the certificate holder expects to authorize takeoffs in ground icing conditions, including:

(i) The use of holdover times when using deicing/anti-icing fluids.

(ii) Airplane deicing/anti-icing procedures, including inspection and check procedures and responsibilities.

(iii) Communications.

(iv) Airplane surface contamination (i.e., adherence of frost, ice, or snow) and critical area identification, and knowledge of how contamination adversely affects airplane performance and flight characteristics.

(v) Types and characteristics of deicing/anti-icing fluids, if used by the certificate holder.

(vi) Cold weather preflight inspection procedures.

(vii) Techniques for recognizing contamination on the airplane.

(b) No certificate holder may use any person, nor may any person serve, as a pilot in any airplane unless, since the beginning of the 12th calendar month before that service, that person has passed a competency check given by the Administrator or an authorized check airman in that type of airplane to determine that person’s competence in practical skills and techniques in that airplane or type of airplane. The extent of the competency check shall be determined by the Administrator or authorized check airman conducting the competency check. The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate required for the operations authorized and appropriate to the category, class, and type of airplane involved. For the purposes of this paragraph, type, as to an airplane, means any one of a group of airplanes determined by the Administrator to have a similar means of propulsion, the same manufacturer, and no significantly different handling or flight characteristics.

(c) The instrument proficiency check required by §125.291 may be substituted for the competency check required by this section for the type of airplane used in the check.

(d) For the purposes of this part, competent performance of a procedure or maneuver by a person to be used as a pilot requires that the pilot be the obvious master of the airplane with the successful outcome of the maneuver never in doubt.
§ 125.289 Initial and recurrent flight attendant crewmember testing requirements.

No certificate holder may use any person, nor may any person serve, as a flight attendant crewmember, unless, since the beginning of the 12th calendar month before that service, the certificate holder has determined by appropriate initial and recurrent testing that the person is knowledgeable and competent in the following areas as appropriate to assigned duties and responsibilities:

(a) Authority of the pilot in command;

(b) Passenger handling, including procedures to be followed in handling deranged persons or other persons whose conduct might jeopardize safety;

(c) Crewmember assignments, functions, and responsibilities during ditching and evacuation of persons who may need the assistance of another person to move expeditiously to an exit in an emergency;

(d) Briefing of passengers;

(e) Location and operation of portable fire extinguishers and other items of emergency equipment;

(f) Proper use of cabin equipment and controls;

(g) Location and operation of passenger oxygen equipment;

(h) Location and operation of all normal and emergency exits, including evacuation chutes and escape ropes; and

(i) Seating of persons who may need assistance of another person to move rapidly to an exit in an emergency as prescribed by the certificate holder's operations manual.

§ 125.291 Pilot in command: Instrument proficiency check requirements.

(a) No certificate holder may use any person, nor may any person serve, as a pilot in command of an airplane under IFR unless, since the beginning of the sixth calendar month before that service, the pilot has passed an instrument proficiency check and the Administrator or an authorized check airman has so certified in a letter of competency.

(b) No pilot may use any type of precision instrument approach procedure under IFR unless, since the beginning of the sixth calendar month before that use, the pilot has satisfactorily demonstrated that type of approach procedure and has been issued a letter of competency under paragraph (g) of this section.

(c) The instrument proficiency check required by paragraph (a) of this section consists of an oral or written equipment test and a flight check under simulated or actual IFR conditions. The equipment test includes questions on emergency procedures, engine operation, fuel and lubrication systems, power settings, stall speeds, best engine-out speed, propeller and supercharge operations, and hydraulic, mechanical, and electrical systems, as appropriate. The flight check includes navigation by instruments, recovery from simulated emergencies, and standard instrument approaches involving navigational facilities which that pilot is to be authorized to use.

(1) For a pilot in command of an airplane, the instrument proficiency
§ 125.297 Approval of flight simulators and flight training devices.

(a) Flight simulators and flight training devices approved by the Administrator may be used in training, testing, and checking required by this subpart.

(b) Each flight simulator and flight training device that is used in training, testing, and checking required under this subpart must be used in accordance with an approved training course conducted by a training center certified under part 142 of this chapter, or meet the following requirements:

(1) It must be specifically approved for—
§ 125.311  
(i) The certificate holder;  
(ii) The type airplane and, if applicable, the particular variation within type for which the check is being conducted; and  
(iii) The particular maneuver, procedure, or crewmember function involved.  
(2) It must maintain the performance, functional, and other characteristics that are required for approval.  
(3) It must be modified to conform with any modification to the airplane being simulated that changes the performance, functional, or other characteristics required for approval.  

Subpart J—Flight Operations

§ 125.311  Flight crewmembers at controls.  
(a) Except as provided in paragraph (b) of this section, each required flight crewmember on flight deck duty must remain at the assigned duty station with seat belt fastened while the airplane is taking off or landing and while it is en route.  
(b) A required flight crewmember may leave the assigned duty station—  
(1) If the crewmember's absence is necessary for the performance of duties in connection with the operation of the airplane;  
(2) If the crewmember's absence is in connection with physiological needs; or  
(3) If the crewmember is taking a rest period and relief is provided—  
(i) In the case of the assigned pilot in command, by a pilot qualified to act as pilot in command.  
(ii) In the case of the assigned second in command, by a pilot qualified to act as second in command of that airplane during en route operations. However, the relief pilot need not meet the recent experience requirements of § 125.285.

§ 125.313  Manipulation of controls when carrying passengers.  
No pilot in command may allow any person to manipulate the controls of an airplane while carrying passengers during flight, nor may any person manipulate the controls while carrying passengers during flight, unless that person is a qualified pilot of the certificate holder operating that airplane.

§ 125.315  Admission to flight deck.  
(a) No person may admit any person to the flight deck of an airplane unless the person being admitted is—  
(1) A crewmember;  
(2) An FAA inspector or an authorized representative of the National Transportation Safety Board who is performing official duties; or  
(3) Any person who has the permission of the pilot in command.  
(b) No person may admit any person to the flight deck unless there is a seat available for the use of that person in the passenger compartment, except—  
(1) An FAA inspector or an authorized representative of the Administrator or National Transportation Safety Board who is checking or observing flight operations; or  
(2) A certificated airman employed by the certificate holder whose duties require an airman certificate.

§ 125.317  Inspector's credentials: Admission to pilots' compartment: Forward observer's seat.  
(a) Whenever, in performing the duties of conducting an inspection, an FAA inspector presents an Aviation Safety Inspector credential, FAA Form 110A, to the pilot in command of an airplane operated by the certificate holder, the inspector must be given free and uninterrupted access to the pilot compartment of that airplane. However, this paragraph does not limit the emergency authority of the pilot in command to exclude any person from the pilot compartment in the interest of safety.  
(b) A forward observer's seat on the flight deck, or forward passenger seat with headset or speaker, must be provided for use by the Administrator while conducting en route inspections. The suitability of the location of the seat and the headset or speaker for use in conducting en route inspections is determined by the Administrator.

§ 125.319  Emergencies.  
(a) In an emergency situation that requires immediate decision and action, the pilot in command may take...
any action considered necessary under the circumstances. In such a case, the pilot in command may deviate from prescribed operations, procedures and methods, weather minimums, and this chapter, to the extent required in the interests of safety.

(b) In an emergency situation arising during flight that requires immediate decision and action by appropriate management personnel in the case of operations conducted with a flight following service and which is known to them, those personnel shall advise the pilot in command of the emergency, shall ascertain the decision of the pilot in command, and shall have the decision recorded. If they cannot communicate with the pilot, they shall declare an emergency and take any action that they consider necessary under the circumstances.

(c) Whenever emergency authority is exercised, the pilot in command or the appropriate management personnel shall keep the appropriate ground radio station fully informed of the progress of the flight. The person declaring the emergency shall send a written report of any deviation, through the operator’s director of operations, to the Administrator within 10 days, exclusive of Saturdays, Sundays, and Federal holidays, after the flight is completed or, in the case of operations outside the United States, upon return to the home base.

§ 125.321 Reporting potentially hazardous meteorological conditions and irregularities of ground and navigation facilities.

Whenever the pilot in command encounters a meteorological condition or an irregularity in a ground or navigation facility in flight, the knowledge of which the pilot in command considers essential to the safety of other flights, the pilot in command shall notify an appropriate ground station as soon as practicable.

§ 125.323 Reporting mechanical irregularities.

The pilot in command shall ensure that all mechanical irregularities occurring during flight are entered in the maintenance log of the airplane at the next place of landing. Before each flight, the pilot in command shall ascertain the status of each irregularity entered in the log at the end of the preceding flight.

§ 125.325 Instrument approach procedures and IFR landing minimums.

No person may make an instrument approach at an airport except in accordance with IFR weather minimums and unless the type of instrument approach procedure to be used is listed in the certificate holder’s operations specifications.

§ 125.327 Briefing of passengers before flight.

(a) Before each takeoff, each pilot in command of an airplane carrying passengers shall ensure that all passengers have been orally briefed on—

(1) Smoking. Each passenger shall be briefed on when, where, and under what conditions smoking is prohibited. This briefing shall include a statement that the Federal Aviation Regulations require passenger compliance with the lighted passenger information signs, posted placards, areas designated for safety purposes as no smoking areas, and crewmember instructions with regard to these items.

(2) The use of safety belts, including instructions on how to fasten and unfasten the safety belts. Each passenger shall be briefed on when, where, and under what conditions the safety belt must be fastened about him or her. This briefing shall include a statement that the Federal Aviation Regulations require passenger compliance with lighted passenger information signs and crewmember instructions concerning the use of safety belts.

(3) The placement of seat backs in an upright position before takeoff and landing;

(4) Location and means for opening the passenger entry door and emergency exits;

(5) Location of survival equipment;

(6) If the flight involves extended overwater operation, ditching procedures and the use of required flotation equipment;

(7) If the flight involves operations above 12,000 feet MSL, the normal and emergency use of oxygen; and
§ 125.329 Location and operation of fire extinguishers.

(b) Before each takeoff, the pilot in command shall ensure that each person who may need the assistance of another person to move expeditiously to an exit if an emergency occurs and that person’s attendant, if any, has received a briefing as to the procedures to be followed if an evacuation occurs. This paragraph does not apply to a person who has been given a briefing before a previous leg of a flight in the same airplane.

(c) The oral briefing required by paragraph (a) of this section shall be given by the pilot in command or a member of the crew. It shall be supplemented by printed cards for the use of each passenger containing—

(1) A diagram and method of operating the emergency exits; and
(2) Other instructions necessary for the use of emergency equipment on board the airplane.

Each card used under this paragraph must be carried in the airplane in locations convenient for the use of each passenger and must contain information that is appropriate to the airplane on which it is to be used.

(d) The certificate holder shall describe in its manual the procedure to be followed in the briefing required by paragraph (a) of this section.

(e) If the airplane does not proceed directly over water after takeoff, no part of the briefing required by paragraph (a)(6) of this section has to be given before takeoff but the briefing required by paragraph (a)(6) must be given before reaching the overwater part of the flight.


§ 125.329 Minimum altitudes for use of autopilot.

(a) Except as provided in paragraphs (b), (c), (d), and (e) of this section, no person may use an autopilot at an altitude above the terrain which is less than 500 feet or less than twice the maximum altitude loss specified in the approved Airplane Flight Manual or equivalent for a malfunction of the autopilot, whichever is higher.

(b) When using an instrument approach facility other than ILS, no person may use an autopilot at an altitude above the terrain that is less than 50 feet below the approved minimum descent altitude for that procedure, or less than twice the maximum loss specified in the approved Airplane Flight Manual or equivalent for a malfunction of the autopilot under approach conditions, whichever is higher.

(c) For ILS approaches when reported weather conditions are less than the basic weather conditions in § 91.155 of this chapter, no person may use an autopilot with an approach coupler at an altitude above the terrain that is less than 50 feet above the terrain, or the maximum altitude loss specified in the approved Airplane Flight Manual or equivalent for the malfunction of the autopilot with approach coupler, whichever is higher.

(d) Without regard to paragraph (a), (b), or (c) of this section, the Administrator may issue operations specifications to allow the use, to touchdown, of an approved flight control guidance system with automatic capability, if—

(1) The system does not contain any altitude loss (above zero) specified in the approved Airplane Flight Manual or equivalent for malfunction of the autopilot with approach coupler; and
(2) The Administrator finds that the use of the system to touchdown will not otherwise adversely affect the safety standards of this section.

(e) Notwithstanding paragraph (a) of this section, the Administrator issues operations specifications to allow the use of an approved autopilot system with automatic capability during the takeoff and initial climb phase of flight provided:

(1) The Airplane Flight Manual specifies a minimum altitude engagement certification restriction; and
(2) The system is not engaged prior to the minimum engagement certification restriction specified in the Airplane Flight Manual or an altitude specified by the Administrator, whichever is higher; and
§ 125.359 Flight release under VFR.

No person may release an airplane for VFR operation unless the ceiling and visibility en route, as indicated by
§ 125.361 Flight release under IFR or over-the-top.

Except as provided in §125.363, no person may release an airplane for operations under IFR or over-the-top unless appropriate weather reports or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the authorized minimums at the estimated time of arrival at the airport or airports to which released.

§ 125.363 Flight release over water.

(a) No person may release an airplane for a flight that involves extended overwater operation unless appropriate weather reports or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the authorized minimums at the estimated time of arrival at any airport to which released or to any required alternate airport.

(b) Each certificate holder shall conduct extended overwater operations under IFR unless it shows that operating under IFR is not necessary for safety.

(c) Each certificate holder shall conduct other overwater operations under IFR if the Administrator determines that operation under IFR is necessary for safety.

(d) Each authorization to conduct extended overwater operations under VFR and each requirement to conduct other overwater operations under IFR will be specified in the operations specifications.

§ 125.365 Alternate airport for departure.

(a) If the weather conditions at the airport of takeoff are below the landing minimums in the certificate holder's operations specifications for that airport, no person may release an airplane from that airport unless the flight release specifies an alternate airport located within the following distances from the airport of takeoff:

1. Airplanes having two engines. Not more than 1 hour from the departure airport at normal cruising speed in still air with one engine inoperative.
2. Airplanes having three or more engines. Not more than 2 hours from the departure airport at normal cruising speed in still air with one engine inoperative.

(b) For the purposes of paragraph (a) of this section, the alternate airport weather conditions must meet the requirements of the certificate holder's operations specifications.

(c) No person may release an airplane from an airport unless that person lists each required alternate airport in the flight release.

§ 125.367 Alternate airport for destination: IFR or over-the-top.

(a) Except as provided in paragraph (b) of this section, each person releasing an airplane for operation under IFR or over-the-top shall list at least one alternate airport for each destination airport in the flight release.

(b) An alternate airport need not be designated for IFR or over-the-top operations where the airplane carries enough fuel to meet the requirements of §§125.375 and 125.377 for flights outside the 48 conterminous States and the District of Columbia over routes without an available alternate airport for a particular airport of destination.

(c) For the purposes of paragraph (a) of this section, the weather requirements at the alternate airport must meet the requirements of the operator's operations specifications.

(d) No person may release a flight unless that person lists each required alternate airport in the flight release.

§ 125.369 Alternate airport weather minimums.

No person may list an airport as an alternate airport in the flight release unless the appropriate weather reports or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the alternate weather minimums specified in the certificate holder's operations specifications for that airport when the flight arrives.
§ 125.371 Continuing flight in unsafe conditions.

(a) No pilot in command may allow a flight to continue toward any airport to which it has been released if, in the opinion of the pilot in command, the flight cannot be completed safely, unless, in the opinion of the pilot in command, there is no safer procedure. In that event, continuation toward that airport is an emergency situation.

§ 125.373 Original flight release or amendment of flight release.

(a) A certificate holder may specify any airport authorized for the type of airplane as a destination for the purpose of original release.

(b) No person may allow a flight to continue to an airport to which it has been released unless the weather conditions at an alternate airport that was specified in the flight release are forecast to be at or above the alternate minimums specified in the operations specifications for that airport at the time the airplane would arrive at the alternate airport. However, the flight release may be amended en route to include any alternate airport that is within the fuel range of the airplane as specified in § 125.375 or § 125.377.

(c) No person may change an original destination or alternate airport that is specified in the original flight release to another airport while the airplane is en route unless the other airport is authorized for that type of airplane.

(d) Each person who amends a flight release en route shall record that amendment.

§ 125.375 Fuel supply: Nonturbine and turbopropeller-powered airplanes.

(a) Except as provided in paragraph (b) of this section, no person may release for flight or takeoff a nonturbine or turbopropeller-powered airplane unless, considering the wind and other weather conditions expected, it has enough fuel—

(1) To fly to and land at the airport to which it is released;

(2) Thereafter, to fly to and land at the most distant alternate airport specified in the flight release; and

(3) Thereafter, to fly for 45 minutes at normal cruising fuel consumption.

(b) If the airplane is released for any flight other than from one point in the conterminous United States to another point in the conterminous United States, it must carry enough fuel to meet the requirements of paragraphs (a) (1) and (2) of this section and thereafter fly for 30 minutes plus 15 percent of the total time required to fly at normal cruising fuel consumption to the airports specified in paragraphs (a) (1) and (2) of this section, or fly for 90 minutes at normal cruising fuel consumption, whichever is less.

(c) No person may release a nonturbine or turbopropeller-powered airplane to an airport for which an alternate is not specified under § 125.367(b) unless it has enough fuel, considering wind and other weather conditions expected, to fly to that airport and thereafter to fly for 3 hours at normal cruising fuel consumption.

§ 125.377 Fuel supply: Turbine-engine-powered airplanes other than turbopropeller.

(a) Except as provided in paragraph (b) of this section, no person may release for flight or takeoff a turbine-powered airplane (other than a turbopropeller-powered airplane) unless, considering the wind and other weather conditions expected, it has enough fuel—

(1) To fly to and land at the airport to which it is released;

(2) Thereafter, to fly to and land at the most distant alternate airport specified in the flight release; and

(3) Thereafter, to fly for 45 minutes at normal cruising fuel consumption.

(b) For any operation outside the 48 conterminous United States and the District of Columbia, unless authorized by the Administrator in the operations specifications, no person may release for flight or takeoff a turbine-powered airplane (other than a turbopropeller-powered airplane) unless, considering wind and other weather conditions expected, it has enough fuel—

(1) To fly and land at the airport to which it is released;

(2) Thereafter, to fly for a period of 10 percent of the total time required to fly from the airport of departure and
§ 125.379 Landing weather minimums: IFR.

(a) If the pilot in command of an airplane has not served 100 hours as pilot in command in the type of airplane being operated, the MDA or DH and visibility landing minimums in the certificate holder’s operations specifications are increased by 100 feet and one-half mile (or the RVR equivalent). The MDA or DH and visibility minimums need not be increased above those applicable to the airport when used as an alternate airport, but in no event may the landing minimums be less than a 300-foot ceiling and 1 mile of visibility.

(b) The 100 hours of pilot-in-command experience required by paragraph (a) may be reduced (not to exceed 50 percent) by substituting one landing in operations under this part in the type of airplane for 1 required hour of pilot-in-command experience if the pilot has at least 100 hours as pilot in command of another type airplane in operations under this part.

(c) Category II minimums, when authorized in the certificate holder’s operations specifications, do not apply until the pilot in command subject to paragraph (a) of this section meets the requirements of that paragraph in the type of airplane the pilot is operating.

§ 125.381 Takeoff and landing weather minimums: IFR.

(a) Regardless of any clearance from ATC, if the reported weather conditions are less than that specified in the certificate holder’s operations specifications, no pilot may—

(1) Take off an airplane under IFR; or

(2) Except as provided in paragraph (c) of this section, land an airplane under IFR.

(b) Except as provided in paragraph (c) of this section, no pilot may execute an instrument approach procedure if the latest reported visibility is less than the landing minimums specified in the certificate holder’s operations specifications.

(c) If a pilot initiates an instrument approach procedure when the latest weather report indicates that the specified visibility minimums exist, and a later weather report indicating below minimums conditions is received after the airplane—

(1) Is on an ILS final approach and has passed the outer marker,

(2) Is on final approach segment using a nonprecision approach procedure, or

(3) Is on PAR final approach and has been turned over to the final approach controller, the approach may be continued and a landing may be made if the pilot in command finds, upon reaching the authorized MAP or DH, that actual weather conditions are at least equal to the minimums prescribed in the operations specifications.

§ 125.383 Load manifest.

(a) Each certificate holder is responsible for the preparation and accuracy of a load manifest in duplicate containing information concerning the loading of the airplane. The manifest must be prepared before each takeoff and must include—

(1) The number of passengers;
§ 125.405 Disposition of load manifest, flight release, and flight plans.

(a) The pilot in command of an airplane shall carry in the airplane to its destination the original or a signed copy of the—

(1) Load manifest required by §125.383;

(2) Flight release;

(3) Airworthiness release; and

(4) Flight plan, including route.

(b) If a flight originates at a place other than the principal operations base of the certificate holder and there is at that place a person to manage the flight departure for the operator who does not aboard the airplane who is authorized by the operator shall, before or immediately after departure of the flight, mail signed copies of the documents listed in paragraph (a) of this section to the principal operations base.
§ 125.407 Maintenance log: Airplanes.
(a) Each person who takes corrective action or defers action concerning a reported or observed failure or malfunction of an airframe, aircraft engine, propeller, or appliance shall record the action taken in the airplane maintenance log in accordance with part 43 of this chapter.
(b) Each certificate holder shall establish a procedure for keeping copies of the airplane maintenance log required by this section in the airplane for access by appropriate personnel and shall include that procedure in the manual required by § 125.249.

§ 125.409 Reports of defects or unairworthy conditions.
(a) Each certificate holder shall report the occurrence or detection of each failure, malfunction, or defect, in a form and manner prescribed by the Administrator.
(b) The report must be made within 72 hours to the FAA Flight Standards district office in whose area the certificate holder has its principal operations base. The procedures to be used in complying with this section must be made a part of the manual procedures required by § 125.73(f).

§ 125.411 Airworthiness release or maintenance record entry.
(a) No certificate holder may operate an airplane after maintenance, preventive maintenance, or alteration prepares or causes to be prepared—
(1) An airworthiness release; or
(2) An entry in the aircraft maintenance records in accordance with the certificate holder's manual.

(b) The airworthiness release or maintenance record entry required by paragraph (a) of this section must—
(1) Be prepared in accordance with the procedures set forth in the certificate holder's manual;
(2) Include a certification that—
(i) The work was performed in accordance with the requirements of the certificate holder's manual;
(ii) All items required to be inspected were inspected by an authorized person who determined that the work was satisfactorily completed;
(iii) No known condition exists that would make the airplane unairworthy; and
(iv) So far as the work performed is concerned, the airplane is in condition for safe operation; and
(3) Be signed by a person authorized in part 43 of this chapter to perform maintenance, preventive maintenance, and alteration.

(d) Instead of restating each of the conditions of the certification required by paragraph (b) of this section, the certificate holder may state in its manual that the signature of a person authorized in part 43 of this chapter constitutes that certification.

APPENDIX A TO PART 125—ADDITIONAL EMERGENCY EQUIPMENT
(a) Means for emergency evacuation. Each passenger-carrying landplane emergency exit (other than over-the-wing) that is more than 6 feet from the ground with the airplane on the ground and the landing gear extended must have an approved means to assist the occupants in descending to the ground. The assisting means for a floor level emergency exit must meet the requirements of §25.809(f)(1) of this chapter in effect on April 30, 1972, except that, for any airplane for which the application for the type certificate was filed after that date, it must meet the requirements under which the airplane was type certificated. An assisting means that deploys automatically must be armed during
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taxiing, takeoffs, and landings. However, if the Administrator finds that the design of the exit makes compliance impractical, the Administrator may grant a deviation from the requirement of automatic deployment if the assisting means automatically erects upon deployment and, with respect to required emergency exits, if an emergency evacuation demonstration is conducted in accordance with §125.180. This paragraph does not apply to the rear window emergency exit of DC-3 airplanes operated with less than 36 occupants, including crewmembers, and less than five exits authorized for passenger use.

(b) Interior emergency exit marking. The following must be complied with for each passenger-carrying airplane:

(1) Each passenger emergency exit, its means of access, and means of opening must be conspicuously marked. The identity and location of each passenger emergency exit must be recognizable from a distance equal to the width of the cabin. The location of each passenger emergency exit must be indicated by a sign visible to occupants approaching along the main passenger aisle. There must be a locating sign—

(i) Above the aisle near each over-the-wing passenger emergency exit, or at another ceiling location if it is more practical because of headroom;

(ii) Next to each floor level passenger emergency exit, except that one sign may serve two such exits if they both can be seen readily from that sign; and

(iii) On each bulkhead or divider that prevents fore and aft vision along the passenger cabin, to indicate emergency exits beyond and obscured by it, except that if this is not possible the sign may be placed at another appropriate location.

(2) Each passenger emergency exit marking and each locating sign must meet the following:

(i) For an airplane for which the application for the type certificate was filed prior to May 1, 1972, each passenger emergency exit marking and each locating sign must be manufactured to meet the interior emergency exit marking requirements under which the airplane was type certificated. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 250 microlamberts.

(c) Lighting for interior emergency exit markings. Each passenger-carrying airplane must have an emergency lighting system, independent of the main lighting system. However, sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system must—

(1) Illuminate each passenger exit marking and locating sign; and

(2) Provide enough general lighting in the passenger cabin so that the average illumination, when measured at 40-inch intervals at seat armrest height, on the centerline of the main passenger aisle, is at least 0.06 foot-candles.

(d) Emergency light operation. Except for lights forming part of emergency lighting subsystems provided in compliance with §25.812(g) of this chapter (as prescribed in paragraph (h) of this section) that serve no more than one assist means, are independent of the airplane's main emergency lighting systems, and are automatically activated when the assist means is deployed, each light required by paragraphs (c) and (h) must comply with the following:

(1) Each light must be operable manually and must operate automatically from the independent lighting system—

(i) In a crash landing; or

(ii) Whenever the airplane's normal electric power to the light is interrupted.

(2) Each light must—

(i) Be operable manually from the flightcrew station and from a point in the passenger compartment that is readily accessible to a normal flight attendant seat;

(ii) Have a means to prevent inadvertent operation of the manual controls; and

(iii) When armed or turned on at either station, remain lighted or become lighted upon interruption of the airplane's normal electric power.

Each light must be armed or turned on during taxiing, takeoff, and landing. In showing compliance with this paragraph, a transverse vertical separation of the fuselage need not be considered.

(3) Each light must provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing.

(e) Emergency exit operating handles.

(1) For a passenger-carrying airplane for which the application for the type certificate was filed prior to May 1, 1972, the location of each passenger emergency exit operating
§ 25.813 Exit access.

(a) Each passenger-carrying airplane must be equipped with a passageway between passenger compartments to which the airplane was certificated.

(b) Emergency exit access requirements under which the airplane was type certificated. On these airplanes, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

(1) Emergency exit access. Access to emergency exits must be provided as follows for each passenger-carrying airplane:

(i) For an airplane for which the application for the type certificate was filed on or before May 1, 1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the airplane was type certificated. On these airplanes, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

(ii) The word “open” in red letters 1 inch high placed horizontally near the head of the arrow.

(2) For a passenger-carrying airplane for which the application for the type certificate was filed on or after May 1, 1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the airplane was type certificated.

(3) There must be access from the main aisle to each Type I or Type II emergency exit, must be unobstructed and at least 20 inches wide.

(4) If it is necessary to pass through a passageway between individual passenger areas, or leading to a Type I or Type II emergency exit, must be unobstructed width of the passageway below that required in paragraph (f)(1) of this section.

(5) No door may be installed in any partition between passenger compartments.

(6) If it is necessary to pass through a doorway separating the passenger cabin from other areas to reach any required emergency exit from any passenger seat, the door must have a means to latch it in open position, and the door must be latched open during each takeoff and landing. The latching means must be able to withstand the loads imposed upon it when the door is subjected to the ultimate interia forces, relative to the surrounding structure, listed in § 25.561(b) of this chapter.

(g) Exterior exit markings. Each passenger emergency exit and the means of opening that exit from the outside must be marked on the outside of the airplane. There must be a 2-inch colored band outlining each passenger emergency exit on the side of the fuselage. Each outside marking, including the band, must be readily distinguishable from the surrounding fuselage area by contrast in color. The markings must comply with the following:

(1) If the reflectance of the darker color is 15 percent or less, the reflectance of the lighter color must be at least 45 percent. “Reflectance” is the ratio of the luminous flux reflected by a body to the luminous flux it receives.

(2) If the reflectance of the darker color is greater than 15 percent, at least a 30 percent difference between its reflectance and the reflectance of the lighter color must be provided.

(3) Exits that are not in the side of the fuselage must have the external means of opening and applicable instructions marked conspicuously in red or, if red is inconspicuous against the background color, in bright chrome yellow and, when the opening means for such an exit is located on only one side of the fuselage, a conspicuous marking to that effect must be provided on the other side.

(h) Exterior emergency lighting and escape route.

(1) Each passenger-carrying airplane must be equipped with exterior lighting that meets the following requirements:

(i) For an airplane for which the application for the type certificate was filed prior to May 1, 1972, the access must meet the requirements of § 25.813(c) of this chapter in effect on April 30, 1972, and

(ii) For an airplane for which the application for the type certificate was filed on or after May 1, 1972, the access must meet the emergency exit access requirements under which the airplane was certified.

(2) Each passenger-carrying airplane must be equipped with a slip-resistant escape route that meets the following requirements:

(3) The exterior emergency lighting in the passageway between passenger compartments must be equipped with a slip-resistant escape route that meets the following requirements:

(4) If it is necessary to pass through a passageway between passenger compartments to reach any required emergency exit from any seat in the passenger cabin, the passageway
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(i) For an airplane for which the application for the type certificate was filed prior to May 1, 1972, the requirements of §25.803(e) of this chapter in effect on April 30, 1972.

(ii) For an airplane for which the application for the type certificate was filed on or after May 1, 1972, the slip-resistant escape route requirements under which the airplane was type certificated.

(iii) Floor level exits. Each floor level door or exit in the side of the fuselage (other than those leading into a cargo or baggage compartment that is not accessible from the passenger cabin) that is 44 or more inches high and 20 or more inches wide, but not wider than 46 inches, each passenger ventral exit (except the ventral exits on M-404 and CV-240 airplanes) and each tail cone exit must meet the requirements of this section for floor level emergency exits. However, the Administrator may grant a deviation from this paragraph if the Administrator finds that circumstances make full compliance impractical and that an acceptable level of safety has been achieved.

(j) Additional emergency exits. Approved emergency exits in the passenger compartments that are in excess of the minimum number of required emergency exits must meet all of the applicable provisions of this section except paragraph (i), (2), and (3) and must be readily accessible.

(k) On each large passenger-carrying turbojet-powered airplane, each ventral exit and tailcone exit must be—

(1) Designed and constructed so that it cannot be opened during flight; and

(2) Marked with a placard readable from a conspicuous location near the means of opening the exit, stating that the exit has been designed and constructed so that it cannot be opened during flight.

APPENDIX B TO PART 125—CRITERIA FOR DEMONSTRATION OF EMERGENCY EVACUATION PROCEDURES UNDER §125.189

(a) Aborted takeoff demonstration.

(i) The demonstration must be conducted either during the dark of the night or during daylight with the dark of the night simulated. If the demonstration is conducted in doors during daylight hours, it must be conducted with each window covered and each door closed to minimize the daylight effect. Illumination on the floor or ground may be used, but it must be kept low and shielded against shining into the airplane's windows or doors.

(ii) The airplane must be in a normal ground attitude with landing gear extended.

(iii) Stands or ramps may be used for descent from the wing to the ground. Safety equipment such as mats or inverted life rafts may be placed on the ground to protect participants. No other equipment that is not part of the airplane's emergency evacuation equipment may be used to aid the participants in reaching the ground.

(iv) The airplane's normal electric power sources must be deenergized.

(v) All emergency equipment for the type of passenger-carrying operation involved must be installed in accordance with the certificate holder's manual.

(vi) Each external door and exit and each internal door or curtain must be in position to simulate a normal takeoff.

(vii) A representative passenger load of persons in normal health must be used. At least 30 percent must be females. At least 5 percent must be over 60 years of age with a proportionate number of females. At least 5 percent, but not more than 10 percent, must be children under 12 years of age, prorated through that age group. Three life-size dolls, not included as part of the total passenger load, must be carried by passengers to simulate live infants 2 years old or younger. Crewmembers, mechanics, and training personnel who maintain or operate the airplane in the normal course of their duties may not be used as passengers.

(viii) No passenger may be assigned a specific seat except as the Administrator may require. Except as required by item (12) of this paragraph, no employee of the certificate holder may be seated next to an emergency exit.

(ix) Seat belts and shoulder harnesses (as required) must be fastened.

(x) Before the start of the demonstration, approximately one-half of the total average amount of carry-on baggage, blankets, pillows, and other similar articles must be distributed at several locations in the aisles and emergency exit access ways to create minor obstructions.

(xi) The seating density and arrangement of the airplane must be representative of the highest capacity passenger version of that airplane the certificate holder operates or proposes to operate.

(xii) Each crewmember must be a member of a regularly scheduled line crew, must be seated in that crewmember's normally assigned seat for takeoff, and must remain in that seat until the signal for commencement of the demonstration is received.

(xiii) No crewmember or passenger may be given prior knowledge of the emergency exits available for the demonstration.

(xiv) The certificate holder may not practice, rehearse, or describe the demonstration for the participants nor may any participant have taken part in this type of demonstration within the preceding 6 months.

(xv) The pretakeoff passenger briefing required by §125.327 may be given in accordance with the certificate holder's manual. The passengers may also be warned to follow directions of crewmembers, but may not be
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instructed on the procedures to be followed in the demonstration.

(16) If safety equipment as allowed by item (3) of this section is provided, either all passengers and cockpit windows must be blacked out or all of the emergency exits must have safety equipment to prevent disclosure of the available emergency exits.

(17) Not more than 50 percent of the emergency exits in the sides of the fuselage of an airplane that meet all of the requirements applicable to the required emergency exits for that airplane may be used for the demonstration. Exits that are not to be used in the demonstration must have the exit handle deactivated or must be indicated by red lights, red tape or other acceptable means, placed outside the exits to indicate fire or other reason that they are unusable. The exits to be used must be representative of all of the emergency exits on the airplane and must be designated by the certificate holder, subject to approval by the Administrator. At least one floor level exit must be used.

(18) All evacuees, except those using an over-the-wing exit, must leave the airplane by a means provided as part of the airplane's equipment.

(19) The certificate holder's approved procedures and all of the emergency equipment that is normally available, including slides, ropes, lights, and megaphones, must be fully utilized during the demonstration.

(20) The evacuation time period is completed when the last occupant has evacuated the airplane and is on the ground. Evacuees using stands or ramps allowed by item (3) above are considered to be on the ground when they are on the stand or ramp: Provided, That the acceptance rate of the stand or ramp is no greater than the acceptance rate of the means available on the airplane for descent from the wing during an actual crash situation.

(b) Ditching demonstration. The demonstration must assume that daylight hours exist outside the airplane and that all required crewmembers are available for the demonstration.

(1) If the certificate holder's manual requires the use of passengers to assist in the launching of liferafts, the needed passengers must be aboard the airplane for the demonstration according to the manual.

(2) A stand must be placed at each emergency exit and wing with the top of the platform at a height simulating the water level of the airplane following a ditching.

(3) After the ditching signal has been received, each evacuee must don a life vest according to the certificate holder's manual.

(4) Each liferaft must be launched and inflated according to the certificate holder's manual and all other required emergency equipment must be placed in rafts.

(5) Each evacuee must enter a liferaft and the crewmembers assigned to each liferaft must indicate the location of emergency equipment aboard the raft and describe its use.

(6) Either the airplane, a mockup of the airplane, or a floating device simulating a passenger compartment must be used.

(i) If a mockup of the airplane is used, it must be a life-size mockup of the interior and representative of the airplane currently used by or proposed to be used by the certificate holder and must contain adequate seats for use of the evacuees. Operation of the emergency exits and the doors must closely simulate that on the airplane. Sufficient wing area must be installed outside the over-the-wing exits to demonstrate the evacuation.

(ii) If a floating device simulating a passenger compartment is used, it must be representative, to the extent possible, of the passenger compartment of the airplane used in operations. Operation of the emergency exits and the doors must closely simulate operation on that airplane. Sufficient wing area must be installed outside the over-the-wing exits to demonstrate the evacuation. The device must be equipped with the same survival equipment as is installed on the airplane, to accommodate all persons participating in the demonstration.

APPENDIX C TO PART 125—ICE PROTECTION

If certification with ice protection provisions is desired, compliance with the following must be shown:

(a) The recommended procedures for the use of the ice protection equipment must be set forth in the Airplane Flight Manual.

(b) An analysis must be performed to establish, on the basis of the airplane's operational needs, the adequacy of the ice protection system for the various components of the airplane. In addition, tests of the ice protection system must be conducted to demonstrate that the airplane is capable of operating safely in continuous maximum and intermittent maximum icing conditions as described in appendix C of part 25 of this chapter.

(c) Compliance with all or portions of this section may be accomplished by reference, where applicable because of similarity of the designs, to analyses and tests performed by the applicant for a type certificated model.
### APPENDIX D TO PART 125—AIRPLANE FLIGHT RECORDER SPECIFICATION

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy sensor input to DFDR readout</th>
<th>Sampling interval (per second)</th>
<th>Resolution read out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (GMT or Frame Counter)</td>
<td>24 Hrs</td>
<td>±0.125% Per Hour</td>
<td>0.25 (1 per 4 seconds)</td>
<td>1 sec.</td>
</tr>
<tr>
<td>Altitude</td>
<td>From 0 ft to 4095 ft, sampled 1 per frame</td>
<td>±100 ft to ±700 ft (See Table 1, TSO-C51a).</td>
<td>5' to 35'</td>
<td></td>
</tr>
<tr>
<td>Airspeed</td>
<td>50 KIAS to V_{MIN} and V_{MAX} to 1.2 V_{NO}</td>
<td>±5%, ±3%</td>
<td>1</td>
<td>1 kt.</td>
</tr>
<tr>
<td>Heading</td>
<td>0° to 360°</td>
<td>±2°</td>
<td>1</td>
<td>0.5°</td>
</tr>
<tr>
<td>Normal Acceleration (Vertical)</td>
<td>±3g to +6g</td>
<td>±1% of max range excluding datum error of ±5%</td>
<td>8</td>
<td>0.01g.</td>
</tr>
<tr>
<td>Pitch Attitude</td>
<td>±75°</td>
<td>±2°</td>
<td>1</td>
<td>0.5°</td>
</tr>
<tr>
<td>Roll Attitude</td>
<td>±180°</td>
<td>±2°</td>
<td>1</td>
<td>0.5°</td>
</tr>
<tr>
<td>Radio Transmitter Keying</td>
<td>On-Off (Discrete)</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Thrust/Power on Each Engine</td>
<td>Full range or each discrete position.</td>
<td>±2° or as pilot’s indicator</td>
<td>0.5</td>
<td>0.5°</td>
</tr>
<tr>
<td>Leading Edge Flap or Cockpit Control Selection</td>
<td>Full range or each discrete position.</td>
<td>±3° or as pilot’s indicator</td>
<td>0.5</td>
<td>0.5°</td>
</tr>
<tr>
<td>Thrust Reverser Position</td>
<td>Stowed, in transit, and reverse (Discrete).</td>
<td></td>
<td>1 (per 4 seconds per engine).</td>
<td></td>
</tr>
<tr>
<td>Ground Spoiler Position/Speed Brake Selection</td>
<td>Full range or each discrete position.</td>
<td>±2° unless higher accuracy required.</td>
<td>1</td>
<td>0.2°</td>
</tr>
<tr>
<td>Autopilot Engagement</td>
<td>Discrete</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Longitudinal Acceleration</td>
<td>±1g</td>
<td>±1.5% max range excluding datum error of ±5%</td>
<td>4</td>
<td>0.01g</td>
</tr>
<tr>
<td>Pilot Input and/or Surface Position/Primary Controls (Pitch, Roll, Yaw)</td>
<td>Full range</td>
<td>±2° unless higher accuracy required.</td>
<td>1</td>
<td>0.5°</td>
</tr>
<tr>
<td>Lateral Acceleration</td>
<td>±1g</td>
<td>±1.5% max range excluding datum error of ±5%</td>
<td>4</td>
<td>0.01g</td>
</tr>
<tr>
<td>Pitch Trim Position</td>
<td>Full range</td>
<td>±3° unless higher accuracy required.</td>
<td>1</td>
<td>0.3°</td>
</tr>
<tr>
<td>Glideslope Deviation</td>
<td>±400 Microamps</td>
<td>±3%</td>
<td>1</td>
<td>0.3%</td>
</tr>
<tr>
<td>Localizer Deviation</td>
<td>±400 Microamps</td>
<td>±3%</td>
<td>1</td>
<td>0.3%</td>
</tr>
<tr>
<td>AFCS Mode and Engagement Status</td>
<td>Discrete</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Radio Altitude</td>
<td>20 ft to 2,500 ft</td>
<td>±2 ft or ±3% Whichever is Greater Below 500 ft and ±5% Above 500 ft.</td>
<td>1 ft + 5% above 500'.</td>
<td></td>
</tr>
<tr>
<td>Master Warning</td>
<td>Discrete</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Main Gear Squat Switch Status</td>
<td>As installed</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Angle of Attack (if recorded directly)</td>
<td>As installed</td>
<td></td>
<td>2</td>
<td>0.3°</td>
</tr>
<tr>
<td>Outside Air Temperature or Total Air Temperature</td>
<td>-50° C to +90° C</td>
<td>±2° C</td>
<td>0.5</td>
<td>0.3° C</td>
</tr>
<tr>
<td>Hydraulics, Each System Low Pressure</td>
<td>Discrete</td>
<td></td>
<td>0.5</td>
<td>or 0.5°</td>
</tr>
<tr>
<td>Groundspeed</td>
<td>As Installed</td>
<td>Most Accurate Systems Installed (IMS Equipped Aircraft Only).</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

If additional recording capacity is available, recording of the following parameters is recommended. The parameters are listed in order of significance:

- Drift Angle
- Wind Speed and Direction
- Latitude and Longitude
- Brake pressure/Brake pedal position
- Additional engine parameters:
  - EPR
  - N₁
  - N₂
  - EGT

If additional recording capacity is available, recording of the following parameters is recommended. The parameters are listed in order of significance:

- EPR
- N₁
- N₂
- EGT
## APPENDIX E TO PART 125—AIRPLANE FLIGHT RECORDER SPECIFICATION

The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Time or Relative Time Counts 24 Hrs, 0 to 4095.</td>
<td>±1/0.125% Per Hour</td>
<td>4</td>
<td>1 sec</td>
<td>UTC time preferred when available. Counter increments each 4 seconds of system operation.</td>
<td></td>
</tr>
<tr>
<td>2. Pressure Altitude.</td>
<td>±1000 ft to max certificated altitude of aircraft. +5000 ft.</td>
<td>±1 to ±700 ft (see table, TSO C124a or TSO C51a)</td>
<td>1</td>
<td>5' to 35'</td>
<td>Data should be obtained from the air data computer when practicable.</td>
</tr>
<tr>
<td>3. Indicated airspeed or Calibrated airspeed.</td>
<td>±5 KIAS or minimum value to Max V_{C} to 1.2 V_{C}.</td>
<td>±5% and ±3%</td>
<td>1</td>
<td>1 kt</td>
<td>Data should be obtained from the air data computer when practicable.</td>
</tr>
<tr>
<td>4. Heading (Primary flight crew reference). 0°-360° and Discrete “true” or “mag”.</td>
<td>±2°</td>
<td>1</td>
<td>0.5°</td>
<td>When true or magnetic heading can be selected as the primary heading reference, a discrete indicating selection must be recorded.</td>
<td></td>
</tr>
<tr>
<td>5. Normal Acceleration (Vertical).</td>
<td>±3g to ±6g</td>
<td>±1% of max range excluding datum error of ±5%</td>
<td>0.125.</td>
<td>0.004g.</td>
<td></td>
</tr>
<tr>
<td>6. Pitch Attitude</td>
<td>±75°</td>
<td>±2°</td>
<td>1 or 0.25 for airplanes operated under § 125.226(d).</td>
<td>0.5°</td>
<td>A sampling rate of 0.25 is recommended.</td>
</tr>
<tr>
<td>7. Roll Attitude</td>
<td>±180°</td>
<td>±2°</td>
<td>1 or 0.5 for airplanes operated under § 125.226(d).</td>
<td>0.5°</td>
<td>A sampling rate of 0.5 is recommended.</td>
</tr>
<tr>
<td>8. Manual Radio Transmitter Keying or CVR/DFDR synchronization reference</td>
<td>On-Off (Discrete) None</td>
<td></td>
<td>1</td>
<td></td>
<td>Preferably each crew member but one discrete acceptable for all transmission provided the CVR/DFDR system complies with TSO C124a CVR synchronization requirements (paragraph 4.2.1 ED-55).</td>
</tr>
</tbody>
</table>
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</thead>
<tbody>
<tr>
<td>9. Thrust/Power on Each Engine—primary flight crew reference.</td>
<td>Full Range Forward.</td>
<td>+/- 2%</td>
<td>1 (per engine)</td>
<td>0.2% of full range</td>
<td>Sufficient parameters (e.g. EPR, N1 or Torque, NP) as appropriate to the particular engine be recorded to determine power in forward and reverse thrust, including potential over-speed conditions.</td>
</tr>
<tr>
<td>10. Autopilot Engagement.</td>
<td>Discrete “on” or “off”.</td>
<td></td>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Longitudinal Acceleration.</td>
<td>+/- 1g</td>
<td>+/- 1.5% max. range excluding datum error of +/- 5%</td>
<td>0.25</td>
<td>0.004g</td>
<td></td>
</tr>
<tr>
<td>12a. Pitch Control(s) position (non-fly-by-wire systems).</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 125.226(f).</td>
<td>0.2% of full range</td>
<td>For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5 or 0.25, as applicable.</td>
</tr>
<tr>
<td>12b. Pitch Control(s) position (fly-by-wire systems).</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 125.226(f).</td>
<td>0.2% of full range</td>
<td></td>
</tr>
<tr>
<td>13a. Lateral Control position(s) (non-fly-by-wire).</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 125.226(f).</td>
<td>0.2% of full range</td>
<td>For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5 or 0.25, as applicable.</td>
</tr>
<tr>
<td>13b. Lateral Control position(s) (fly-by-wire).</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 125.226(f).</td>
<td>0.2% of full range</td>
<td></td>
</tr>
<tr>
<td>14a. Yaw Control position(s) (non-fly-by-wire).</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required.</td>
<td>0.5</td>
<td>0.2% of full range</td>
<td>For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5.</td>
</tr>
<tr>
<td>14b. Yaw Control position(s) (fly-by-wire).</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required.</td>
<td>0.5</td>
<td>0.2% of full range</td>
<td></td>
</tr>
<tr>
<td>15. Pitch Control Surface(s) Position.</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 125.226(f).</td>
<td>0.2% of full range</td>
<td>For airplanes fitted with multiple or split surfaces, a suitable combination of inputs is acceptable in lieu of recording each surface separately. The control surfaces may be sampled alternately to produce the sampling interval of 0.5 or 0.25.</td>
</tr>
</tbody>
</table>
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</thead>
<tbody>
<tr>
<td>16. Lateral Control Surface(s) Position.</td>
<td>Full Range</td>
<td>$\pm 2^\circ$ Unless Higher Accuracy Uniquely Required.</td>
<td>0.5 or 0.25 for airplanes operated under § 125.226(f).</td>
<td>0.2% of full range.</td>
<td>A suitable combination of surface position sensors is acceptable in lieu of recording each surface separately. The control surfaces may be sampled alternately to produce the sampling interval of 0.5 or 0.25.</td>
</tr>
<tr>
<td>17. Yaw Control Surface(s) Position.</td>
<td>Full Range</td>
<td>$\pm 2^\circ$ Unless Higher Accuracy Uniquely Required.</td>
<td>0.5</td>
<td>0.2% of full range.</td>
<td>For airplanes with multiple or split surfaces, a suitable combination of surface position sensors is acceptable in lieu of recording each surface separately. The control surfaces may be sampled alternately to produce the sampling interval of 0.5.</td>
</tr>
<tr>
<td>18. Lateral Acceleration.</td>
<td>$\pm 1g$</td>
<td>$\pm 1.5%$ max. range excluding datum error of $\pm 5%$.</td>
<td>0.25</td>
<td>0.004g.</td>
<td></td>
</tr>
<tr>
<td>19. Pitch Trim Surface Position.</td>
<td>Full Range</td>
<td>$\pm 3^\circ$ Unless Higher Accuracy Uniquely Required.</td>
<td>1</td>
<td>0.3% of full range.</td>
<td>Flap position and cockpit control may each be sampled alternately at 4 second intervals, to give a data point every 2 seconds.</td>
</tr>
<tr>
<td>20. Trailing Edge Flap or Cockpit Control Selection.</td>
<td>Full Range or Each Discrete Position (discrete).</td>
<td>$\pm 3^\circ$ or as Pilot’s indicator.</td>
<td>2</td>
<td>0.5% of full range.</td>
<td>Left and right sides, or flap position and cockpit control may each be sampled at 4 second intervals, so as to give a data point every 2 seconds.</td>
</tr>
<tr>
<td>21. Leading Edge Flap or Cockpit Control Selection.</td>
<td>Full Range or Each Discrete Position.</td>
<td>$\pm 3^\circ$ or as Pilot’s indicator and sufficient to determine each discrete position.</td>
<td>2</td>
<td>0.5% of full range.</td>
<td></td>
</tr>
<tr>
<td>23. Ground Spoiler Position or Speed Brake Selection.</td>
<td>Full Range or Each Discrete Position (discrete).</td>
<td>$\pm 2^\circ$ Unless Higher Accuracy Uniquely Required.</td>
<td>1 or 0.5 for airplanes operated under § 125.226(f).</td>
<td>0.2% of full range.</td>
<td></td>
</tr>
<tr>
<td>24. Outside Air Temperature or Total Air Temperature.</td>
<td>$-50^\circ$C to $+90^\circ$C</td>
<td></td>
<td>2</td>
<td>0.3 °C.</td>
<td></td>
</tr>
<tr>
<td>25. Autopilot/ Autothrottle/ AFCS Mode and Engagement Status.</td>
<td>A suitable combination of discretes.</td>
<td></td>
<td>1</td>
<td></td>
<td>Discretes should show which systems are engaged and which primary modes are controlling the flight path and speed of the aircraft.</td>
</tr>
<tr>
<td>26. Radio Altitude</td>
<td>$-20$ ft to $2,500$ ft.</td>
<td>$\pm 2$ ft or $\pm 3%$ Which-ever is Greater Below $500$ ft and $\pm 5%$. Above $500$ ft.</td>
<td>1</td>
<td>1 ft $\pm 5%$ above 500 ft.</td>
<td>For autoland/category 3 operations, each radio altimeter should be recorded, but arranged so that at least one is recorded each second.</td>
</tr>
</tbody>
</table>
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</tr>
</thead>
<tbody>
<tr>
<td>27. Localizer Deviation, MLS Azimuth, or GPS Lateral Deviation.</td>
<td>+/− 400 Microamps or available sensor range as installed +/− 62°.</td>
<td>As installed +/− 3% recommended.</td>
<td>1</td>
<td>0.3% of full range.</td>
<td>For autoland/category 3 operations, each system should be recorded but arranged so that at least one is recorded each second. It is not necessary to record ILS and MLS at the same time, only the approach aid in use need be recorded.</td>
</tr>
<tr>
<td>28. Glideslope Deviation, MLS Elevation, or GPS Vertical Deviation.</td>
<td>+/− 400 Microamps or available sensor range as installed. 0.9 to + 30°</td>
<td>As installed +/− 3% recommended.</td>
<td>1</td>
<td>0.3% of full range.</td>
<td>For autoland/category 3 operations, each system should be recorded but arranged so that at least one is recorded each second. It is not necessary to record ILS and MLS at the same time, only the approach aid in use need be recorded.</td>
</tr>
<tr>
<td>29. Marker Beacon Passage.</td>
<td>Discrete “on” or “off”.</td>
<td></td>
<td>1</td>
<td></td>
<td>A single discrete is acceptable for all markers.</td>
</tr>
<tr>
<td>30. Master Warning.</td>
<td>Discrete</td>
<td></td>
<td>1</td>
<td></td>
<td>Record the master warning and record each ‘red’ warning that cannot be determined from other parameters or from the cockpit voice recorder.</td>
</tr>
<tr>
<td>31. Air/ground sensor (primary airplane system reference nose or main gear).</td>
<td>Discrete “air” or “ground”.</td>
<td></td>
<td>1 (0.25 recommended).</td>
<td></td>
<td>If left and right sensors are available, each may be recorded at 4 or 1 second intervals, as appropriate, so as to give a data point at 2 seconds or 0.5 second, as required.</td>
</tr>
<tr>
<td>32. Angle of Attack (If measured directly).</td>
<td>As installed</td>
<td>As Installed</td>
<td>2 or 0.5 for airplanes operated under § 125.226(d).</td>
<td>0.3% of full range.</td>
<td></td>
</tr>
<tr>
<td>33. Hydraulic Pressure Low, Each System.</td>
<td>Discrete or available sensor range, “low” or “normal”.</td>
<td></td>
<td>2</td>
<td>0.5% of full range.</td>
<td></td>
</tr>
<tr>
<td>34. Groundspeed</td>
<td>As Installed</td>
<td>Most Accurate Systems installed.</td>
<td>1</td>
<td>0.2% of full range.</td>
<td>A suitable combination of discretes unless recorder capacity is limited in which case a single discrete for all modes is acceptable.</td>
</tr>
<tr>
<td>35. GPWS (ground proximity warning system).</td>
<td>Discrete “warning” or “off”.</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. Landing Gear Position or Landing gear cockpit control selection.</td>
<td>Discrete</td>
<td></td>
<td>4</td>
<td></td>
<td>A suitable combination of discretes should be recorded.</td>
</tr>
<tr>
<td>37. Drift Angle.</td>
<td>As installed</td>
<td>As Installed</td>
<td>4</td>
<td>0.1°.</td>
<td>Provided by the Primary Navigation System Reference. Where capacity permits Latitude/Longitude resolution should be 0.0002°.</td>
</tr>
<tr>
<td>38. Wind Speed and Direction.</td>
<td>As installed</td>
<td>As Installed</td>
<td>4</td>
<td>1 knot, and 1.0°.</td>
<td></td>
</tr>
<tr>
<td>39. Latitude and Longitude.</td>
<td>As installed</td>
<td>As Installed</td>
<td>4</td>
<td>0.002°, or as installed.</td>
<td></td>
</tr>
<tr>
<td>40. Stick shaker and pusher activation.</td>
<td>Discrete(s) “on” or “off”.</td>
<td></td>
<td>1</td>
<td></td>
<td>A suitable combination of discretes to determine activation.</td>
</tr>
<tr>
<td>41. Windshear Detection.</td>
<td>Discrete “warning” or “off”.</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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</tr>
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<tbody>
<tr>
<td>42. Throttle/power lever position.</td>
<td>Full Range</td>
<td>±/− 2%</td>
<td>1 for each lever</td>
<td>2% of full range</td>
<td>For airplanes with non-mechanically linked cockpit engine controls.</td>
</tr>
<tr>
<td>43. Additional Engine Parameters</td>
<td>As installed</td>
<td>As installed</td>
<td>Each engine each second.</td>
<td>2% of full range</td>
<td>Where capacity permits, the preferred priority is indicated vibration level, N2, EGT, Fuel Flow, Fuel Cut-off lever position and N3, unless engine manufacturer recommends otherwise.</td>
</tr>
<tr>
<td>44. Traffic Alert and Collision Avoidance System (TCAS)</td>
<td>Discretes</td>
<td>As installed</td>
<td>1</td>
<td></td>
<td>A suitable combination of discretes should be recorded to determine the status of Combined Control, Vertical Control, Up Advisory, and Down Advisory. (ref. ARINC Characteristic 735 Attachment 6E, TCAS VERTICAL RA DATA OUTPUT WORD.)</td>
</tr>
<tr>
<td>45. DME 1 and 2 Distance</td>
<td>0–200 NM</td>
<td>As installed</td>
<td>4</td>
<td>1 NM</td>
<td>1 mile.</td>
</tr>
<tr>
<td>46. Nav 1 and 2 Selected Frequency</td>
<td>Full range</td>
<td>As installed</td>
<td>4</td>
<td></td>
<td>Sufficient to determine selected frequency.</td>
</tr>
<tr>
<td>47. Selected barometric setting</td>
<td>Full range</td>
<td>±/− 5%</td>
<td>(1 per 64 sec.)</td>
<td>0.2% of full range.</td>
<td></td>
</tr>
<tr>
<td>48. Selected Altitude</td>
<td>Full range</td>
<td>±/− 5%</td>
<td>1</td>
<td>100 ft.</td>
<td></td>
</tr>
<tr>
<td>49. Selected speed</td>
<td>Full range</td>
<td>±/− 5%</td>
<td>1</td>
<td>1 knot.</td>
<td></td>
</tr>
<tr>
<td>50. Selected Mach</td>
<td>Full range</td>
<td>±/− 5%</td>
<td>1</td>
<td>01.</td>
<td></td>
</tr>
<tr>
<td>51. Selected vertical speed</td>
<td>Full range</td>
<td>±/− 5%</td>
<td>1</td>
<td>100 ft/min.</td>
<td></td>
</tr>
<tr>
<td>52. Selected heading</td>
<td>Full range</td>
<td>±/− 5%</td>
<td>1</td>
<td>1°.</td>
<td></td>
</tr>
<tr>
<td>53. Selected flight path</td>
<td>Full range</td>
<td>±/− 5%</td>
<td>1</td>
<td>1°.</td>
<td></td>
</tr>
<tr>
<td>54. Selected decision height</td>
<td>Full range</td>
<td>±/− 5%</td>
<td>64</td>
<td>1 ft.</td>
<td></td>
</tr>
<tr>
<td>55. EFIS display format</td>
<td>Discretes</td>
<td></td>
<td></td>
<td></td>
<td>Discretes should show the display system status (e.g., off, normal, fail, composite, sector, plan, nav aids, weather radar, range, copy).</td>
</tr>
<tr>
<td>56. Multi-function/Engine Alerts Display format</td>
<td>Discretes</td>
<td></td>
<td></td>
<td></td>
<td>Discretes should show the display system status (e.g., off, normal, fail, and the identity of display pages for emergency procedures, need not be recorded).</td>
</tr>
<tr>
<td>57. Thrust command</td>
<td>Full range</td>
<td>±/− 2%</td>
<td>2</td>
<td>2% of full range.</td>
<td></td>
</tr>
<tr>
<td>58. Thrust target</td>
<td>Full range</td>
<td>±/− 2%</td>
<td>4</td>
<td>2% of full range.</td>
<td></td>
</tr>
<tr>
<td>59. Fuel quantity in CG trim tank</td>
<td>Full range</td>
<td>±/− 5%</td>
<td>(1 per 64 sec.)</td>
<td>1% of full range.</td>
<td></td>
</tr>
<tr>
<td>60. Primary Navigation System Reference</td>
<td>Discretes GPS, INS, VOR, DME, MLS, Loran C, Omega, Localizer Glide slope</td>
<td></td>
<td></td>
<td></td>
<td>A suitable combination of discretes to determine the Primary Navigation System reference.</td>
</tr>
<tr>
<td>61. Ice Detection</td>
<td>Discretes “ice” or “no ice”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62. Engine warning each engine vibration.</td>
<td>Discretes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<tr>
<td>63. Engine warning each engine over temp.</td>
<td>Discrete</td>
<td>...........................</td>
<td>1</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>64. Engine warning each engine oil pressure low.</td>
<td>Discrete</td>
<td>...........................</td>
<td>1</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>65. Engine warning each engine over speed.</td>
<td>Discrete</td>
<td>...........................</td>
<td>1</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>66. Yaw Trim Surface Position.</td>
<td>Full Range</td>
<td>±/−3% Unless Higher Accuracy Uniquely Required.</td>
<td>2</td>
<td>0.3% of full range.</td>
<td>........................</td>
</tr>
<tr>
<td>67. Roll Trim Surface Position.</td>
<td>Full Range</td>
<td>±/−3% Unless Higher Accuracy Uniquely Required.</td>
<td>2</td>
<td>0.3% of full range.</td>
<td>........................</td>
</tr>
<tr>
<td>68. Brake Pressure (left and right).</td>
<td>As installed</td>
<td>±/−5%</td>
<td>1</td>
<td>........................</td>
<td>To determine braking effort applied by pilots or by autobrakes.</td>
</tr>
<tr>
<td>69. Brake Pedal Application (left and right).</td>
<td>Discrete or Analog “applied” or “off”.</td>
<td>...........................</td>
<td>1</td>
<td>........................</td>
<td>To determine braking applied by pilots.</td>
</tr>
<tr>
<td>70. Yaw or sideslip angle.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>1</td>
<td>0.5°</td>
<td>........................</td>
</tr>
<tr>
<td>71. Engine bleed valve position.</td>
<td>Discrete “open” or “closed”.</td>
<td>...........................</td>
<td>4</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>72. De-icing or anti-icing system selection.</td>
<td>Discrete “on” or “off”.</td>
<td>...........................</td>
<td>4</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>73. Computed center of gravity.</td>
<td>Full Range</td>
<td>±/−5% (1 per 64 sec.)</td>
<td>1</td>
<td>1% of full range.</td>
<td>........................</td>
</tr>
<tr>
<td>74. AC electrical bus status.</td>
<td>Discrete “power” or “off”.</td>
<td>...........................</td>
<td>4</td>
<td>........................</td>
<td>Each bus.</td>
</tr>
<tr>
<td>75. DC electrical bus status.</td>
<td>Discrete “power” or “off”.</td>
<td>...........................</td>
<td>4</td>
<td>........................</td>
<td>Each bus.</td>
</tr>
<tr>
<td>76. APU bleed valve position.</td>
<td>Discrete “open” or “closed”.</td>
<td>...........................</td>
<td>4</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>77. Hydraulic Pressure (each system).</td>
<td>Full range</td>
<td>±/−5%</td>
<td>2</td>
<td>100 psi.</td>
<td>........................</td>
</tr>
<tr>
<td>78. Loss of cabin pressure.</td>
<td>Discrete “loss” or “normal”.</td>
<td>...........................</td>
<td>1</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>79. Computer failure (critical flight and engine control systems).</td>
<td>Discrete “fail” or “normal”.</td>
<td>...........................</td>
<td>4</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>80. Heads-up display (when an information source is installed).</td>
<td>Discrete(s) “on” or “off”.</td>
<td>...........................</td>
<td>4</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>81. Para-visual display (when an information source is installed).</td>
<td>Discrete(s) “on” or “off”.</td>
<td>...........................</td>
<td>1</td>
<td>........................</td>
<td>........................</td>
</tr>
<tr>
<td>82. Cockpit trim control input position—pitch.</td>
<td>Full Range</td>
<td>±/−5%</td>
<td>1</td>
<td>0.2% of full range.</td>
<td>Where mechanical means for control inputs are not available, cockpit display trim positions should be recorded.</td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>83. Cockpit trim control input position—roll.</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.2% of full range.</td>
<td>Where mechanical means for control inputs are not available, cockpit display trim positions should be recorded.</td>
</tr>
<tr>
<td>84. Cockpit trim control input position—yaw.</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.2% of full range.</td>
<td>Where mechanical means for control inputs are not available, cockpit display trim positions should be recorded.</td>
</tr>
<tr>
<td>85. Trailing edge flap and cockpit flap control position.</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>2</td>
<td>0.5% of full range.</td>
<td>Trailing edge flaps and cockpit flap control position may each be sampled alternately at 4 second intervals to provide a sample each 0.5 second.</td>
</tr>
<tr>
<td>86. Leading edge flap and cockpit flap control position.</td>
<td>Full Range or Discrete</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.5% of full range.</td>
<td></td>
</tr>
<tr>
<td>87. Ground spoiler position and speed brake selection.</td>
<td>Full Range or discrete</td>
<td>+/- 5%</td>
<td>0.5</td>
<td>0.2% of full range.</td>
<td></td>
</tr>
<tr>
<td>88. All cockpit flight control input forces (control wheel, control column, rudder pedal).</td>
<td>Full Range</td>
<td>+/- 70 lbs. Control wheel</td>
<td>+/- 85 lbs. Control column</td>
<td>+/- 165 lbs. Rudder pedal</td>
<td>1</td>
</tr>
</tbody>
</table>


PART 129—OPERATIONS: FOREIGN AIR CARRIERS AND FOREIGN OPERATORS OF U.S.-REGISTERED AIRCRAFT ENGAGED IN COMMON CARRIAGE

SPECIAL FEDERAL AVIATION REGULATION NO. 38-2 [NOTE]

Sec.
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129.11 Operations specifications.
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129.14 Maintenance program and minimum equipment list requirements for U.S.-registered aircraft.
129.15 Flight crewmember certificates.
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129.29 Prohibition against smoking.
129.31 Airplant security.

APPENDIX A TO PART 129—APPLICATION FOR OPERATIONS SPECIFICATIONS BY FOREIGN AIR CARRIERS

AUTHORITY: 49 U.S.C. 106(g), 40104-40105, 40113, 40119, 44701-44702, 44712, 44716-44717, 44722, 44901-44904, 44906.
§ 129.1 Applicability.

(a) Except as provided in paragraph (b) of this section, this part prescribes rules governing the operation within the United States of each foreign air carrier holding a permit issued by the Civil Aeronautics Board or the Department of Transportation under section 402 of the Federal Aviation Act of 1958 (49 U.S.C. 1372) or other appropriate economic or exemption authority issued by the Civil Aeronautics Board or the Department of Transportation.

(b) Sections 129.14 and 129.20 also apply to U.S.-registered aircraft operated in common carriage by a foreign person or foreign air carrier solely outside the United States. For the purpose of this part, a foreign person is any person, not a citizen for the United States, who operates a U.S.-registered aircraft in common carriage solely outside the United States.

§ 129.11 Operations specifications.

(a) Each foreign air carrier shall conduct its operations within the United States in accordance with operations specifications issued by the Administrator under this part and in accordance with the Standards and Recommended Practices contained in part I (International Commercial Air Transport) of Annex 6 (Operation of Aircraft) to the Convention on International Civil Aviation Organization. Operations specifications shall include:

1. Airports to be used;
2. Routes or airways to be flown, and
3. Such operations rules and practices as are necessary to prevent collisions between foreign aircraft and other aircraft.

(b) Registration marketings of each U.S.-registered aircraft.

(c) An application for the issue or amendment of operations specifications must be submitted in duplicate, at least 30 days before beginning operations in the United States, to the Flight Standards District Office in the area where the applicant's principal business office is located or to the Regional Flight Standards Division Manager having jurisdiction over the area to be served by the operations. If a military airport of the United States is to be used as a regular, alternate, refueling, or provisional airport, the applicant must obtain written permission to do so from the Washington Headquarters of the military organization concerned and submit two copies of that written permission with his application. Detailed requirements governing applications for the issue or amendment of operations specifications are contained in Appendix A.

(d) No person operating under this part may operate or list on its operations specifications any airplane listed on operations specifications issued under part 125.

§ 129.13 Airworthiness and registration certificates.

(a) No foreign air carrier may operate any aircraft within the United States unless that aircraft carries current registration and airworthiness certificates issued or validated by the country of registry and displays the nationality and registration markings of that country.

(b) No foreign air carrier may operate a foreign aircraft within the United States except in accordance with the limitations on maximum certificated weights prescribed for that aircraft and that operation by the country of manufacture of the aircraft.

§ 129.14 Maintenance program and minimum equipment list requirements for U.S.-registered aircraft.

(a) Each foreign air carrier and each foreign person operating a U.S.-registered aircraft within or outside the United States in common carriage shall ensure that each aircraft is maintained in accordance with a program approved by the Administrator.
§ 129.15  Flight crewmember certificates.

No person may act as a flight crewmember unless he holds a current certificate or license issued or validated by the country in which that aircraft is registered, showing his ability to perform his duties connected with operating that aircraft.

[Doc. No. 7084, 30 FR 16074, Dec. 24, 1965]

§ 129.17  Radio equipment.

(a) Subject to the applicable laws and regulations governing ownership and operation of radio equipment, each foreign air carrier shall equip its aircraft with such radio equipment as is necessary to properly use the air navigation facilities, and to maintain communications with ground stations, along or adjacent to their routes in the United States.

(b) Whenever VOR navigational equipment is required by paragraph (a) of this section, at least one distance measuring equipment unit (DME), capable of receiving and indicating distance information from the VORTAC facilities to be used, must be installed on each airplane when operated at or above 24,000 feet MSL within the 50 states, and the District of Columbia.


§ 129.18  Traffic Alert and Collision Avoidance System.

(a) After December 30, 1993, no foreign air carrier may operate in the United States a turbine powered airplane that has a maximum passenger seating configuration, excluding any pilot seat, of more than 30 seats unless it is equipped with—

(1) A TCAS II traffic alert and collision avoidance system capable of coordinating with TCAS units that meet the specifications of TSO C–119, and

(2) The appropriate class of Mode S transponder.

(b) Unless otherwise authorized by the Administrator, after December 31, 1995, no foreign air carrier may operate
in the United States a turbine powered airplane that has a passenger seat configuration, excluding any pilot seat, of 10 to 30 seats unless it is equipped with an approved traffic alert and collision avoidance system. If a TCAS II system is installed, it must be capable of coordinating with TCAS units that meet TSO C-119.


§ 129.19 Air traffic rules and procedures.

(a) Each pilot must be familiar with the applicable rules, the navigational and communications facilities, and the air traffic control and other procedures, of the areas to be traversed by him within the United States.

(b) Each foreign air carrier shall establish procedures to assure that each of its pilots has the knowledge required by paragraph (a) of this section and shall check the ability of each of its pilots to operate safely according to applicable rules and procedures.

(c) Each foreign air carrier shall conform to the practices, procedures, and other requirements prescribed by the Administrator for U.S. air carriers for the areas to be operated in.

§ 129.20 Digital flight data recorders.

No person may operate an aircraft under this part that is registered in the United States unless it is equipped with one or more approved flight recorders that use a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The flight data recorder must record the parameters that would be required to be recorded if the aircraft were operated under part 121, 125, or 135 of this chapter, and must be installed by the compliance times required by those parts, as applicable to the aircraft.


§ 129.21 Control of traffic.

(a) Subject to applicable immigration laws and regulations, each foreign air carrier shall furnish the ground personnel necessary to provide for two-way voice communication between its aircraft and ground stations, at places where the Administrator finds that voice communication is necessary and that communications cannot be maintained in a language with which ground station operators are familiar.

(b) Each person furnished by a foreign air carrier under paragraph (a) of this section must be able to speak both English and the language necessary to maintain communications with the aircraft concerned, and shall assist ground personnel in directing traffic.

§ 129.23 Transport category cargo service airplanes: Increased zero fuel and landing weights.

(a) Notwithstanding the applicable structural provisions of the transport category airworthiness regulations, but subject to paragraphs (b) through (g) of this section, a foreign air carrier may operate (for cargo service only) any of the following transport category airplanes (certificated under part 4b of the Civil Air Regulations effective before March 13, 1956) at increased zero fuel and landing weights—

(1) DC-6A, DC-6B, DC-7B, and DC-7C; and

(2) L-1049 B, C, D, E, F, G, and H, and the L-1549A when modified in accordance with supplemental type certificate SA 4-1402.

(b) The zero fuel weight (maximum weight of the airplane with no disposable fuel and oil) and the structural landing weight may be increased beyond the maximum approved in full compliance with applicable rules only if the Administrator finds that—

(1) The increase is not likely to reduce seriously the structural strength;

(2) The probability of sudden fatigue failure is not noticeably increased;

(3) The flutter, deformation, and vibration characteristics do not fall below those required by applicable regulations; and

(4) All other applicable weight limitations will be met.

(c) No zero fuel weight may be increased by more than five percent, and the increase in the structural landing weight may not exceed the amount, in pounds, of the increase in zero fuel weight.
§ 129.25  Airplane security.

(a) The following are definitions of terms used in this section:

(1) Approved security program means a security program required by part 108 of this title approved by the Administrator.

(2) Certificate holder means a person holding an FAA air carrier operating certificate or operating certificate when that person engages in scheduled passenger or public charter operations, or both.

(3) Passenger seating configuration means the total number of seats for which the aircraft is type certificated that can be made available for passenger use aboard a flight and includes that seat in certain airplanes which may be used by a representative of the Administrator to conduct flight checks but is available for revenue purposes on other occasions.

(4) Private charter means any charter for which the charterer engages the total capacity of an airplane for the carriage only of:

(i) Passengers in civil or military air movements conducted under contract with the Government of the United States or the Government of a foreign country; or

(ii) Passengers invited by the charterer, the cost of which is borne entirely by the charterer and not directly or indirectly by the individual passengers.

(5) Public charter means any charter that is not a private charter.

(6) Scheduled passenger operations means holding out to the public of air transportation service for passengers from identified air terminals at a set time announced by timetable or schedule published in a newspaper, magazine, or other advertising medium.

(7) Sterile area means an area to which access is controlled by the inspection of persons and property in accordance with an approved security program or a security program used in accordance with §129.25.

(b) Each foreign air carrier landing or taking off in the United States shall adopt and use a security program, for each scheduled and public charter passenger operation, that meets the requirements of—

(1) Paragraph (c) of this section for each operation with an airplane having a passenger seating configuration of more than 60 seats;

(2) Paragraph (c) of this section for each operation that will provide deplaned passengers access, that is not controlled by a certificate holder using an approved security program or a foreign air carrier using a security program required by this section, to a sterile area;

(3) Paragraph (c) of this section for each operation with an airplane having a passenger seating configuration of more than 30 seats but less than 61 seats for which the FAA has notified the foreign air carrier that a threat exists; and

(4) Paragraph (d) of this section for each operation with an airplane having a passenger seating configuration of more than 30 seats but less than 61 seats, when the the Director of Civil Aviation Security or a designate of the Director has not notified the foreign air carrier in writing that a threat exists with respect to that operation.
(c) Each security program required by paragraph (b) (1), (2), or (3) of this section shall be designed to—

(1) Prevent or deter the carriage aboard airplanes of any explosive, incendiary device or a deadly or dangerous weapon on or about each individual’s person or accessible property, except as provided in §129.27 of this part, through screening by weapon-detecting procedures or facilities;

(2) Prohibit unauthorized access to airplanes;

(3) Ensure that baggage is accepted by a responsible agent of the foreign air carrier; and

(4) Prevent cargo and checked baggage from being loaded aboard its airplanes unless handled in accordance with the foreign air carrier’s security procedures.

(d) Each security program required by paragraph (b)(4) of this section shall include the procedures used to comply with the applicable requirements of paragraphs (h)(2) and (i) of this section regarding law enforcement officers.

(e) Each foreign air carrier required to adopt and use a security program pursuant to paragraph (b) of this section shall have a security program acceptable to the Administrator. A foreign air carrier’s security program is acceptable only if the Administrator finds that the security program provides passengers a level of protection similar to the level of protection provided by U.S. air carriers serving the same airports. Foreign air carriers shall employ procedures equivalent to those required of U.S. air carriers serving the same airport if the Administrator determines that such procedures are necessary to provide passengers a similar level of protection. The following procedures apply for acceptance of a security program by the Administrator:

(1) Unless otherwise authorized by the Administrator, each foreign air carrier required to have a security program by paragraph (b) of this section shall submit its program to the Administrator at least 90 days before the intended date of passenger operations. The proposed security program must be in English unless the Administrator requests that the proposed program be submitted in the official language of the foreign air carrier’s country. The Administrator will notify the foreign air carrier of the security program’s acceptability, or the need to modify the proposed security program for it to be acceptable under this part, within 30 days after receiving the proposed security program. The foreign air carrier may petition the Administrator to reconsider the notice to modify the security program within 30 days after receiving a notice to modify.

(2) In the case of a security program previously found to be acceptable pursuant to this section, the Administrator may subsequently amend the security program in the interest of safety in air transportation or in air commerce and in the public interest within a specified period of time. In making such an amendment, the following procedures apply:

(i) The Administrator notifies the foreign air carrier, in writing, of a proposed amendment, fixing a period of not less than 45 days within which the foreign air carrier may submit written information, views, and arguments on the proposed amendment.

(ii) At the end of the comment period, after considering all relevant material, the Administrator notifies the foreign air carrier of any amendment to be adopted and the effective date, or rescinds the notice of proposed amendment. The foreign air carrier may petition the Administrator to reconsider the amendment, in which case the effective date of the amendment is stayed until the Administrator reconsidered the matter.

(3) If the Administrator finds that there is an emergency requiring immediate action with respect to safety in air transportation or in air commerce that makes the procedures in paragraph (e)(2) of this section impractical or contrary to the public interest, the Administrator may issue an amendment to the foreign air carrier security program, effective without stay on the date the foreign air carrier receives notice of it. In such a case, the Administrator incorporates in the notice of amendment the finding and a brief statement of the reasons for the amendment.

(4) A foreign air carrier may submit a request to the Administrator to amend
its security program. The requested amendment must be filed with the Administrator at least 45 days before the date the foreign carrier proposes that the amendment would become effective, unless a shorter period is allowed by the Administrator. Within 30 days after receiving the requested amendment, the Administrator will notify the foreign air carrier whether the amendment is acceptable. The foreign air carrier may petition the Administrator to reconsider a notice of unacceptability of the requested amendment within 45 days after receiving notice of unacceptability.

(5) Each foreign air carrier required to use a security program by paragraph (b) of this section shall, upon request of the Administrator and in accordance with the applicable law, provide information regarding the implementation and operation of its security program.

(f) No foreign air carrier may land or take off an airplane in the United States, in passenger operations, after receiving a bomb or air piracy threat against that airplane, unless the following actions are taken:

(1) If the airplane is on the ground when a bomb threat is received and the next scheduled flight of the threatened airplane is to or from a place in the United States, the foreign air carrier ensures that the pilot in command is advised to submit the airplane immediately for a security inspection and an inspection of the airplane is conducted before the next flight.

(2) If the airplane is in flight to a place in the United States when a bomb threat is received, the foreign air carrier ensures that the pilot in command is advised immediately to take the emergency action necessary under the circumstances and a security inspection of the airplane is conducted immediately after the next landing.

(3) If information is received of a bomb or air piracy threat against an airplane engaged in an operation specified in paragraph (f)(1) or (f)(2) of this section, the foreign air carrier ensures that notification of the threat is given to the appropriate authorities of the State in whose territory the airplane is located or, if in flight, the appropriate authorities of the State in whose territory the airplane is to land.

(g) Each foreign air carrier conducting an operation for which a security program is required by paragraph (b) (1), (2), or (3) of this section shall refuse to transport—

(1) Any person who does not consent to a search of his or her person in accordance with the security program; and

(2) Any property of any person who does not consent to a search or inspection of that property in accordance with the security program.

(h) At airports within the United States not governed by part 107 of this chapter, each foreign air carrier engaging in public charter passenger operations shall—

(1) When using a screening system required by paragraph (b) of this section, provide for law enforcement officers meeting the qualifications and standards, and in the number and manner, specified in part 107; and

(2) When using an airplane having a passenger seating configuration of more than 30 but less than 61 seats for which a screening system is not required by paragraph (b) of this section, arrange for law enforcement officers meeting the qualifications and standards specified in part 107 to be available to respond to an incident and provide to appropriate employees, including crewmembers, current information with respect to procedures for obtaining law enforcement assistance at that airport.

(i) At airports governed by part 107 of this chapter, each foreign air carrier engaging in scheduled passenger operations or public charter passenger operations when using an airplane with a passenger seating configuration of more than 30 but less than 61 seats for which a screening system is not required by paragraph (b) of this section shall arrange for law enforcement officers meeting the qualifications and standards specified in part 107 to be available to respond to an incident and provide to appropriate employees, including crewmembers, current information with respect to procedures for obtaining law enforcement assistance at that airport.

(j) Unless otherwise authorized by the Administrator, each foreign air carrier required to conduct screening
under this part shall use procedures, facilities, and equipment for detecting explosives, incendiaries, and deadly or dangerous weapons to inspect each person entering a sterile area at each preboarding screening checkpoint in the United States for which it is responsible, and to inspect all accessible property under that person's control.


§ 129.26 Use of X-ray system.

(a) No foreign air carrier may use an X-ray system in the United States to inspect carry-on and checked articles unless:

(1) For a system manufactured prior to April 25, 1974, it meets either the guidelines issued by the Food and Drug Administration (FDA), Department of Health, Education, and Welfare and published in the FEDERAL REGISTER (38 FR 21442, August 8, 1973); or the performance standards for cabinet X-ray systems designed primarily for the inspection of carry-on baggage issued by the FDA and published in 21 CFR 1020.40 (39 FR 12985, April 10, 1974);

(2) For a system manufactured after April 24, 1974, it meets the standards for cabinet X-ray systems designed primarily for the inspection of carry-on baggage issued by the FDA and published in 21 CFR 1020.40 (39 FR 12985, April 10, 1974);

(3) A program for initial and recurrent training of operators of the system has been established, which includes training in radiation safety, the efficient use of X-ray systems, and the identification of weapons and other dangerous articles;

(4) Procedures have been established to ensure that such operator of the system will be provided with an individual personnel dosimeter (such as a film badge or thermoluminescent dosimeter). Each dosimeter used will be evaluated at the end of each calendar month, and records of operator duty time and the results of dosimeter evaluations will be maintained by the foreign air carrier; and

(5) The system meets the imaging requirements set forth in an accepted Foreign Air Carrier Security Program using the step wedge specified in American Society for Testing and Materials Standard F 792±82.

(b) No foreign air carrier may use an X-ray system as specified in paragraph (a) of this section—

(1) Unless within the preceding 12 calendar months a radiation survey has been conducted which shows that the system meets the applicable performance standards in 21 CFR 1020.40 or guidelines published by the Food and Drug Administration in the FEDERAL REGISTER of August 8, 1973 (38 FR 21442);

(2) After the system is initially installed or after it has been moved from one location to another, unless a radiation survey is conducted which shows that the system meets the applicable performance standards in 21 CFR 1020.40 or guidelines published by the Food and Drug Administration in the FEDERAL REGISTER on August 8, 1973 (38 FR 21442); except that a radiation survey is not required for an X-ray system that is moved to another location, if the foreign air carrier shows that the system is so designed that it can be moved without altering its performance:

(3) That is not in full compliance with any defect notice or modification order issued for that system by the Food and Drug Administration, Department of Health, Education, and Welfare, unless that Administration has advised the FAA that the defect or failure to comply is not such as to create a significant risk or injury, including genetic injury, to any person; and

(4) Unless a sign is posted in a conspicuous place at the screening station and on the X-ray system which notifies passengers that carry-on and checked articles are being inspected by an X-ray system and advises them to remove all X-ray, scientific, and high-speed film from their carry-on and checked articles before inspection. This sign shall also advise passengers that they may request an inspection to be made of their photographic equipment and film packages without exposure to an X-ray system. If the X-ray system exposes any carry-on or checked articles to more than 1 milliroentgen during the inspection, the foreign air carrier...
§ 129.27 Prohibition against carriage of weapons.

(a) No person may, while on board an aircraft being operated by a foreign air carrier in the United States, carry on or about his person a deadly or dangerous weapon, either concealed or unconcealed. This paragraph does not apply to—

(1) Officials or employees of the state of registry of the aircraft who are authorized by that state to carry arms; and

(2) Crewmembers and other persons authorized by the foreign air carrier to carry arms.

(b) No foreign air carrier may knowingly permit any passenger to carry, nor may any passenger carry, while aboard an aircraft being operated in the United States by that carrier, in checked baggage, a deadly or dangerous weapon, unless:

(1) The passenger has notified the foreign air carrier before checking the baggage that the weapon is in the baggage; and

(2) The baggage is carried in an area inaccessible to passengers.

§ 129.29 Prohibition against smoking.

No person may smoke and no operator shall permit smoking in the passenger cabin or lavatory during any scheduled airline flight segment in air transportation or intrastate air transportation which is:

(a) Between any two points within Puerto Rico, the United States Virgin Islands, the District of Columbia, or any State of the United States (other than Alaska or Hawaii) or between any two points in any one of the above-mentioned jurisdictions (other than Alaska or Hawaii);

(b) Within the State of Alaska or within the State of Hawaii; or

(c) Scheduled in the current Worldwide or North American Edition of the Official Airline Guide for 6 hours or less in duration and between any point listed in paragraph (a) of this section and any point in Alaska or Hawaii, or between any point in Alaska and any point in Hawaii.

§ 129.31 Airplant security.

Each foreign air carrier required to adopt and use a security program under § 129.25(b) shall—

(a) Restrict the distribution, disclosure, and availability of sensitive security information, as defined in part 191 of this chapter, to persons with a need-to-know; and

(b) Refer requests for sensitive security information by other persons to the Assistant Administrator for Civil Aviation Security.
APPENDIX A TO PART 129—APPLICATION FOR OPERATIONS SPECIFICATIONS BY FOREIGN AIR CARRIERS

(a) General. Each application must be executed by an authorized officer or employee of the applicant having knowledge of the matter set forth therein, and must have attached thereto two copies of the appropriate written authority issued to that officer or employee by the applicant. Negotiations for permission to use airports under U.S. military jurisdiction are effected through the respective embassy of the foreign government and the United States Department of State.

(b) Format of application. The following outline must be followed in completing the information to be submitted in the application.

APPLICATION FOR FOREIGN AIR CARRIER OPERATIONS SPECIFICATIONS

OUTLINE

In accordance with the Federal Aviation Act of 1958 (49 U.S.C. 1372) and part 129 of the Federal Air Regulations, application is hereby made for the issuance of Foreign Operations Specifications.

Give exact name and full post office address of applicant.

Give the name, title, and post office address (within the United States if possible) of the official or employee to whom correspondence in regard to the application is to be addressed.

Unless otherwise specified, the applicant must submit the following information only with respect to those parts of his proposed operations that will be conducted within the United States.

SECTION I. Operations. State whether the operation proposed is day or night, visual flight rules, instrument flight rules, or a particular combination thereof.

SEC. II. Operational plans. State the route by which entry will be made into the United States, and the route to be flown therein.

SEC. III. A. Route. Submit a map suitable for aerial navigation upon which is indicated the exact geographical track of the proposed route from the last point of foreign departure to the United States terminal, showing the regular terminal, and alternate airports, and radio navigational facilities. This material will be indicated in a manner that will facilitate identification. The applicant may use any method that will clearly distinguish the information, such as different colors, different types of lines, etc. For example, if different colors are used, the identification will be accomplished as follows:

1. Regular route: Black.
2. Regular terminal airport: Green circle.
3. Alternate airports: Orange circle.
4. The location of radio navigational facilities which will be used in connection with the proposed operation, indicating the type of facility to be used, such as radio range ADF, VOR, etc.

B. Airports. Submit the following information with regard to each regular terminal and alternate to be used in the conduct of the proposed operation:

1. Name of airport or landing area.
2. Location (direction distance to and name of nearest city or town).

SEC. IV. Radio facilities: Communications. List all ground radio communication facilities to be used by the applicant in the conduct of the proposed operations within the United States and over that portion of the route between the last point of foreign departure and the United States.

SEC. V. Aircraft. Submit the following information in regard to each type and model aircraft to be used.

A. Aircraft.

1. Manufacturer and model number.
2. State of origin.
3. Single-engine or multiengine. If multiengine, indicate number of engines.
4. What is the maximum takeoff and landing weight to be used for each type of aircraft?
5. Registration markings of each U.S.-registered aircraft.

B. Aircraft Radio. List aircraft radio equipment necessary for instrument operation within the United States.

C. Licensing. State name of country by whom aircraft are certificated.

SEC. VI. Airmen. List the following information with respect to airmen to be employed in the proposed operation within the United States.

A. State the type and class of certificate held by each flight crewmember.

B. State whether or not pilot personnel have received training in the use of navigational facilities necessary for en route operation and instrument landings along or adjacent the route to be flown within the United States.

C. State whether or not personnel are familiar with those parts of the Federal Air Regulations pertaining to the conduct of foreign air carrier operations within the United States.

D. State whether pilot personnel are able to speak and understand the English language to a degree necessary to enable them to properly communicate with Airport Traffic Control Towers and Airway Radio Communication Stations using radiotelephone communications.

SEC. VII. Dispatchers.

A. Describe briefly the dispatch organization which you propose to set up for air carrier operations within the United States.

B. State whether or not the dispatching personnel are familiar with the rules and regulations prescribed by the Federal Air Regulations governing air carrier operations.
C. Are dispatching personnel able to read and write the English language to a degree necessary to properly dispatch flights within the United States?
D. Are dispatching personnel certificated by the country of origin?

SEC. VIII. Additional Data.
A. Furnish such additional information and substantiating data as may serve to expedite the issuance of the operations specifications.
B. Each application shall be concluded with a statement as follows:
I certify that the above statements are true.
Signed this ______ day of ______
By __________________________ (Name of Applicant)
(No. of person duly authorized to execute this application on behalf of the applicant.)

PART 133—ROTORCRAFT EXTERNAL-LOAD OPERATIONS

Subpart A—Applicability

§ 133.1 Applicability.

This part prescribes—
(a) Airworthiness certification rules for rotorcraft used in; and
(b) Operating and certification rules governing the conduct of rotorcraft external-load operations in the United States by any person.
(c) The certification rules of this part do not apply to—
(1) Rotorcraft manufacturers when developing external-load attaching means;
(2) Rotorcraft manufacturers demonstrating compliance of equipment utilized under this part or appropriate portions of part 27 or 29 of this chapter;
(3) Operations conducted by a person demonstrating compliance for the issuance of a certificate or authorization under this part;
(4) Training flights conducted in preparation for the demonstration of compliance with this part; or
(5) A Federal, State, or local government conducting operations with public aircraft.

(d) For the purpose of this part, a person other than a crewmember or a person who is essential and directly connected with the external-load operation may be carried only in approved Class D rotorcraft-load combinations.

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§ 133.19 Rotorcraft.
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§ 133.23 Knowledge and skill.
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§ 133.27 Availability, transfer, and surrender of certificate.

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§ 133.41 Flight characteristics requirements.
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Authority: 49 U.S.C. 106(g), 40113, 44701-44702.

Source: Docket No. 1529, 29 FR 603, Jan. 24, 1964, unless otherwise noted.
§ 133.21 Personnel.

(a) The applicant must hold, or have available the services of at least one person who holds, a current commercial or airline transport pilot certificate, with a rating appropriate for the rotorcraft prescribed in §133.19, issued by the Administrator.

(b) The applicant must designate one pilot, who may be the applicant, as chief pilot for rotorcraft external-load operations. The applicant also may designate qualified pilots as assistant chief pilots to perform the functions of the chief pilot when the chief pilot is not readily available. The chief pilot and assistant chief pilots must be acceptable to the Administrator and each must hold a current Commercial or Airline Transport Pilot Certificate,
§ 133.23 Knowledge and skill.

(a) Except as provided in paragraph (d) of this section, the applicant, or the chief pilot designated in accordance with §133.21(b), must demonstrate to the Administrator satisfactory knowledge and skill regarding rotorcraft external-load operations as set forth in paragraphs (b) and (c) of this section.

(b) The test of knowledge (which may be oral or written, at the option of the applicant) covers the following subjects:

(1) Steps to be taken before starting operations, including a survey of the flight area.
(2) Proper method of loading, rigging, or attaching the external load.
(3) Performance capabilities, under approved operating procedures and limitations, of the rotorcraft to be used.
(4) Proper instructions of flight crew and ground workers.
(5) Appropriate rotorcraft-load combination flight manual.

(c) The test of skill requires appropriate maneuvers for each class requested. The appropriate maneuvers for each load class must be demonstrated in the rotorcraft prescribed in §133.19.

(1) Takeoffs and landings.
(2) Demonstration of directional control while hovering.
(3) Acceleration from a hover.
(4) Flight at operational airspeeds.
(5) Approaches to landing or working area.
(6) Maneuvering the external load into the release position.
(7) Demonstration of winch operation, if a winch is installed to hoist the external load.

(d) Compliance with paragraphs (b) and (c) of this section need not be shown if the Administrator finds, on the basis of the applicant’s (or his designated chief pilot’s) previous experience and safety record in rotorcraft external-load operations, that his knowledge and skill are adequate.

§ 133.25 Amendment of certificate.

(a) The holder of a Rotorcraft External-Load Certificate may apply to the FAA Flight Standards District Office having jurisdiction over the area in which the applicant’s home base of operation is located, or to the Flight Standards District Office nearest the area in which operations are to be conducted, for an amendment of the applicant’s certificate, to add or delete a rotorcraft-load combination authorization, by executing the appropriate portion of the form used in applying for a Rotorcraft External-Load Operator Certificate. If the applicant for the amendment shows compliance with §§133.19, and 133.49, the Flight Standards District Office issues an amended Rotorcraft External-Load Operator Certificate to the applicant with authorization to operate with those classes of rotorcraft-load combinations for which the applicant complies with the applicable provisions of subpart D of this part.

(b) The holder of a rotorcraft external-load certificate may apply for an amendment to add or delete a rotorcraft authorization by submitting to the certificate-holding FAA Flight Standards District Office a new list of rotorcraft, by registration number, with the classes of rotorcraft-load combinations for which authorization is requested.

§ 133.27 Availability, transfer, and surrender of certificate.

(a) Each holder of a rotorcraft external-load operator certificate shall keep
§ 133.33 Operating rules.

(a) No person may conduct a rotorcraft external-load operation without, or contrary to, the Rotorcraft-Load Combination Flight Manual prescribed in §133.47.

(b) No person may conduct a rotorcraft external-load operation unless—

(1) The rotorcraft complies with §133.19; and

(2) The rotorcraft and rotorcraft-load combination is authorized under the Rotorcraft External-Load Operator Certificate.

(c) Before a person may operate a rotorcraft with an external-load configuration that differs substantially from any that person has previously carried with that type of rotorcraft (whether or not the rotorcraft-load combination is of the same class), that person must conduct, in a manner that will not endanger persons or property on the surface, such of the following flight-operational checks as the Administrator determines are appropriate to the rotorcraft-load combination:

(1) A determination that the weight of the rotorcraft-load combination and the location of its center of gravity are within approved limits, that the external load is securely fastened, and that the external load does not interfere with devices provided for its emergency release.

(2) Make an initial liftoff and verify that controllability is satisfactory.

(3) While hovering, verify that directional control is adequate.

(4) Accelerate into forward flight to verify that no attitude (whether of the rotorcraft or of the external load) is encountered in which the rotorcraft is uncontrollable or which is otherwise hazardous.

(5) In forward flight, check for hazardous oscillations of the external load, but if the external load is not visible to the pilot, other crewmembers or ground personnel may make this check and signal the pilot.

(6) Increase the forward airspeed and determine an operational airspeed at which no hazardous oscillation or hazardous aerodynamic turbulence is encountered.

(d) Notwithstanding the provisions of part 91 of this chapter, the holder of a Rotorcraft External-Load Operator Certificate may conduct (in rotorcraft type certificated under and meeting the requirements of part 27 or 29 of this chapter, including the external-load attaching means) rotorcraft external-load operations over congested areas if
§ 133.35 Carriage of persons.

(a) No certificate holder may allow a person to be carried during rotorcraft external-load operations unless that person—

(1) Is a flight crewmember;
(2) Is a flight crewmember trainee;
(3) Performs an essential function in connection with the external-load operation; or
(4) Is necessary to accomplish the work activity directly associated with that operation.

(b) The pilot in command shall ensure that all persons are briefed before takeoff on all pertinent procedures to be followed (including normal, abnormal, and emergency procedures) and equipment to be used during the external-load operation.


§ 133.37 Crewmember training, currency, and testing requirements.

(a) No certificate holder may use, nor may any person serve, as a pilot in operations conducted under this part unless that person—

(1) Has successfully demonstrated, to the Administrator knowledge and skill with respect to the rotorcraft-load combination in accordance with §133.23 (in the case of a pilot other than the chief pilot or an assistant chief pilot who has been designated in accordance with §133.21(b), this demonstration may be made to the chief pilot or assistant chief pilot); and

(2) Has in his or her personal possession a letter of competency or an appropriate logbook entry indicating compliance with paragraph (a)(1) of this section.

(b) No certificate holder may use, nor may any person serve as, a crewmember or other operations personnel in Class D operations conducted under this part unless, within the preceding 12 calendar months, that person has successfully completed either an approved initial or a recurrent training program.

(c) Notwithstanding the provisions of paragraph (b) of this section, a person who has performed a rotorcraft external-load operation of the same class and in an aircraft of the same type within the past 12 calendar months need not undergo recurrent training.

[Doc. No. 24550, 51 FR 40708, Nov. 7, 1986]

§ 133.39 Inspection authority.

Each person conducting an operation under this part shall allow the Administrator to make any inspections or tests that he considers necessary to determine compliance with the Federal
§ 133.41 Flight characteristics requirements.

(a) The applicant must demonstrate to the Administrator, by performing the operational flight checks prescribed in paragraphs (b), (c), and (d) of this section, as applicable, that the rotorcraft-load combination has satisfactory flight characteristics, unless these operational flight checks have been demonstrated previously and the rotorcraft-load combination flight characteristics were satisfactory. For the purposes of this demonstration, the external-load weight (including the external-load attaching means) is the maximum weight for which authorization is requested.

(b) Class A rotorcraft-load combinations: The operational flight check must consist of at least the following maneuvers:

(1) Take off and landing.
(2) Demonstration of adequate directional control while hovering.
(3) Acceleration from a hover.
(4) Horizontal flight at airspeeds up to the maximum airspeed for which authorization is requested.

(c) Class B and D rotorcraft-load combinations: The operational flight check must consist of at least the following maneuvers:

(1) Pickup of the external load.
(2) Demonstration of adequate directional control while hovering.
(3) Acceleration from a hover.
(4) Horizontal flight at airspeeds up to the maximum airspeed for which authorization is requested.
(5) Demonstrating appropriate lifting device operation.
(6) Maneuvering of the external load into release position and its release, under probable flight operation conditions, by means of each of the quick-release controls installed on the rotorcraft.

(d) Class C rotorcraft-load combinations: For Class C rotorcraft-load combinations used in wire-stringing, cable-laying, or similar operations, the operational flight check must consist of the maneuvers, as applicable, prescribed in paragraph (c) of this section.

§ 133.43 Structures and design.

(a) External-load attaching means. Each external-load attaching means must have been approved under—

(1) Part 8 of the Civil Air Regulations on or before January 17, 1964;
(2) Part 133, before February 1, 1977;
(3) Part 27 or 29 of this chapter, as applicable, irrespective of the date of approval; or
(4) Section 21.25 of this chapter.

(b) Quick release devices. Each quick release device must have been approved under—

(1) Part 27 or 29 of this chapter, as applicable;
(2) Part 133, before February 1, 1977; or
(3) Section 21.25 of this chapter, except the device must comply with §§ 27.865(b) and 29.865(b), as applicable, of this chapter.

(c) Weight and center of gravity—

(1) Weight. The total weight of the rotorcraft-load combination must not exceed the total weight approved for the rotorcraft during its type certification.
(2) Center of gravity. The location of the center of gravity must, for all loading conditions, be within the range established for the rotorcraft during its type certification. For Class C rotorcraft-load combinations, the magnitude and direction of the loading force must be established at those values for which the effective location of the center of gravity remains within its established range.

§ 133.45 Operating limitations.

In addition to the operating limitations set forth in the approved Rotorcraft Flight Manual, and to any other limitations the Administrator may
§ 133.47  Rotorcraft-load combination flight manual.

The applicant must prepare a Rotorcraft-Load Combination Flight Manual and submit it for approval by the Administrator. The manual must be prepared in accordance with the rotorcraft flight manual provisions of subpart G of part 27 or 29 of this chapter, which ever is applicable. The limiting height-speed envelope data need not be listed as operating limitations. The manual must set forth—

(a) Operating limitations, procedures (normal and emergency), performance, and other information established under this subpart;

(b) The class of rotorcraft-load combinations for which the airworthiness of the rotorcraft has been demonstrated in accordance with §§ 133.41 and 133.43; and

(c) In the information section of the Rotorcraft-Load Combination Flight Manual—

(1) Information on any peculiarities discovered when operating particular rotorcraft-load combinations;

(2) Precautionary advice regarding static electricity discharges for Class B, Class C, and Class D rotorcraft-load combinations; and

(3) Any other information essential for safe operation with external loads.

PART 135—OPERATING REQUIREMENTS: COMMUTER AND ON-DEMAND OPERATIONS

Special Federal Aviation Regulations
SFAR No. 36 [NOTE]
SFAR No. 38-2 [NOTE]
SFAR No. 50-2 [NOTE]
SFAR No. 52
SFAR No. 58 [NOTE]
SFAR No. 71 [NOTE]
SFAR No. 78 [NOTE]

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APPENDIX A TO PART 135—ADDITIONAL AIRWORTHINESS STANDARDS FOR 10 OR MORE PASSENGER AIRPLANES

APPENDIX B TO PART 135—AIRPLANE FLIGHT RECORDER SPECIFICATIONS

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APPENDIX D TO PART 135—AIRPLANE FLIGHT RECORDER SPECIFICATIONS

APPENDIX E TO PART 135—HELICOPTER FLIGHT RECORDER SPECIFICATIONS

APPENDIX F TO PART 135—AIRPLANE FLIGHT RECORDER SPECIFICATIONS

AUTHORITY: 49 U.S.C. 106(g), 44701-44703, 44705-44717, 44719, 44722.


SPECIAL FEDERAL AVIATION REGULATIONS

SFAR No. 36

EDITORIAL NOTE: For the text of SFAR No. 36, see part 121 of this chapter.

SFAR No. 38-2

EDITORIAL NOTE: For the text of SFAR No. 38-2, see part 121 of this chapter.
SFAR No. 52

SFAR No. 50-2

EDITORIAL NOTE: For the text of SFAR No. 50-2, see part 91 of this chapter.

SFAR No. 52—EXTENSION OF COMPLIANCE DATE OF SEAT CUSHION FLAMMABILITY REGULATION FOR LARGE AIRPLANES OPERATED UNDER PART 135 IN OTHER THAN COMMUTER AIR CARRIER OPERATIONS

Contrary provisions of §§121.312 and 135.169 of this chapter notwithstanding, for airplanes type certificated after January 1, 1958, after February 24, 1988, seat cushions in any compartment occupied by crew or passengers (except those on flight crewmember seats) in large airplanes operated under part 135 of this chapter, except large airplanes used in commuter air carrier operations, must comply with the requirements pertaining to fire protection of seat cushions in §25.853(c), effective November 26, 1984, and appendix F to part 25 of this chapter, effective November 26, 1984, unless an alternative compliance plan has been approved by the Administrator.

For airplanes type certificated after January 1, 1958, after November 26, 1987, seat cushions in any compartment occupied by crew or passengers (except those on flight crewmember seats) in large airplanes operated under part 135 of this chapter, except large airplanes used in commuter air carrier operations, must comply with the requirements pertaining to fire protection of seat cushions in §25.853(c), effective November 26, 1984, and appendix F to part 25 of this chapter, effective November 26, 1984.

This Special Federal Aviation Regulation terminates on December 1, 1988.


SFAR No. 58

EDITORIAL NOTE: For the text of SFAR No. 58, see part 121 of this chapter.

SFAR No. 71

EDITORIAL NOTE: For the text of SFAR No. 71, see part 91 of this chapter.

SFAR No. 78

EDITORIAL NOTE: For the text of SFAR No. 78, see part 91 of this chapter.

Subpart A—General

§135.1 Applicability.

(a) This part prescribes rules governing—

(1) The commuter or on-demand operations of each person who holds or is required to hold an Air Carrier Certificate or Operating Certificate under part 119 of this chapter.

(2) Each person employed or used by a certificate holder conducting operations under this part including the maintenance, preventative maintenance and alteration of an aircraft.

(3) The transportation of mail by aircraft conducted under a postal service contract awarded under 39 U.S.C. 5402c.

(4) Each person who applies for provisional approval of an Advanced Qualification Program curriculum, curriculum segment, or portion of a curriculum segment under SFAR No. 58 of 14 CFR part 121 and each person employed or used by an air carrier or commercial operator under this part to perform training, qualification, or evaluation functions under an Advanced Qualification Program under SFAR No. 58 of 14 CFR part 121.

(5) Nonstop sightseeing flights for compensation or hire that begin and end at the same airport, and are conducted within a 25 statute mile radius of that airport; however, except for operations subject to SFAR 50-2, these operations, when conducted for compensation or hire, must comply only with §§135.249, 135.251, 135.253, 135.255, and 135.353.

(6) Each person who is on board an aircraft being operated under this part.

(7) Each person who is an applicant for an Air Carrier Certificate or an Operating Certificate under 119 of this chapter, when conducting proving tests.

(b) [Reserved]

(c) For the purpose of §§135.249, 135.251, 135.253, 135.255, and 135.353, operator means any person or entity conducting non-stop sightseeing flights for compensation or hire in an airplane or rotorcraft that begin and end at the same airport and are conducted within a 25 statute mile radius of that airport.

(d) Notwithstanding the provisions of this part and appendices I and J to part 121 of this chapter, an operator who does not hold a part 121 or part 135 certificate is permitted to use a person who is otherwise authorized to perform aircraft maintenance or preventive
maintenance duties and who is not subject to FAA-approved anti-drug and alcohol misuse prevention programs to perform—

(1) Aircraft maintenance or preventive maintenance on the operator's aircraft if the operator would otherwise be required to transport the aircraft more than 50 nautical miles further than the repair point closest to operator's principal place of operation to obtain these services; or

(2) Emergency repairs on the operator's aircraft if the aircraft cannot be safely operated to a location where an employee subject to FAA-approved programs can perform the repairs.

§ 135.2 Compliance schedule for operators that transition to part 121 of this chapter; certain new entrant operators.

(a) Applicability. This section applies to the following:

(1) Each certificate holder that was issued an air carrier or operating certificate and operations specifications under the requirements of part 135 of this chapter or under SFAR No. 38±2 of 14 CFR part 121 before January 19, 1996, and that conducts scheduled passenger-carrying operations with:

(i) Nontransport category turbo-propseller powered airplanes type certificated after December 31, 1964, that have a passenger seat configuration of 10±19 seats;

(ii) Transport category turbo-propseller powered airplanes that have a passenger seat configuration of 20±30 seats; or

(iii) Turbojet engine powered airplanes having a passenger seat configuration of 1±30 seats.

(2) Each person who, after January 19, 1996, applies for or obtains an initial air carrier or operating certificate and operations specifications to conduct scheduled passenger-carrying operations in the kinds of airplanes described in paragraphs (a)(1)(i), (a)(1)(ii), or (a)(1)(iii) of this section.

(b) Obtaining operations specifications. A certificate holder described in paragraph (a)(1) of this section may not, after March 20, 1997, operate an airplane described in paragraphs (a)(1)(i), (a)(1)(ii), or (a)(1)(iii) of this section in scheduled passenger-carrying operations, unless it obtains operations specifications to conduct its scheduled operations under part 121 of this chapter on or before March 20, 1997.

(c) Regular or accelerated compliance. Except as provided in paragraphs (d) and (e) of this section, each certificate holder described in paragraph (a)(1) of this section shall comply with each applicable requirement of part 121 of this chapter on and after March 20, 1997 or on and after the date on which the certificate holder is issued operations specifications to conduct its scheduled operations under part 121 of this chapter, whichever occurs first. Except as provided in paragraphs (d) and (e) of this section, each person described in paragraph (a)(2) of this section shall comply with each applicable requirement of part 121 of this chapter on and after the date on which that person is issued a certificate and operations specifications under part 121 of this chapter.

(d) Delayed compliance dates. Unless paragraph (e) of this section specifies an earlier compliance date, no certificate holder that is covered by paragraph (a) of this section may operate an airplane in 14 CFR part 121 operations on or after a date listed in this paragraph unless that airplane meets the applicable requirement of this paragraph:

(1) Nontransport category turbo-propseller powered airplanes type certificated after December 31, 1964, that have a passenger seat configuration of 10±19 seats.

(A) Section 121.289, Landing gear aural warning.

(B) Section 121.308, Lavatory fire protection.

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§ 135.3 Rules applicable to operations subject to this part.

(a) Each person operating an aircraft in operations under this part shall—
(1) While operating inside the United States, comply with the applicable rules of this chapter; and

(B) Section 121.311(f), Safety belts and shoulder harnesses.
(ii) Manufactured on or after December 20, 1997: Section 121.317(a), Fasten seat belt light.
(iii) Manufactured on or after December 20, 1999: Section 121.293, Takeoff warning system.
(iv) Manufactured on or after March 12, 1999: Section 121.310(b)(1), Interior emergency exit locating sign.
(2) For transport category turbopropeller powered airplanes that have a passenger seat configuration of 20-30 seats manufactured on or after March 20, 1997: Section 121.305(j), Third attitude indicator.

(f) New type certification requirements. No person may operate an airplane for which the application for a type certificate was filed after March 29, 1995, in 14 CFR part 121 operations unless that airplane is type certificated under part 25 of this chapter.

(g) Transition plan. Before March 19, 1996 each certificate holder described in paragraph (a)(1) of this section must submit to the FAA a transition plan (containing a calendar of events) for moving from conducting its scheduled operations under the commuter requirements of part 135 of this chapter to the requirements for domestic or flag operations under part 121 of this chapter. Each transition plan must contain details on the following:

(1) Plans for obtaining new operations specifications authorizing domestic or flag operations;
(2) Plans for being in compliance with the applicable requirements of part 121 of this chapter on or before March 20, 1997; and
(3) Plans for complying with the compliance date schedules contained in paragraphs (d) and (e) of this section.

(2) While operating outside the United States, comply with Annex 2, Rules of the Air, to the Convention on International Civil Aviation or the regulations of any foreign country, whichever applies, and with any rules of parts 61 and 91 of this chapter and this part that are more restrictive than that Annex or those regulations and that can be complied with without violating that Annex or those regulations. Annex 2 is incorporated by reference in §91.703(b) of this chapter.

(b) After March 19, 1997, each certificate holder that conducts commuter operations under this part with airplanes in which two pilots are required by the type certification rules of this chapter shall comply with subparts N and O of part 121 of this chapter instead of the requirements of subparts E, G, and H of this part. Each affected certificate holder must submit to the Administrator and obtain approval of a transition plan (containing a calendar of events) for moving from its present part 135 training, checking, testing, and qualification requirements to the requirements of part 121 of this chapter. Each transition plan must be submitted by March 19, 1996, and must contain details on how the certificate holder plans to be in compliance with subparts N and O of part 121 on or before March 19, 1997.

(c) If authorized by the Administrator upon application, each certificate holder that conducts operations under this part to which paragraph (b) of this section does not apply, may comply with the applicable sections of subparts N and O of part 121 instead of the requirements of subparts E, G, and H of this part, except that those authorized certificate holders may choose to comply with the operating experience requirements of §135.244, instead of the requirements of §121.434 of this chapter.


§135.21 Manual requirements.

(a) Each certificate holder, other than one who uses only one pilot in the certificate holder’s operations, shall prepare and keep current a manual setting forth the certificate holder’s procedures and policies acceptable to the Administrator. This manual must be used by the certificate holder’s flight, ground, and maintenance personnel in conducting its operations. However, this part without an appropriate certificate and operations specifications required by part 119 of this chapter.


§135.12 Previously trained crewmembers.

A certificate holder may use a crewmember who received the certificate holder’s training in accordance with subparts E, G, and H of this part before March 19, 1997 without complying with initial training and qualification requirements of subparts N and O of part 121 of this chapter. The crewmember must comply with the applicable recurrent training requirements of part 121 of this chapter.

[Doc. No. 27993, 60 FR 65950, Dec. 20, 1995]

§135.19 Emergency operations.

(a) In an emergency involving the safety of persons or property, the certificate holder may deviate from the rules of this part relating to aircraft and equipment and weather minimums to the extent required to meet that emergency.

(b) In an emergency involving the safety of persons or property, the pilot in command may deviate from the rules of this part to the extent required to meet that emergency.

(c) Each person who, under the authority of this section, deviates from a rule of this part shall, within 10 days, excluding Saturdays, Sundays, and Federal holidays, after the deviation, send to the FAA Flight Standards District Office charged with the overall inspection of the certificate holder a complete report of the aircraft operation involved, including a description of the deviation and reasons for it.

§ 135.23 Manual contents.

Each manual shall have the date of the last revision on each revised page. The manual must include—

(a) The name of each management person required under §119.69(a) of this chapter who is authorized to act for the certificate holder, the person’s assigned area of responsibility, the person’s duties, responsibilities, and authority, and the name and title of each person authorized to exercise operational control under §135.77;

(b) Procedures for ensuring compliance with aircraft weight and balance limitations and, for multiengine aircraft, for determining compliance with §135.185;

(c) Copies of the certificate holder’s operations specifications or appropriate extracted information, including area of operations authorized, category and class of aircraft authorized, crew complements, and types of operations authorized;

(d) Procedures for complying with accident notification requirements;

(e) Procedures for ensuring that the pilot in command knows that required airworthiness inspections have been made and that the aircraft has been approved for return to service in compliance with applicable maintenance requirements;

(f) Procedures for reporting and recording mechanical irregularities that come to the attention of the pilot in command before, during, and after completion of a flight;

(g) Procedures to be followed by the pilot in command for determining that mechanical irregularities or defects reported for previous flights have been corrected or that correction has been deferred;

(h) Procedures to be followed by the pilot in command to obtain maintenance, preventive maintenance, and servicing of the aircraft at a place where previous arrangements have not been made by the operator, when the
pilot is authorized to so act for the operator;

(i) Procedures under §135.179 for the release for, or continuation of, flight if any item of equipment required for the particular type of operation becomes inoperative or unserviceable en route;

(j) Procedures for refueling aircraft, eliminating fuel contamination, protecting from fire (including electrostatic protection), and supervising and protecting passengers during refueling;

(k) Procedures to be followed by the pilot in command in the briefing under §135.117;

(l) Flight locating procedures, when applicable;

(m) Procedures for ensuring compliance with emergency procedures, including a list of the functions assigned each category of required crewmembers in connection with an emergency and emergency evacuation duties under §135.123;

(n) En route qualification procedures for pilots, when applicable;

(o) The approved aircraft inspection program, when applicable;

(p) Procedures and instructions to enable personnel to recognize hazardous materials, as defined in title 49 CFR, and if these materials are to be carried, stored, or handled, procedures and instructions for—

(1) Accepting shipment of hazardous material required by title 49 CFR, to assure proper packaging, marking, labeling, shipping documents, compatibility of articles, and instructions on their loading, storage, and handling;

(2) Notification and reporting hazardous material incidents as required by title 49 CFR; and

(3) Notification of the pilot in command when there are hazardous materials aboard, as required by title 49 CFR;

(q) Procedures for the evacuation of persons who may need the assistance of another person to move expeditiously to an exit if an emergency occurs; and

(r) Other procedures and policy instructions regarding the certificate holder's operations, that are issued by the certificate holder.

§135.25 Aircraft requirements.

(a) Except as provided in paragraph (d) of this section, no certificate holder may operate an aircraft under this part unless that aircraft—

(1) Is registered as a civil aircraft of the United States and carries an appropriate and current airworthiness certificate issued under this chapter; and

(2) Is in an airworthy condition and meets the applicable airworthiness requirements of this chapter, including those relating to identification and equipment.

(b) Each certificate holder must have the exclusive use of at least one aircraft that meets the requirements for at least one kind of operation authorized in the certificate holder's operations specifications. In addition, for each kind of operation for which the certificate holder does not have the exclusive use of an aircraft, the certificate holder must have available for use under a written agreement (including arrangements for performing required maintenance) at least one aircraft that meets the requirements for that kind of operation. However, this paragraph does not prohibit the operator from using or authorizing the use of the aircraft for other than operations under this part and does not require the certificate holder to have exclusive use of all aircraft that the certificate holder uses.

(c) For the purposes of paragraph (b) of this section, a person has exclusive use of an aircraft if that person has the sole possession, control, and use of it for flight, as owner, or has a written agreement (including arrangements for performing required maintenance), in effect when the aircraft is operated, giving the person that possession, control, and use for at least 6 consecutive months.

(d) A certificate holder may operate in common carriage, and for the carriage of mail, a civil aircraft which is leased or chartered to it without crew and is registered in a country which is a party to the Convention on International Civil Aviation if—

(1) The aircraft carries an appropriate airworthiness certificate issued by the country of registration and meets the registration and identification requirements of that country;
§ 135.41 Carriage of narcotic drugs, marihuana, and depressant or stimulant drugs or substances.

If the holder of a certificate operating under this part allows any aircraft owned or leased by that holder to be engaged in any operation that the certificate holder knows to be in violation of §91.19(a) of this chapter, that operation is a basis for suspending or revoking the certificate.

[Doc. No. 28154, 60 FR 6999, Dec. 20, 1995]

§ 135.43 Crewmember certificates: International operations.

(a) This section describes the certificates that were issued to United States citizens who were employed by air carriers at the time of issuance as flight crewmembers on United States registered aircraft engaged in international air commerce. The purpose of the certificate is to facilitate the entry and clearance of those crewmembers into ICAO contracting states. They were issued under Annex 9, as amended, to the Convention on International Civil Aviation.

(b) The holder of a certificate issued under this section, or the air carrier by whom the holder is employed, shall surrender the certificate for cancellation at the nearest FAA Flight Standards District Office at the termination of the holder's employment with that air carrier.

[Doc. No. 28154, 61 FR 30425, June 14, 1996]
with the flight time limitations of this part.

(viii) The pilot’s check pilot authorization, if any.

(ix) Any action taken concerning the pilot’s release from employment for physical or professional disqualification.

(x) The date of the completion of the initial phase and each recurrent phase of the training required by this part; and

(5) An individual record for each flight attendant who is required under this part, maintained in sufficient detail to determine compliance with the applicable portions of §135.273 of this part.

(b) Each certificate holder must keep each record required by paragraph (a)(3) of this section for at least 6 months, and must keep each record required by paragraphs (a)(4) and (a)(5) of this section for at least 12 months.

(c) For multiengine aircraft, each certificate holder is responsible for the preparation and accuracy of a load manifest in duplicate containing information concerning the loading of the aircraft. The manifest must be prepared before each takeoff and must include:

(1) The number of passengers;
(2) The total weight of the loaded aircraft;
(3) The maximum allowable takeoff weight for that flight;
(4) The center of gravity limits;
(5) The center of gravity of the loaded aircraft, except that the actual center of gravity need not be computed if the aircraft is loaded according to a loading schedule or other approved method that ensures that the center of gravity of the loaded aircraft is within approved limits. In those cases, an entry shall be made on the manifest indicating that the center of gravity is within limits according to a loading schedule or other approved method;
(6) The registration number of the aircraft or flight number;
(7) The origin and destination; and
(8) Identification of crew members and their crew position assignments.

(d) The pilot in command of an aircraft for which a load manifest must be prepared shall carry a copy of the completed load manifest in the aircraft to its destination. The certificate holder shall keep copies of completed load manifests for at least 30 days at its principal operations base, or at another location used by it and approved by the Administrator.


§135.65 Reporting mechanical irregularities.

(a) Each certificate holder shall provide an aircraft maintenance log to be carried on board each aircraft for recording or deferring mechanical irregularities and their correction.

(b) The pilot in command shall enter or have entered in the aircraft maintenance log each mechanical irregularity that comes to the pilot’s attention during flight time. Before each flight, the pilot in command shall, if the pilot does not already know, determine the status of each irregularity entered in the maintenance log at the end of the preceding flight.

(c) Each person who takes corrective action or defers action concerning a reported or observed failure or malfunction of an airframe, powerplant, propeller, rotor, or appliance, shall record the action taken in the aircraft maintenance log under the applicable maintenance requirements of this chapter.

(d) Each certificate holder shall establish a procedure for keeping copies...
§ 135.67 Reporting potentially hazardous meteorological conditions and irregularities of communications or navigation facilities.

Whenever a pilot encounters a potentially hazardous meteorological condition or an irregularity in a ground communications or navigational facility in flight, the knowledge of which the pilot considers essential to the safety of other flights, the pilot shall notify an appropriate ground radio station as soon as practicable.

§ 135.69 Restriction or suspension of operations: Continuation of flight in an emergency.

(a) During operations under this part, if a certificate holder or pilot in command knows of conditions, including airport and runway conditions, that are a hazard to safe operations, the certificate holder or pilot in command, as the case may be, shall restrict or suspend operations as necessary until those conditions are corrected.

(b) No pilot in command may allow a flight to continue toward any airport of intended landing under the conditions set forth in paragraph (a) of this section, unless, in the opinion of the pilot in command, the conditions that are a hazard to safe operations may reasonably be expected to be corrected by the estimated time of arrival or, unless there is no safer procedure. In the latter event, the continuation toward that airport is an emergency situation under §135.19.

§ 135.71 Airworthiness check.

The pilot in command may not begin a flight unless the pilot determines that the airworthiness inspections required by §§91.409 of this chapter, or §135.419, whichever is applicable, have been made.

§ 135.73 Inspections and tests.

Each certificate holder and each person employed by the certificate holder shall allow the Administrator, at any time or place, to make inspections or tests (including en route inspections) to determine the holder's compliance with the Federal Aviation Act of 1958, applicable regulations, and the certificate holder's operating certificate, and operations specifications.

§ 135.75 Inspectors credentials: Admission to pilots' compartment: Forward observer's seat.

(a) Whenever, in performing the duties of conducting an inspection, an FAA inspector presents an Aviation Safety Inspector credential, FAA Form 110A, to the pilot in command of an aircraft operated by the certificate holder, the inspector must be given free and uninterrupted access to the pilot compartment of that aircraft. However, this paragraph does not limit the emergency authority of the pilot in command to exclude any person from the pilot compartment in the interest of safety.

(b) A forward observer's seat on the flight deck, or forward passenger seat with headset or speaker must be provided for use by the Administrator while conducting en route inspections. The suitability of the location of the seat and the headset or speaker for use in conducting en route inspections is determined by the Administrator.

§ 135.77 Responsibility for operational control.

Each certificate holder is responsible for operational control and shall list, in the manual required by §135.21, the name and title of each person authorized by it to exercise operational control.

§ 135.79 Flight locating requirements.

(a) Each certificate holder must have procedures established for locating each flight, for which an FAA flight plan is not filed, that—

(1) Provide the certificate holder with at least the information required to be included in a VFR flight plan;

(2) Provide for timely notification of an FAA facility or search and rescue
facility, if an aircraft is overdue or missing; and

(3) Provide the certificate holder with the location, date, and estimated time for reestablishing radio or telephone communications, if the flight will operate in an area where communications cannot be maintained.

(b) Flight locating information shall be retained at the certificate holder’s principal place of business, or at other places designated by the certificate holder in the flight locating procedures, until the completion of the flight.

(c) Each certificate holder shall furnish the representative of the Administrator assigned to it with a copy of its flight locating procedures and any changes or additions, unless those procedures are included in a manual required under this part.

§ 135.81 Informing personnel of operational information and appropriate changes.

Each certificate holder shall inform each person in its employment of the operations specifications that apply to that person’s duties and responsibilities and shall make available to each pilot in the certificate holder’s employ the following materials in current form:

(a) Airman’s Information Manual (Alaska Supplement in Alaska and Pacific Chart Supplement in Pacific-Asia Regions) or a commercial publication that contains the same information.

(b) This part and part 91 of this chapter.

(c) Aircraft Equipment Manuals, and Aircraft Flight Manual or equivalent.

(d) For foreign operations, the International Flight Information Manual or a commercial publication that contains the same information concerning the pertinent operational and entry requirements of the foreign country or countries involved.

§ 135.83 Operating information required.

(a) The operator of an aircraft must provide the following materials, in current and appropriate form, accessible to the pilot at the pilot station, and the pilot shall use them:

(1) A cockpit checklist.

(2) For multiengine aircraft or for aircraft with retractable landing gear, an emergency cockpit checklist containing the procedures required by paragraph (c) of this section, as appropriate.

(3) Pertinent aeronautical charts.

(4) For IFR operations, each pertinent navigational en route, terminal area, and approach and letdown chart.

(5) For multiengine aircraft, one-engine-inoperative climb performance data and if the aircraft is approved for use in IFR or over-the-top operations, that data must be sufficient to enable the pilot to determine compliance with § 135.181(a)(2).

(b) Each cockpit checklist required by paragraph (a)(1) of this section must contain the following procedures:

(1) Before starting engines;

(2) Before takeoff;

(3) Cruise;

(4) Before landing;

(5) After landing;

(6) Stopping engines.

(c) Each emergency cockpit checklist required by paragraph (a)(2) of this section must contain the following procedures, as appropriate:

(1) Emergency operation of fuel, hydraulic, electrical, and mechanical systems.

(2) Emergency operation of instruments and controls.

(3) Engine inoperative procedures.

(4) Any other emergency procedures necessary for safety.

§ 135.85 Carriage of persons without compliance with the passenger-carrying provisions of this part.

The following persons may be carried aboard an aircraft without complying with the passenger-carrying requirements of this part:

(a) A crewmember or other employee of the certificate holder.

(b) A person necessary for the safe handling of animals on the aircraft.

(c) A person necessary for the safe handling of hazardous materials (as defined in subchapter C of title 49 CFR).

(d) A person performing duty as a security or honor guard accompanying a shipment made by or under the authority of the U.S. Government.

(e) A military courier or a military route supervisor carried by a military
__§ 135.87 Carriage of cargo including carry-on baggage.\

No person may carry cargo, including carry-on baggage, in or on any aircraft unless—

(a) It is carried in an approved cargo rack, bin, or compartment installed in or on the aircraft;
(b) It is secured by an approved means; or
(c) It is carried in accordance with each of the following:
   (1) For cargo, it is properly secured by a safety belt or other tie-down having enough strength to eliminate the possibility of shifting under all normally anticipated flight and ground conditions, or for carry-on baggage, it is restrained so as to prevent its movement during air turbulence.
   (2) It is packaged or covered to avoid possible injury to occupants.
   (3) It does not impose any load on seats or on the floor structure that exceeds the load limitation for those components.
   (4) It is not located in a position that obstructs the access to, or use of, any required emergency or regular exit, or the use of the aisle between the crew and the passenger compartment, or located in a position that obscures any passenger’s view of the “seat belt” sign, “no smoking” sign, or any required exit sign, unless an auxiliary sign or other approved means for proper notification of the passengers is provided.
   (5) It is not carried directly above seated occupants.
   (6) It is stowed in compliance with this section for takeoff and landing.
   (7) For cargo only operations, paragraph (c)(4) of this section does not apply if the cargo is loaded so that at least one emergency or regular exit is available to provide all occupants of the aircraft a means of unobstructed exit from the aircraft if an emergency occurs.

(d) Each passenger seat under which baggage is stowed shall be fitted with a means to prevent articles of baggage stowed under it from sliding under crash impacts severe enough to induce the ultimate inertia forces specified in the emergency landing condition regulations under which the aircraft was type certificated.

(e) When cargo is carried in cargo compartments that are designed to require the physical entry of a crew-member to extinguish any fire that may occur during flight, the cargo must be loaded so as to allow a crew-member to effectively reach all parts of the compartment with the contents of a hand fire extinguisher.

__§ 135.89 Pilot requirements: Use of oxygen.\

(a) Unpressurized aircraft. Each pilot of an unpressurized aircraft shall use oxygen continuously when flying—
   (1) At altitudes above 10,000 feet through 12,000 feet MSL for that part of the flight at those altitudes that is of more than 30 minutes duration; and
   (2) Above 12,000 feet MSL.

(b) Pressurized aircraft. Whenever a pressurized aircraft is operated with the cabin pressure altitude more than 10,000 feet MSL, each pilot shall comply with paragraph (a) of this section.
   (1) At altitudes above 25,000 feet through 35,000 feet MSL, unless each pilot has an approved quick-donning type oxygen mask—
      (i) At least one pilot at the controls shall wear, secured and sealed, an oxygen mask that either supplies oxygen at all times or automatically supplies oxygen whenever the cabin pressure altitude exceeds 12,000 feet MSL; and
      (ii) During that flight, each other pilot on flight deck duty shall have an oxygen mask, connected to an oxygen supply, located so as to allow immediate placing of the mask on the pilot’s face sealed and secured for use.
   (2) Whenever a pressurized aircraft is operated at altitudes above 35,000 feet MSL, at least one pilot at the controls
shall wear, secured and sealed, an oxygen mask required by paragraph (b)(2)(i) of this section.

(4) If one pilot leaves a pilot duty station of an aircraft when operating at altitudes above 25,000 feet MSL, the remaining pilot at the controls shall put on and use an approved oxygen mask until the other pilot returns to the pilot duty station of the aircraft.

§ 135.91 Oxygen for medical use by passengers.

(a) Except as provided in paragraphs (d) and (e) of this section, no certificate holder may allow the carriage or operation of equipment for the storage, generation or dispensing of medical oxygen unless the unit to be carried is constructed so that all valves, fittings, and gauges are protected from damage during that carriage or operation and unless the following conditions are met—

(1) The equipment must be—

(i) Of an approved type or in conformity with the manufacturing, packaging, marking, labeling, and maintenance requirements of title 49 CFR parts 171, 172, and 173, except §173.24(a)(1);

(ii) When owned by the certificate holder, maintained under the certificate holder’s approved maintenance program;

(iii) Free of flammable contaminants on all exterior surfaces; and

(iv) Appropriately secured.

(2) When the oxygen is stored in the form of a liquid, the equipment must have been under the certificate holder’s approved maintenance program since its purchase new or since the storage container was last purged.

(3) When the oxygen is stored in the form of a compressed gas as defined in title 49 CFR 173.30(a)—

(i) When owned by the certificate holder, it must be maintained under its approved maintenance program; and

(ii) The pressure in any oxygen cylinder must not exceed the rated cylinder pressure.

(4) The pilot in command must be advised when the equipment is on board, and when it is intended to be used.

(5) The equipment must be stowed, and each person using the equipment must be seated, so as not to restrict access to or use of any required emergency or regular exit, or of the aisle in the passenger compartment.

(b) No person may smoke and no certificate holder may allow any person to smoke within 10 feet of oxygen storage and dispensing equipment carried under paragraph (a) of this section.

(c) No certificate holder may allow any person other than a person trained in the use of medical oxygen equipment to connect or disconnect oxygen bottles or any other ancillary component while any passenger is aboard the aircraft.

(d) Paragraph (a)(1)(i) of this section does not apply when that equipment is furnished by a professional or medical emergency service for use on board an aircraft in a medical emergency when no other practical means of transportation (including any other properly equipped certificate holder) is reasonably available and the person carried under the medical emergency is accompanied by a person trained in the use of medical oxygen.

(e) Each certificate holder who, under the authority of paragraph (d) of this section, deviates from paragraph (a)(1)(i) of this section under a medical emergency shall, within 10 days, excluding Saturdays, Sundays, and Federal holidays, after the deviation, send to the certificate-holding district office a complete report of the operation involved, including a description of the deviation and the reasons for it.

§ 135.93 Autopilot: Minimum altitudes for use.

(a) Except as provided in paragraphs (b), (c), (d), and (e) of this section, no person may use an autopilot at an altitude above the terrain which is less than 500 feet or less than twice the maximum altitude loss specified in the approved Aircraft Flight Manual or equivalent for a malfunction of the autopilot, whichever is higher.

(b) When using an instrument approach facility other than ILS, no person may use an autopilot at an altitude above the terrain that is less than 50 feet below the approved minimum descent altitude for that procedure, or
§ 135.95 Airmen: Limitations on use of services.

No certificate holder may use the services of any person as an airman unless the person performing those services—

(a) Holds an appropriate and current airman certificate; and

(b) Is qualified, under this chapter, for the operation for which the person is to be used.

§ 135.97 Aircraft and facilities for recent flight experience.

Each certificate holder shall provide aircraft and facilities to enable each of its pilots to maintain and demonstrate the pilot’s ability to conduct all operations for which the pilot is authorized.

§ 135.99 Composition of flight crew.

(a) No certificate holder may operate an aircraft with less than the minimum flight crew specified in the aircraft operating limitations or the Aircraft Flight Manual for that aircraft and required by this part for the kind of operation being conducted.

(b) No certificate holder may operate an aircraft without a second in command if that aircraft has a passenger seating configuration, excluding any pilot seat, of ten seats or more.

§ 135.100 Flight crewmember duties.

(a) No certificate holder shall require, nor may any flight crewmember perform, any duties during a critical phase of flight except those duties required for the safe operation of the aircraft. Duties such as company required calls made for such nonsafety related purposes as ordering galley supplies and confirming passenger connections, announcements made to passengers promoting the air carrier or pointing out sights of interest, and filling out company payroll and related records are not required for the safe operation of the aircraft.

(b) No flight crewmember may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any flight crewmember from the performance of his or her duties or which could interfere in any way with the
§ 135.113 Passenger occupancy of pilot seat.

No certificate holder may operate an aircraft type certificated after October 15, 1971, that has a passenger seating configuration, excluding any pilot seat, of more than eight seats if any person
§ 135.115 Manipulation of controls.

No pilot in command may allow any person to manipulate the flight controls of an aircraft during flight conducted under this part, nor may any person manipulate the controls during such flight unless that person is—
(a) A pilot employed by the certificate holder and qualified in the aircraft; or
(b) An authorized safety representative of the Administrator who has the permission of the pilot in command, is qualified in the aircraft, and is checking flight operations.

§ 135.117 Briefing of passengers before flight.

(a) Before each takeoff each pilot in command of an aircraft carrying passengers shall ensure that all passengers have been orally briefed on—
(1) Smoking. Each passenger shall be briefed on when, where, and under what conditions smoking is prohibited (including, but not limited to, any applicable requirements of part 252 of this title). This briefing shall include a statement that the Federal Aviation Regulations require passenger compliance with lighted passenger information signs and crewmember instructions concerning the use of safety belts.
(2) The use of safety belts, including instructions on how to fasten and unfasten the safety belts. Each passenger shall be briefed on when, where, and under what conditions the safety belt must be fastened about that passenger. This briefing shall include a statement that the Federal Aviation Regulations require passenger compliance with lighted passenger information signs and crewmember instructions concerning the use of safety belts.
(3) The placement of seat backs in an upright position before takeoff and landing;
(4) Location and means for opening the passenger entry door and emergency exits;
(5) Location of survival equipment;
(6) If the flight involves extended oceanic operation, ditching procedures and the use of required flotation equipment;
(7) If the flight involves operations above 12,000 feet MSL, the normal and emergency use of oxygen; and
(8) Location and operation of fire extinguishers.
(b) Before each takeoff the pilot in command shall ensure that each person who may need the assistance of another person to move expeditiously to an exit if an emergency occurs and that person's attendant, if any, has received a briefing as to the procedures to be followed if an evacuation occurs. This paragraph does not apply to a person who has been given a briefing before a previous leg of a flight in the same aircraft.
(c) The oral briefing required by paragraph (a) of this section shall be given by the pilot in command or a crewmember.
(d) Notwithstanding the provisions of paragraph (c) of this section, for aircraft certificated to carry 19 passengers or less, the oral briefing required by paragraph (a) of this section shall be given by the pilot in command or a crewmember.
(e) The oral briefing required by paragraph (a) shall be supplemented by printed cards which must be carried in the aircraft in locations convenient for the use of each passenger. The cards must—
(1) Be appropriate for the aircraft on which they are to be used;
(2) Contain a diagram of, and method of operating, the emergency exits; and
(3) Contain other instructions necessary for the use of emergency equipment on board the aircraft.
(f) The briefing required by paragraph (a) may be delivered by means of an approved recording playback device that is audible to each passenger under normal noise levels.

§ 135.127 Passenger information.

(a) No person may conduct a scheduled flight segment on which smoking is prohibited unless the “No Smoking” passenger information signs are lighted during the entire flight segment, or one or more “No Smoking” placards meeting the requirements of § 25.1541 are posted during the entire flight segment. If both the lighted signs and the placards are used, the signs must remain lighted during the entire flight segment. Smoking is prohibited on scheduled flight segments:

(1) Between any two points within Puerto Rico, the United States Virgin Islands, the District of Columbia, or any State of the United States (other than Alaska or Hawaii) or between any two points in any one of the above-
§ 135.128 Use of safety belts and child restraint systems.

(a) Except as provided in this paragraph, each person on board an aircraft operated under this part shall occupy an approved seat or berth with a separate safety belt properly secured about him or her during movement on the surface, takeoff, and landing. For seaplane and float equipped rotorcraft operations during movement on the surface, the person pushing off the seaplane or rotorcraft from the dock and the person mooring the seaplane or rotorcraft at the dock are excepted from the preceding seating and safety belt requirements. A safety belt provided for the occupant of a seat may not be used by more than one person who has reached his or her second birthday. Notwithstanding the preceding requirements, a child may:

(1) Be held by an adult who is occupying an approved seat or berth, provided the child has not reached his or her second birthday and the child does not occupy or use any restraining device; or

(2) Notwithstanding any other requirement of this chapter, occupy an approved child restraint system furnished by the certificate holder or one of the persons described in paragraph (a)(2)(i) of this section, provided:

(i) The child is accompanied by a parent, guardian, or attendant designated by the child’s parent or guardian to attend to the safety of the child during the flight;

(ii) Except as provided in paragraph (a)(2)(ii)(D) of this section, the approved child restraint system bears one or more labels as follows:

(A) Seats manufactured to U.S. standards between January 1, 1981, and February 26, 1985, must bear the label: “This child restraint system conforms to all applicable Federal motor vehicle safety standards”;

(B) Seats manufactured to U.S. standards on or after February 26, 1985, must bear two labels: (1) “This child restraint system conforms to all applicable Federal motor vehicle safety standards”; and (2) “THIS RESTRAINT IS CERTIFIED FOR USE IN MOTOR VEHICLES AND AIRCRAFT” in red lettering;
§ 135.129 Exit seating.

(a)(1) Applicability. This section applies to all certificate holders operating under this part, except for on-demand operations with aircraft having 19 or fewer passenger seats and commuter operations with aircraft having 9 or fewer passenger seats.

(b) Except as provided in paragraph (b)(3) of this section, the following prohibitions apply to certificate holders:

(1) No certificate holder may permit a child, in an aircraft, to occupy a booster-type child restraint system, a vest-type child restraint system, a harness-type child restraint system, or a lap held child restraint system during take off, landing, or movement on the surface.

(2) Except as required in paragraph (b)(1) of this section, no certificate holder may prohibit a child, if requested by the child’s parent, guardian, or designated attendant, from occupying a child restraint system furnished by the child’s parent, guardian, or designated attendant provided:

(i) The child holds a ticket for an approved seat or berth or such seat or berth is otherwise made available by the certificate holder for the child’s use;

(ii) The requirements of paragraph (a)(2)(i) of this section are met;

(iii) The requirements of paragraph (a)(2)(ii) of this section are met; and

(iv) The child restraint system has one or more of the labels described in paragraphs (a)(2)(ii)(A) through (a)(2)(ii)(C) of this section.

(3) This section does not prohibit the certificate holder from providing child restraint systems authorized by this or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.

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(b) No certificate holder may seat a person in a seat affected by this section if the certificate holder determines that it is likely that the person would be unable to perform one or more of the applicable functions listed in paragraph (d) of this section because—

(1) The person lacks sufficient mobility, strength, or dexterity in both arms and hands, and both legs:
   (i) To reach upward, sideways, and downward to the location of emergency exit and exit-slide operating mechanisms;
   (ii) To grasp and push, pull, turn, or otherwise manipulate those mechanisms;
   (iii) To push, shove, pull, or otherwise open emergency exits;
   (iv) To lift out, hold, deposit on nearby seats, or maneuver over the seatbacks to the next row objects the size and weight of over-wing window exit doors;
   (v) To remove obstructions of size and weight similar over-wing exit doors;
   (vi) To reach the emergency exit expeditiously;
   (vii) To maintain balance while removing obstructions;
   (viii) To exit expeditiously;
   (ix) To stabilize an escape slide after deployment; or
   (x) To assist others in getting off an escape slide;

(2) The person is less than 15 years of age or lacks the capacity to perform one or more of the applicable functions listed in paragraph (d) of this section without the assistance of an adult companion, parent, or other relative;

(3) The person lacks the ability to read and understand instructions required by this section and related to emergency evacuation provided by the certificate holder in printed or graphic form or the ability to understand oral crew commands.

(4) The person lacks sufficient visual capacity to perform one or more of the applicable functions in paragraph (d) of this section without the assistance of visual aids beyond contact lenses or eyeglasses;

(5) The person lacks sufficient aural capacity to hear and understand instructions shouted by flight attendants, without assistance beyond a hearing aid;

(6) The person lacks the ability adequately to impart information orally to other passengers; or,

(7) The person has:
   (i) A condition or responsibilities, such as caring for small children, that might prevent the person from performing one or more of the applicable functions listed in paragraph (d) of this section; or
   (ii) A condition that might cause the person harm if he or she performs one or more of the applicable functions listed in paragraph (d) of this section.

(c) Each passenger shall comply with instructions given by a crewmember or other authorized employee of the certificate holder implementing exit seating restrictions established in accordance with this section.

(d) Each certificate holder shall include on passenger information cards, presented in the language in which briefings and oral commands are given by the crew, at each exit seat affected by this section, information that, in the event of an emergency in which a crewmember is not available to assist, a passenger occupying an exit seat may use if called upon to perform the following functions:

   (1) Locate the emergency exit;
   (2) Recognize the emergency exit opening mechanism;
   (3) Comprehend the instructions for operating the emergency exit;
   (4) Operate the emergency exit;
   (5) Assess whether opening the emergency exit will increase the hazards to which passengers may be exposed;
   (6) Follow oral directions and hand signals given by a crewmember;
   (7) Stow or secure the emergency exit door so that it will not impede use of the exit;
   (8) Assess the condition of an escape slide, activate the slide, and stabilize the slide after deployment to assist others in getting off the slide;
   (9) Pass expeditiously through the emergency exit; and
   (10) Assess, select, and follow a safe path away from the emergency exit.

(e) Each certificate holder shall include on passenger information cards, at each exit seat—
(1) In the primary language in which emergency commands are given by the crew, the selection criteria set forth in paragraph (b) of this section, and a request that a passenger identify himself or herself to allow reseating if he or she—
   (i) Cannot meet the selection criteria set forth in paragraph (b) of this section;
   (ii) Has a nondiscernible condition that will prevent him or her from performing the applicable functions listed in paragraph (d) of this section;
   (iii) May suffer bodily harm as the result of performing one or more of those functions; or
   (iv) Does not wish to perform those functions; and,
(2) In each language used by the certificate holder for passenger information cards, a request that a passenger identify himself or herself to allow reseating if he or she lacks the ability to read, speak, or understand the language or the graphic form in which instructions required by this section and related to emergency evacuation are provided by the certificate holder, or the ability to understand the specified language in which crew commands will be given in an emergency;
   (3) May suffer bodily harm as the result of performing one or more of those functions; or,
   (4) Does not wish to perform those functions.
A certificate holder shall not require the passenger to disclose his or her reason for needing reseating.

(f) Each certificate holder shall make available for inspection by the public at all passenger loading gates and ticket counters at each airport where it conducts passenger operations, written procedures established for making determinations in regard to exit row seating.

(g) No certificate holder may allow taxi or pushback unless at least one required crewmember has verified that no exit seat is occupied by a person the crewmember determines is likely to be unable to perform the applicable functions listed in paragraph (d) of this section.

(h) Each certificate holder shall include in its passenger briefings a reference to the passenger information cards, required by paragraphs (d) and (e), the selection criteria set forth in paragraph (b), and the functions to be performed, set forth in paragraph (d) of this section.

(i) Each certificate holder shall include in its passenger briefings a request that a passenger identify himself or herself to allow reseating if he or she—
   (1) Cannot meet the selection criteria set forth in paragraph (b) of this section;
   (2) Has a nondiscernible condition that will prevent him or her from performing the applicable functions listed in paragraph (d) of this section;
   (3) May suffer bodily harm as the result of performing one or more of those functions; or
   (4) Does not wish to perform those functions.
A certificate holder shall not require the passenger to disclose his or her reason for needing reseating.

(j) [Reserved]

(k) In the event a certificate holder determines in accordance with this section that it is likely that a passenger assigned to an exit seat would be unable to perform the functions listed in paragraph (d) of this section or a passenger requests a non-exit seat, the certificate holder shall expeditiously relocate the passenger to a non-exit seat.

(l) In the event of full booking in the non-exit seats and if necessary to accommodate a passenger being relocated from an exit seat, the certificate holder shall move a passenger who is willing and able to assume the evacuation functions that may be required, to an exit seat.

(m) A certificate holder may deny transportation to any passenger under this section only because—
   (1) The passenger refuses to comply with instructions given by a crewmember or other authorized employee of the certificate holder implementing exit seating restrictions established in accordance with this section, or
   (2) The only seat that will physically accommodate the person's handicap is an exit seat.

(n) In order to comply with this section certificate holders shall—
   (1) Establish procedures that address:
§ 135.141 Applicability.

This subpart prescribes aircraft and equipment requirements for operations under this part. The requirements of this subpart are in addition to the aircraft and equipment requirements of part 91 of this chapter. However, this part does not require the duplication of any equipment required by this chapter.

§ 135.143 General requirements.

(a) No person may operate an aircraft under this part unless that aircraft and its equipment meet the applicable regulations of this chapter.

(b) Except as provided in §135.179, no person may operate an aircraft under this part unless the required instruments and equipment in it have been approved and are in an operable condition.

(c) ATC transponder equipment installed within the time periods indicated below must meet the performance and environmental requirements of the following TSO's:

(1) Through January 1, 1992: (i) Any class of TSO-C74b or any class of TSO-C74c as appropriate, provided that the equipment was manufactured before January 1, 1990; or

(2) After January 1, 1992: The appropriate class of TSO-C112 (Mode S).

(2) After January 1, 1992: The appropriate class of TSO-C112 (Mode S). For purposes of paragraph (c)(2) of this section, “installation” does not include—

(i) Temporary installation of TSO-C74b or TSO-C74c substitute equipment, as appropriate, during maintenance of the permanent equipment;

(ii) Reinstallation of equipment after temporary removal for maintenance; or

(iii) For fleet operations, installation of equipment in a fleet aircraft after removal of the equipment for maintenance from another aircraft in the same operator's fleet.

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(3) Entry into a representative number of en route airports as determined by the Administrator.

(b) No certificate holder may carry passengers in an aircraft during proving tests, except those needed to make the tests and those designated by the Administrator to observe the tests. However, pilot flight training may be conducted during the proving tests.

(c) For the purposes of paragraph (a) of this section an aircraft is not considered to be of similar design if an alteration includes—

(1) The installation of powerplants other than those of a type similar to those with which it is certificated; or

(2) Alterations to the aircraft or its components that materially affect flight characteristics.

(d) The Administrator may authorize deviations from this section if the Administrator finds that special circumstances make full compliance with this section unnecessary.

§ 135.147 Dual controls required.

No person may operate an aircraft in operations requiring two pilots unless it is equipped with functioning dual controls. However, if the aircraft type certification operating limitations do not require two pilots, a throwover control wheel may be used in place of two control wheels.

§ 135.149 Equipment requirements: General.

No person may operate an aircraft unless it is equipped with—

(a) A sensitive altimeter that is adjustable for barometric pressure;

(b) Heating or deicing equipment for each carburetor or, for a pressure carburetor, an alternate air source;

(c) For turbojet airplanes, in addition to two gyroscopic bank-and-pitch indicators (artificial horizons) for use at the pilot stations, a third indicator that is installed in accordance with the instrument requirements prescribed in § 121.305(j) of this chapter.

(d) [Reserved]

(e) For turbine powered aircraft, any other equipment as the Administrator may require.


§ 135.150 Public address and crewmember interphone systems.

No person may operate an aircraft having a passenger seating configuration, excluding any pilot seat, of more than 19 unless it is equipped with—

(a) A public address system which—

(1) Is capable of operation independent of the crewmember interphone system required by paragraph (b) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;

(2) Is approved in accordance with § 21.305 of this chapter;

(3) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(4) For each required floor-level passenger emergency exit which has an adjacent flight attendant seat, has a microphone which is readily accessible to the seated flight attendant, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated flight attendants;

(5) Is capable of operation within 10 seconds by a flight attendant at each of those stations in the passenger compartment from which its use is accessible;

(6) Is audible at all passenger seats, lavatories, and flight attendant seats and work stations; and

(7) For transport category airplanes manufactured on or after November 27, 1990, meets the requirements of §25.1423 of this chapter.

(b) A crewmember interphone system which—

(1) Is capable of operation independent of the public address system required by paragraph (a) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;
§ 135.151 Cockpit voice recorders.

(a) No person may operate a multiengine, turbine-powered airplane or rotorcraft having a passenger seating configuration of six or more and for which two pilots are required by certification or operating rules unless it is equipped with an approved cockpit voice recorder that:

(1) Is installed in compliance with § 23.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); § 25.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); § 27.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); or § 29.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g) of this chapter, as applicable; and

(2) Is operated continuously from the use of the check list before the flight to completion of the final check list at the end of the flight.

(b) No person may operate a multigenie, turbine-powered airplane or rotorcraft having a passenger seating configuration of 20 or more seats unless it is equipped with an approved cockpit voice recorder that—

(1) Is installed in compliance with § 23.1457, § 25.1457, § 27.1457 or § 29.1457 of this chapter, as applicable; and

(2) Is operated continuously from the use of the check list before the flight to completion of the final check list at the end of the flight.

(c) In the event of an accident, or occurrence requiring immediate notification of the National Transportation Safety Board which results in termination of the flight, the certificate holder shall keep the recorded information for at least 60 days or, if requested by the Administrator or the Board, for a longer period. Information obtained from the record may be used to assist in determining the cause of accidents or occurrences in connection with investigations. The Administrator does not use the record in any civil penalty or certificate action.

(d) For those aircraft equipped to record the uninterrupted audio signals received by a boom or a mask microphone the flight crewmembers are required to use the boom microphone below 18,000 feet mean sea level. No person may operate a large turbine engine powered airplane manufactured after October 11, 1991, or on which a cockpit voice recorder has been installed after October 11, 1991, unless it is equipped to record the uninterrupted audio signal received by a boom or mask microphone in accordance with § 25.1457(c)(5) of this chapter.

(e) In complying with this section, an approved cockpit voice recorder having
§ 135.152 Flight recorders.

(a) Except as provided in paragraph (k) of this section, no person may operate under this part a multi-engine, turbine-engine powered airplane or rotorcraft having a passenger seating configuration, excluding any required crewmember seat, of 10 to 19 seats, that was either brought onto the U.S. register after, or was registered outside the United States and added to the operator’s U.S. operations specifications after, October 11, 1991, unless it is equipped with one or more approved flight recorders that use a digital method of recording and storing data and a method of readily retrieving that data from the storage medium. The parameters specified in either Appendix B or C of this part, as applicable must be recorded within the range, accuracy, resolution, and sampling intervals as specified. The recorder shall retain no less than 25 hours of aircraft operation.

(b) After October 11, 1991, no person may operate a multiengine, turbine-powered airplane having a passenger seating configuration of 20 to 30 seats or a multiengine, turbine-powered rotorcraft having a passenger seating configuration of 20 or more seats unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data, and a method of readily retrieving that data from the storage medium. The parameters specified in either Appendix D or E of this part, as applicable must be recorded.

(c) Whenever a flight recorder required by this section is installed, it must be operated continuously from the instant the airplane begins the takeoff roll or the rotorcraft begins the lift-off until the airplane has completed the landing roll or the rotorcraft has landed at its destination.

(d) Except as provided in paragraph (c) of this section, and except for recorded data erased as authorized in this paragraph, each certificate holder...
§ 135.152 shall keep the recorded data prescribed in paragraph (a) of this section until the aircraft has been operating for at least 25 hours of the operating time specified in paragraph (c) of this section. In addition, each certificate holder shall keep the recorded data prescribed in paragraph (b) of this section for an airplane until the airplane has been operating for at least 25 hours, and for a rotorcraft until the rotorcraft has been operating for at least 10 hours, of the operating time specified in paragraph (c) of this section. A total of 1 hour of recorded data may be erased for the purpose of testing the flight recorder or the flight recorder system. Any erasure made in accordance with this paragraph must be of the oldest recorded data accumulated at the time of testing. Except as provided in paragraph (c) of this section, no record need be kept more than 60 days.

(e) In the event of an accident or occurrence that requires the immediate notification of the National Transportation Safety Board under 49 CFR part 830 of its regulations and that results in termination of the flight, the certificate holder shall remove the recording media from the aircraft and keep the recorded data required by paragraphs (a) and (b) of this section for at least 60 days or for a longer period upon request of the Board or the Administrator.

(f)(1) For airplanes manufactured on or before August 18, 2000, and all other aircraft, each flight recorder required by this section must be installed in accordance with the requirements of §23.1459, 25.1459, 27.1459, or 29.1459, as appropriate, of this chapter. The correlation required by paragraph (c) of §23.1459, 25.1459, 27.1459, or 29.1459, as appropriate, of this chapter need be established only on one aircraft of a group of aircraft:

(i) That are of the same type;
(ii) On which the flight recorder models and their installations are the same; and
(iii) On which there are no differences in the type designs with respect to the installation of the first pilot’s instruments associated with the flight recorder. The most recent instrument calibration, including the recording medium from which this calibration is derived, and the recorder correlation must be retained by the certificate holder.

(f)(2) For airplanes manufactured after August 18, 2000, each flight data recorder system required by this section must be installed in accordance with the requirements of §23.1459 (a), (b), (d) and (e) of this chapter, or §25.1459 (a), (b), (d), and (e) of this chapter. A correlation must be established between the values recorded by the flight data recorder and the corresponding values being measured. The correlation must contain a sufficient number of correlation points to accurately establish the conversion from the recorded values to engineering units or discrete state over the full operating range of the parameter. Except for airplanes having separate altitude and airspeed sensors that are an integral part of the flight data recorder system, a single correlation may be established for any group of airplanes—

(i) That are of the same type;
(ii) On which the flight recorder system and its installation are the same; and
(iii) On which there is no difference in the type design with respect to the installation of those sensors associated with the flight data recorder system. Documentation sufficient to convert recorded data into the engineering units and discrete values specified in the applicable appendix must be maintained by the certificate holder.

(g) Each flight recorder required by this section that records the data specified in paragraphs (a) and (b) of this section must have an approved device to assist in locating that recorder under water.

(h) The operational parameters required to be recorded by digital flight data recorders required by paragraphs (i) and (j) of this section are as follows, the phrase “when an information source is installed” following a parameter indicates that recording of that parameter is not intended to require a change in installed equipment.

(1) Time;
(2) Pressure altitude;
(3) Indicated airspeed;
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(4) Heading—primary flight crew reference (if selectable, record discrete, true or magnetic);
(5) Normal acceleration (Vertical);
(6) Pitch attitude;
(7) Roll attitude;
(8) Manual radio transmitter keying, or CVR/DFDR synchronization reference;
(9) Thrust/power of each engine—primary flight crew reference;
(10) Autopilot engagement status;
(11) Longitudinal acceleration;
(12) Pitch control input;
(13) Lateral control input;
(14) Rudder pedal input;
(15) Primary pitch control surface position;
(16) Primary lateral control surface position;
(17) Primary yaw control surface position;
(18) Lateral acceleration;
(19) Pitch trim surface position or parameters of paragraph (h)(82) of this section if currently recorded;
(20) Trailing edge flap or cockpit flap control selection (except when parameters of paragraph (h)(85) of this section apply);
(21) Leading edge flap or cockpit flap control selection (except when parameters of paragraph (h)(86) of this section apply);
(22) Each Thrust reverser position (or equivalent for propeller airplane);
(23) Ground spoiler position or speed brake selection (except when parameters of paragraph (h)(87) of this section apply);
(24) Outside or total air temperature;
(25) Automatic Flight Control System (AFCS) modes and engagement status, including autothrottle;
(26) Radio altitude (when an information source is installed);
(27) Localizer deviation, MLS Azimuth;
(28) Glideslope deviation, MLS Elevation;
(29) Marker beacon passage;
(30) Master warning;
(31) Air/ground sensor (primary airplane system reference nose or main gear);
(32) Angle of attack (when information source is installed);
(33) Hydraulic pressure low (each system);
(34) Ground speed (when an information source is installed);
(35) Ground proximity warning system;
(36) Landing gear position or landing gear cockpit control selection;
(37) Drift angle (when an information source is installed);
(38) Wind speed and direction (when an information source is installed);
(39) Latitude and longitude (when an information source is installed);
(40) Stick shaker/pusher (when an information source is installed);
(41) Windshear (when an information source is installed);
(42) Throttle/power lever position;
(43) Additional engine parameters (as designated in appendix F of this part);
(44) Traffic alert and collision avoidance system;
(45) DME 1 and 2 distances;
(46) Nav 1 and 2 selected frequency;
(47) Selected barometric setting (when an information source is installed);
(48) Selected altitude (when an information source is installed);
(49) Selected speed (when an information source is installed);
(50) Selected mach (when an information source is installed);
(51) Selected vertical speed (when an information source is installed);
(52) Selected heading (when an information source is installed);
(53) Selected flight path (when an information source is installed);
(54) Selected decision height (when an information source is installed);
(55) EFIS display format;
(56) Multi-function/engine/alerts display format;
(57) Thrust command (when an information source is installed);
(58) Thrust target (when an information source is installed);
(59) Fuel quantity in CG trim tank (when an information source is installed);
(60) Primary Navigation System Reference;
(61) Icing (when an information source is installed);
(62) Engine warning each engine vibration (when an information source is installed);
§ 135.153 Ground proximity warning system.

(a) No person may operate a turbine-powered airplane having a passenger seat configuration of 10 seats or more, excluding any pilot seat, unless it is equipped with an approved ground proximity warning system.

(b) [Reserved]

(c) For a system required by this section, the Airplane Flight Manual shall contain—

(1) Appropriate procedures for—

(i) The use of the equipment;

(ii) Proper flight crew action with respect to the equipment; and

(iii) Deactivation for planned abnormal and emergency conditions; and

(2) An outline of all input sources that must be operating.

(d) No person may deactivate a system required by this section except under procedures in the Airplane Flight Manual.

(e) Whenever a system required by this section is deactivated, an entry

must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix F of this part.

(i) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, that are manufactured after August 19, 2002 the parameters listed in paragraph (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

(j) For airplanes manufactured before August 18, 1997 the following airframe type need not comply with this section: deHavilland DHC-6.

shall be made in the airplane maintenance record that includes the date and time of deactivation.

§ 135.155 Fire extinguishers: Passenger-carrying aircraft.

No person may operate an aircraft carrying passengers unless it is equipped with hand fire extinguishers of an approved type for use in crew and passenger compartments as follows—

(a) The type and quantity of extinguishing agent must be suitable for the kinds of fires likely to occur;

(b) At least one hand fire extinguisher must be provided and conveniently located on the flight deck for use by the flight crew; and

(c) At least one hand fire extinguisher must be conveniently located in the passenger compartment of each aircraft having a passenger seating configuration, excluding any pilot seat, of at least 10 seats but less than 31 seats.

§ 135.157 Oxygen equipment requirements.

(a) Unpressurized aircraft. No person may operate an unpressurized aircraft at altitudes prescribed in this section unless it is equipped with enough oxygen dispensers and oxygen to supply the pilots under §135.89(a) and to supply, when flying—

(1) At altitudes above 10,000 feet through 15,000 feet MSL, oxygen to at least 10 percent of the occupants of the aircraft, other than the pilots, for that part of the flight at those altitudes that is of more than 30 minutes duration; and

(2) Above 15,000 feet MSL, oxygen to each occupant of the aircraft, other than the pilots, for one hour unless, at all times during flight above that altitude, the aircraft can safely descend to 15,000 feet MSL within four minutes, in which case only a 30-minute supply is required.

(b) Pressurized aircraft. No person may operate a pressurized aircraft—

(1) At altitudes above 25,000 feet MSL unless at least a 10-minute supply of supplemental oxygen is available for each occupant of the aircraft, other than the pilots, for use when a descent is necessary due to loss of cabin pressurization; and

(2) Unless it is equipped with enough oxygen dispensers and oxygen to com-
§ 135.159 Equipment requirements: Carrying passengers under VFR at night or under VFR over-the-top conditions.

No person may operate an aircraft carrying passengers under VFR at night, or under VFR over-the-top, unless it is equipped with—

(a) A gyroscopic rate-of-turn indicator except on the following aircraft:
   (1) Airplanes with a third attitude instrument system usable through flight attitudes of 360 degrees of pitch-and-roll and installed in accordance with the instrument requirements prescribed in § 121.305(j) of this chapter.
   (2) Helicopters with a third attitude instrument system usable through flight attitudes of ±80 degrees of pitch and ±120 degrees of roll and installed in accordance with § 29.1303(g) of this chapter.
   (3) Helicopters with a maximum certificated takeoff weight of 6,000 pounds or less.
   (b) A slip skid indicator.
   (c) A gyroscopic bank-and-pitch indicator.
   (d) A gyroscopic direction indicator.
   (e) A generator or generators able to supply all probable combinations of continuous in-flight electrical loads for required equipment and for recharging the battery.
   (f) For night flights—
      (1) An anticollision light system;
      (2) Instrument lights to make all instruments, switches, and gauges easily readable, the direct rays of which are shielded from the pilots’ eyes; and
      (3) A flashlight having at least two size “D” cells or equivalent.
   (g) For the purpose of paragraph (e) of this section, a continuous in-flight electrical load includes one that draws current continuously during flight, such as radio equipment and electrically driven instruments and lights, but does not include occasional intermittent loads.
   (h) Notwithstanding provisions of paragraphs (b), (c), and (d), helicopters having a maximum certificated takeoff weight of 6,000 pounds or less may be operated until January 6, 1988, under visual flight rules at night without a slip skid indicator, a gyroscopic bank-and-pitch indicator, or a gyroscopic direction indicator.


§ 135.161 Radio and navigational equipment: Carrying passengers under VFR at night or under VFR over-the-top.

(a) No person may operate an aircraft carrying passengers under VFR at night, or under VFR over-the-top, unless it has two-way radio communications equipment able, at least in flight, to transmit to, and receive from, ground facilities 25 miles away.
   (b) No person may operate an aircraft carrying passengers under VFR over-the-top unless it has radio navigational equipment able to receive radio signals from the ground facilities to be used.
   (c) No person may operate an airplane carrying passengers under VFR at night unless it has radio navigational equipment able to receive radio signals from the ground facilities to be used.

§ 135.163 Equipment requirements: Aircraft carrying passengers under IFR.

No person may operate an aircraft under IFR, carrying passengers, unless it has—

(a) A vertical speed indicator;
   (b) A free-air temperature indicator;
   (c) A heated pitot tube for each airspeed indicator;
   (d) A power failure warning device or vacuum indicator to show the power available for gyroscopic instruments from each power source;
   (e) An alternate source of static pressure for the altimeter and the airspeed and vertical speed indicators;
   (f) For a single-engine aircraft:
      (1) Two independent electrical power generating sources each of which is able to supply all probable combinations of continuous in-flight electrical loads for required instruments and equipment; or
(2) In addition to the primary electrical power generating source, a standby battery or an alternate source of electric power that is capable of supplying 150% of the electrical loads of all required instruments and equipment necessary for safe emergency operation of the aircraft for at least one hour:

(g) For multi-engine aircraft, at least two generators or alternators each of which is on a separate engine, of which any combination of one-half of the total number are rated sufficiently to supply the electrical loads of all required instruments and equipment necessary for safe emergency operation of the aircraft except that for multi-engine helicopters, the two required generators may be mounted on the main rotor drive train; and

(h) Two independent sources of energy (with means of selecting either) of which at least one is an engine-driven pump or generator, each of which is able to drive all required gyroscopic instruments powered by, or to be powered by, that particular source and installed so that failure of one instrument or source, does not interfere with the energy supply to the remaining instruments or the other energy source unless, for single-engine aircraft in all cargo operations only, the rate of turn indicator has a source of energy separate from the bank and pitch and direction indicators. For the purpose of this paragraph, for multi-engine helicopters, each engine-driven source of energy must be on a different engine.

(i) For the purpose of paragraph (f) of this section, a continuous inflight electrical load includes one that draws current continuously during flight, such as radio equipment, electrically driven instruments, and lights, but does not include occasional intermittent loads.

§ 135.165 Radio and navigational equipment: Extended overwater or IFR operations.

(a) No person may operate a turbojet airplane having a passenger seating configuration, excluding any pilot seat, of 10 seats or more, or a multiengine airplane in a commuter operation, as defined in part 119 of this chapter, under IFR or in extended overwater operations unless it has at least the following radio communication and navigational equipment appropriate to the facilities to be used which are capable of transmitting to, and receiving from, at any place on the route to be flown, at least one ground facility:

(1) Two transmitters, (2) two microphones, (3) two headsets or one headset and one speaker, (4) a marker beacon receiver, (5) two independent receivers for navigation, and (6) two independent receivers for communications.

(b) No person may operate an aircraft other than that specified in paragraph (a) of this section, under IFR or in extended overwater operations unless it has at least the following radio communication and navigational equipment appropriate to the facilities to be used and which are capable of transmitting to, and receiving from, at any place on the route, at least one ground facility:

(1) A transmitter, (2) two microphones, (3) two headsets or one headset and one speaker, (4) a marker beacon receiver, (5) two independent receivers for navigation, (6) two independent receivers for communications, and (7) for extended overwater operations only, an additional transmitter.

(c) For the purpose of paragraphs (a)(5), (a)(6), (b)(5), and (b)(6) of this section, a receiver is independent if the function of any part of it does not depend on the functioning of any part of another receiver. However, a receiver that can receive both communications and navigational signals may be used in place of a separate communications receiver and a separate navigational signal receiver.

(d) Notwithstanding the requirements of paragraphs (a) and (b) of this section, installation and use of a single long-range navigation system and a single long-range communication system, for extended overwater operations, may be authorized by the Administrator and approved in the certificate holder's operations specifications. The following are among the operational factors the Administrator may consider in granting an authorization:

(1) The ability of the flightcrew to reliably fix the position of the airplane.
§ 135.167 Emergency equipment: Extended overwater operations.

(a) No person may operate an aircraft in extended overwater operations unless it carries, installed in conspicuously marked locations easily accessible to the occupants if a ditching occurs, the following equipment:

(1) An approved life preserver equipped with an approved survivor locator light for each occupant of the aircraft. The life preserver must be easily accessible to each seated occupant.

(2) Enough approved liferafts of a rated capacity and buoyancy to accommodate the occupants of the aircraft.

(b) Each liferaft required by paragraph (a) of this section must be equipped with or contain at least the following:

(1) One approved survivor locator light.

(2) One approved pyrotechnic signaling device.

(3) Either—

(i) One survival kit, appropriately equipped for the route to be flown; or

(ii) One canopy (for sail, sunshade, or rain catcher);

(iii) One radar reflector;

(iv) One liferaft repair kit;

(v) One bailing bucket;

(vi) One signaling mirror;

(vii) One police whistle;

(viii) One raft knife;

(ix) One CO₂ bottle for emergency inflation;

(x) One inflation pump;

(xi) Two oars;

(xii) One 75-foot retaining line;

(xiii) One magnetic compass;

(xiv) One dye marker;

(xv) One flashlight having at least two size “D” cells or equivalent;

(xvi) A 2-day supply of emergency food rations supplying at least 1,000 calories per day for each person;

(xvii) For each two persons the raft is rated to carry, two pints of water or one sea water desalting kit;

(xviii) One fishing kit; and

(xix) One book on survival appropriate for the area in which the aircraft is operated.

(c) No person may operate an airplane in extended overwater operations unless there is attached to one of the life rafts required by paragraph (a) of this section, an approved survival type emergency locator transmitter. Batteries used in this transmitter must be replaced (or recharged, if the batteries are rechargeable) when the transmitter has been in use for more than 1 cumulative hour, or, when 50 percent of their useful life (or for rechargeable batteries, 50 percent of their useful life of charge) has expired, as established by the transmitter manufacturer under its approval. The new expiration date for replacing (or recharging) the battery must be legibly marked on the outside of the transmitter. The battery useful life (or useful life of charge) requirements of this paragraph do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.


§ 135.169 Additional airworthiness requirements.

(a) Except for commuter category airplanes, no person may operate a large airplane unless it meets the additional airworthiness requirements of §§121.213 through 121.283 and 121.307 of this chapter.

(b) No person may operate a reciprocating-engine or turbopropeller-powered small airplane that has a passenger seating configuration, excluding pilot seats, of 10 seats or more unless it is type certificated—

(1) In the transport category;

(2) Before July 1, 1970, in the normal category and meets special conditions issued by the Administrator for airplanes intended for use in operations under this part;
(3) Before July 19, 1970, in the normal category and meets the additional airworthiness standards in Special Federal Aviation Regulation No. 23;

(4) In the normal category and meets the additional airworthiness standards in appendix A;

(5) In the normal category and complies with section 1(a) of Special Federal Aviation Regulation No. 41;

(6) In the normal category and complies with section 1(b) of Special Federal Aviation Regulation No. 41; or

(7) In the commuter category.

(c) No person may operate a small airplane with a passenger seating configuration, excluding any pilot seat, of 10 seats or more, with a seating configuration greater than the maximum seating configuration used in that type airplane in operations under this part before August 19, 1977. This paragraph does not apply to—

(1) An airplane that is type certificated in the transport category; or

(2) An airplane that complies with—

(i) Appendix A of this part provided that its passenger seating configuration, excluding pilot seats, does not exceed 19 seats; or

(ii) Special Federal Aviation Regulation No. 41.

(d) Cargo or baggage compartments:

(1) After March 20, 1991, each Class C or D compartment, as defined in §25.857 of part 25 of this chapter, greater than 200 cubic feet in volume in a transport category airplane type certificated after January 1, 1958, must have ceiling and sidewall panels which are constructed of:

(i) Glass fiber reinforced resin;

(ii) Materials which meet the test requirements of part 25, appendix F, part III of this chapter; or

(iii) In the case of liner installations approved prior to March 20, 1989, aluminum.

(2) For compliance with this paragraph, the term “liner” includes any design feature, such as a joint or fastener, which would affect the capability of the liner to safely contain a fire.

§ 135.171 Shoulder harness installation at flight crewmember stations.

(a) No person may operate a turbojet aircraft or an aircraft having a passenger seating configuration, excluding any pilot seat, of 10 seats or more unless it is equipped with an approved shoulder harness installed for each flight crewmember station.

(b) Each flight crewmember occupying a station equipped with a shoulder harness must fasten the shoulder harness during takeoff and landing, except that the shoulder harness may be unfastened if the crewmember cannot perform the required duties with the shoulder harness fastened.

§ 135.173 Airborne thunderstorm detection equipment requirements.

(a) No person may operate an aircraft that has a passenger seating configuration, excluding any pilot seat, of 10
§ 135.177 Emergency equipment requirements for aircraft having a passenger seating configuration of more than 19 passengers.

(a) No person may operate an aircraft having a passenger seating configuration, excluding any pilot seat, of more than 19 seats unless it is equipped with the following emergency equipment:

(1) One approved first aid kit for treatment of injuries likely to occur in flight or in a minor accident, which meets the following specifications and requirements:

(i) Each first aid kit must be dust and moisture proof, and contain only materials that either meet Federal Specifications GGK-319a, as revised, or as approved by the Administrator.
§ 135.178 Additional emergency equipment.

No person may operate an airplane having a passenger seating configuration of more than 19 seats, unless it has the additional emergency equipment specified in paragraphs (a) through (l) of this section.

(a) Means for emergency evacuation. Each passenger-carrying landplane emergency exit (other than over-the-wing) that is more than 6 feet from the ground, with the airplane on the ground and the landing gear extended, must have an approved means to assist the occupants in descending to the ground. The assisting means for a floor-level emergency exit must meet the requirements of § 25.809(f)(1) of this chapter in effect on April 30, 1972, except that, for any airplane for which the application for the type certificate was filed after that date, it must meet the requirements under which the airplane was type certificated. An assisting means that deploys automatically must be armed during taxiing, takeoffs, and landings; however, the Administrator may grant a deviation from the requirement of automatic deployment if he finds that the design of the exit makes compliance impractical, if the assisting means automatically erects upon deployment and, with respect to required emergency exits, if an emergency evacuation demonstration is conducted in accordance with § 121.291(a) of this chapter. This paragraph does not apply to the rear window emergency exit of Douglas DC-3 airplanes operated with fewer than 36 occupants, including crewmembers, and fewer than five exits authorized for passenger use.

(b) Each item of equipment must be inspected regularly under inspection periods established in the operations specifications to ensure its condition for continued serviceability and immediate readiness to perform its intended emergency purposes.

(i) Above the aisle near each over-the-wing passenger emergency exit, or at another ceiling location if it is more practical because of low headroom;

(ii) Next to each floor level passenger emergency exit, except that one sign may serve two such exits if they both can be seen readily from that sign; and

(iii) On each bulkhead or divider that prevents fore and aft vision along the passenger cabin, to indicate emergency exits beyond and obscured by it, except that if this is not possible, the sign may be placed at another appropriate location.

(2) Each passenger emergency exit marking and each locating sign must meet the following:

(i) For an airplane for which the application for the type certificate was filed prior to May 1, 1972, each passenger emergency exit marking and each locating sign must be manufactured to meet the requirements of §25.812(b) of this chapter in effect on April 30, 1972. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts. The colors may be reversed if it increases the emergency illumination of the passenger compartment. However, the Administrator may authorize deviation from the 2-inch background requirements if he finds that special circumstances exist that make compliance impractical and that the proposed deviation provides an equivalent level of safety.

(ii) For an airplane for which the application for the type certificate was filed on or after May 1, 1972, each passenger emergency exit marking and each locating sign must be manufactured to meet the interior emergency exit marking requirements under which the airplane was type certificated. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 250 microlamberts.

(c) Lighting for interior emergency exit markings. Each passenger-carrying airplane must have an emergency lighting system, independent of the main lighting system; however, sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system must—

(1) Illuminate each passenger exit marking and locating sign;

(2) Provide enough general lighting in the passenger cabin so that the average illumination when measured at 40-inch intervals at seat armrest height, on the centerline of the main passenger aisle, is at least 0.05 foot-candles; and

(3) For airplanes type certificated after January 1, 1988, include floor proximity emergency escape path marking which meets the requirements of §25.812(e) of this chapter in effect on November 26, 1984.

(d) Emergency light operation. Except for lights forming part of emergency lighting subsystems provided in compliance with §25.812(h) of this chapter (as prescribed in paragraph (h) of this section) that serve no more than one assist means, are independent of the airplane’s main emergency lighting systems, and are automatically activated when the assist means is deployed, each light required by paragraphs (c) and (h) of this section must:

(1) Be operable manually both from the flightcrew station and from a point in the passenger compartment that is readily accessible to a normal flight attendant seat;

(2) Have a means to prevent inadvertent operation of the manual controls;

(3) When armed or turned on at either station, remain lighted or become lighted upon interruption of the airplane’s normal electric power;

(4) Be armed or turned on during taxiing, takeoff, and landing. In showing compliance with this paragraph, a transverse vertical separation of the fuselage need not be considered;

(5) Provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing; and

(6) Have a cockpit control device that has an “on,” “off,” and “armed” position.

(e) Emergency exit operating handles.

(1) For a passenger-carrying airplane for which the application for the type certificate was filed prior to May 1, 1972, the location of each passenger emergency exit operating handle, and
instructions for opening the exit, must be shown by a marking on or near the exit that is readable from a distance of 30 inches. In addition, for each Type I and Type II emergency exit with a locking mechanism released by rotary motion of the handle, the instructions for opening must be shown by—

(i) A red arrow with a shaft at least three-fourths inch wide and a head twice the width of the shaft, extending along at least $70^\circ$ of arc at a radius approximately equal to three-fourths of the handle length; and

(ii) The word “open” in red letters 1 inch high placed horizontally near the head of the arrow.

(2) For a passenger-carrying airplane for which the application for the type certificate was filed on or after May 1, 1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the airplane was type certificated. On these airplanes, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

(f) Emergency exit access. Access to emergency exits must be provided as follows for each passenger-carrying airplane:

(1) Each passageway between individual passenger areas, or leading to a Type I or Type II emergency exit, must be unobstructed and at least 20 inches wide.

(2) There must be enough space next to each Type I or Type II emergency exit to allow a crewmember to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required in paragraph (f)(1) of this section; however, the Administrator may authorize deviation from this requirement for an airplane certificated under the provisions of part 4b of the Civil Air Regulations in effect before December 20, 1951, if he finds that special circumstances exist that provide an equivalent level of safety.

(3) There must be access from the main aisle to each Type III and Type IV exit. The access from the aisle to these exits must not be obstructed by seats, berths, or other protrusions in a manner that would reduce the effectiveness of the exit. In addition, for a transport category airplane type certificated after January 1, 1958, there must be placards installed in accordance with §25.813(c)(3) of this chapter for each Type III exit after December 3, 1992.

(4) If it is necessary to pass through a passageway between passenger compartments to reach any required emergency exit from any seat in the passenger cabin, the passageway must not be obstructed. Curtains may, however, be used if they allow free entry through the passageway.

(5) No door may be installed in any partition between passenger compartments.

(g) Exterior exit markings. Each passenger emergency exit and the means of opening that exit from the outside must be marked on the outside of the airplane. There must be a 2-inch colored band outlining each passenger emergency exit on the side of the fuselage. Each outside marking, including the band, must be readily distinguishable from the surrounding fuselage area by contrast in color. The markings must comply with the following:

(1) If the reflectance of the darker color is 15 percent or less, the reflectance of the lighter color must be at least 45 percent.

(2) If the reflectance of the darker color is greater than 15 percent, at least a 30 percent difference between its reflectance and the reflectance of the lighter color must be provided.

(3) Exits that are not in the side of the fuselage must have the external means of opening and applicable instructions marked conspicuously in red or, if red is inconspicuous against the
§ 135.179 Inoperable instruments and equipment.

(a) No person may take off an aircraft with inoperable instruments or equipment installed unless the following conditions are met:

(1) An approved Minimum Equipment List exists for that aircraft.

(2) The certificate-holding district office has issued the certificate holder operations specifications authorizing operations in accordance with an approved Minimum Equipment List. The flight crew shall have direct access at all times prior to flight to all of the information contained in the approved Minimum Equipment List through printed or other means approved by the Administrator in the certificate holder's operations specifications. An approved Minimum Equipment List, as authorized by the operations specifications, constitutes an approved change to the type design without requiring recertification.

(3) The approved Minimum Equipment List must:

(j) Additional emergency exits. Approved emergency exits in the passenger compartments that are in excess of the minimum number of required emergency exits must meet all of the applicable provisions of this section, except paragraphs (f) (1), (2), and (3) of this section, and must be readily accessible.

(k) On each large passenger-carrying turbojet-powered airplane, each ventral exit and tailcone exit must be—

(1) Designed and constructed so that it cannot be opened during flight; and

(2) Marked with a placard readable from a distance of 30 inches and installed at a conspicuous location near the means of opening the exit, stating that the exit has been designed and constructed so that it cannot be opened during flight.

(l) Portable lights. No person may operate a passenger-carrying airplane unless it is equipped with flashlight stowage provisions accessible from each flight attendant seat.

(a) Unless otherwise authorized by the Administrator, after December 31, 1995, no person may operate a turbine powered airplane that has a passenger seat configuration, excluding any pilot seat, of 10 to 30 seats unless it is equipped with an approved traffic alert and collision avoidance system. If a TCAS II system is installed, it must be capable of coordinating with TCAS units that meet TSO C-119.

(b) The airplane flight manual required by §135.21 of this part shall contain the following information on the TCAS I system required by this section:

(1) Appropriate procedures for—

(i) The use of the equipment; and

(ii) Proper flightcrew action with respect to the equipment operation.

(2) An outline of all input sources that must be operating for the TCAS to function properly.


§ 135.181 Performance requirements: Aircraft operated over-the-top or in IFR conditions.

(a) Except as provided in paragraphs (b) and (c) of this section, no person may—

(1) Operate a single-engine aircraft carrying passengers over-the-top; or

(2) Operate a multiengine aircraft carrying passengers over-the-top or in IFR conditions at a weight that will not allow it to climb, with the critical engine inoperative, at least 50 feet a minute when operating at the MEAs of the route to be flown or 5,000 feet MSL, whichever is higher.

(b) Notwithstanding the restrictions in paragraph (a)(2) of this section, multiengine helicopters carrying passengers offshore may conduct such operations in over-the-top or in IFR conditions at a weight that will allow the helicopter to climb at least 50 feet per minute with the critical engine inoperative when operating at the MEA of the route to be flown or 1,500 feet MSL, whichever is higher.

(c) Without regard to paragraph (a) of this section, if the latest weather reports or forecasts, or any combination of them, indicate that the weather along the planned route (including takeoff and landing) allows flight under VFR under the ceiling (if a ceiling exists) and that the weather is forecast to remain so until at least 1 hour after the estimated time of arrival at the destination, a person may operate an aircraft over-the-top.

(d) Without regard to paragraph (a) of this section, a person may operate an aircraft over-the-top under conditions allowing—
§ 135.209 VFR: Fuel supply.
(a) No person may begin a flight operation in an airplane under VFR unless, considering wind and forecast weather conditions, it has enough fuel to fly to the first point of intended landing and, assuming normal cruising fuel consumption—
§ 135.211

(1) During the day, to fly after that for at least 30 minutes; or
(2) At night, to fly after that for at least 45 minutes.

(b) No person may begin a flight operation in a helicopter under VFR unless, considering wind and forecast weather conditions, it has enough fuel to fly to the first point of intended landing and, assuming normal cruising fuel consumption, to fly after that for at least 20 minutes.

§ 135.211 VFR: Over-the-top carrying passengers: Operating limitations.

Subject to any additional limitations in § 135.181, no person may operate an aircraft under VFR over-the-top carrying passengers, unless—

(a) Weather reports or forecasts, or any combination of them, indicate that the weather at the intended point of termination of over-the-top flight—

(1) Allows descent to beneath the ceiling under VFR and is forecast to remain so until at least 1 hour after the estimated time of arrival at that point; or

(2) Allows an IFR approach and landing with flight clear of the clouds until reaching the prescribed initial approach altitude over the final approach facility, unless the approach is made with the use of radar under § 91.175(f) of this chapter; or

(b) It is operated under conditions allowing—

(1) For multiengine aircraft, descent or continuation of the flight under VFR if its critical engine fails; or

(2) For single-engine aircraft, descent under VFR if its engine fails.

§ 135.215 IFR: Operating limitations.

(a) Except as provided in paragraphs (b), (c) and (d) of this section, no person may operate an aircraft under IFR outside of controlled airspace or at any airport that does not have an approved standard instrument approach procedure.

(b) The Administrator may issue operations specifications to the certificate holder to allow it to operate under IFR over routes outside controlled airspace if—

(1) The certificate holder shows the Administrator that the flight crew is able to navigate, without visual reference to the ground, over an intended track without deviating more than 5 degrees or 5 miles, whichever is less, from that track; and

(2) The Administrator determines that the proposed operations can be conducted safely.

(c) A person may operate an aircraft under IFR outside of controlled airspace if the certificate holder has been approved for the operations and that operation is necessary to—

(1) Conduct an instrument approach to an airport for which there is in use
§ 135.225 IFR: Takeoff, approach and landing minimums.

(a) No pilot may begin an instrument approach procedure to an airport unless—

(1) That airport has a weather reporting facility operated by the U.S. National Weather Service, a source approved by U.S. National Weather Service, or a source approved by the Administrator; and

(2) The appropriate instrument approach procedure to be used at the destination airport.

§ 135.227 Icing conditions: Operating limitations.

(a) No pilot may take off an aircraft that has frost, ice, or snow adhering to any rotor blade, propeller, windshield, wing, stabilizing or control surface, or to a powerplant installation, or to an airspeed, altimeter, rate of climb, or

(b) No pilot may begin the final approach segment of an instrument approach procedure to an airport unless the latest weather reported by the facility described in paragraph (a)(1) of this section indicates that weather conditions are at or above the authorized IFR landing minimums for that procedure.

(c) If a pilot has begun the final approach segment of an instrument approach to an airport under paragraph (b) of this section and a later weather report indicating below minimum conditions is received after the aircraft is—

(1) On an ILS final approach and has passed the final approach fix; or

(2) On an ASR or PAR final approach and has been turned over to the final approach controller; or

(3) On a final approach using a VOR, NDB, or comparable approach procedure; and the aircraft—

(i) Has passed the appropriate facility or final approach fix; or

(ii) Where a final approach fix is not specified, has completed the procedure turn and is established inbound toward the airport on the final approach course within the distance prescribed in the procedure; the approach may be continued and a landing made if the pilot finds, upon reaching the authorized MDA or DH, that actual weather conditions are at least equal to the minimums prescribed for the procedure.

(d) The MDA or DH and visibility landing minimums prescribed in part 97 of this chapter or in the operator’s operations specifications are increased by 100 feet and ¼ mile respectively, but not to exceed the ceiling and visibility minimums for that airport when used as an alternate airport, for each pilot in command of a turbine-powered airplane who has not served at least 100 hours as pilot in command in that type of airplane.

(e) Each pilot making an IFR takeoff or approach and landing at a military or foreign airport shall comply with applicable instrument approach procedures and weather minimums prescribed by the authority having jurisdiction over that airport. In addition, no pilot may, at that airport—

(1) Take off under IFR when the visibility is less than 1 mile; or

(2) Make an instrument approach when the visibility is less than ½ mile.

(f) If takeoff minimums are specified in part 97 of this chapter for the takeoff airport, no pilot may take off an aircraft under IFR when the weather conditions reported by the facility described in paragraph (a)(1) of this section are less than the takeoff minimums specified for the takeoff airport in part 97 or in the certificate holder’s operations specifications.

(g) Except as provided in paragraph (h) of this section, if takeoff minimums are not prescribed in part 97 of this chapter for the takeoff airport, no pilot may take off an aircraft under IFR when the weather conditions reported by the facility described in paragraph (a)(1) of this section are less than that prescribed in part 91 of this chapter or in the certificate holder’s operations specifications.

(h) At airports where straight-in instrument approach procedures are authorized, a pilot may takeoff an aircraft under IFR when the weather conditions reported by the facility described in paragraph (a)(1) of this section are equal to or better than the lowest straight-in landing minimums, unless otherwise restricted, if—

(1) The wind direction and velocity at the time of takeoff are such that a straight-in instrument approach can be made to the runway served by the instrument approach;

(2) The associated ground facilities upon which the landing minimums are predicated and the related airborne equipment are in normal operation; and

(3) The certificate holder has been approved for such operations.
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§ 135.241 Applicability.

Except as provided in §135.3, this subpart prescribes the flight crewmember

(e) Except for an airplane that has ice protection provisions that meet section 34 of appendix A, or those for transport category airplane type certification, no pilot may fly an aircraft into known or forecast severe icing conditions.

(f) If current weather reports and briefing information relied upon by the pilot in command indicate that the forecast icing condition that would otherwise prohibit the flight will not be encountered during the flight because of changed weather conditions since the forecast, the restrictions in paragraphs (c), (d), and (e) of this section based on forecast conditions do not apply.


§ 135.229 Airport requirements.

(a) No certificate holder may use any airport unless it is adequate for the proposed operation, considering such items as size, surface, obstructions, and lighting.

(b) No pilot of an aircraft carrying passengers at night may takeoff from, or land on, an airport unless—

(1) That pilot has determined the wind direction from an illuminated wind direction indicator or local ground communications or, in the case of takeoff, that pilot’s personal observations; and

(2) The limits of the area to be used for landing or takeoff are clearly shown—

(i) For airplanes, by boundary or runway marker lights;

(ii) For helicopters, by boundary or runway marker lights or reflective material.

(c) For the purpose of paragraph (b) of this section, if the area to be used for takeoff or landing is marked by flare pots or lanterns, their use must be approved by the Administrator.

Subpart E—Flight Crewmember Requirements

§ 135.241 Applicability.

Except as provided in §135.3, this subpart prescribes the flight crewmember

(e) Except for an airplane that has ice protection provisions that meet section 34 of appendix A, or those for transport category airplane type certification, no pilot may fly an aircraft into known or forecast severe icing conditions.

(f) If current weather reports and briefing information relied upon by the pilot in command indicate that the forecast icing condition that would otherwise prohibit the flight will not be encountered during the flight because of changed weather conditions since the forecast, the restrictions in paragraphs (c), (d), and (e) of this section based on forecast conditions do not apply.

§ 135.243 Pilot in command qualifications.

(a) No certificate holder may use a person, nor may any person serve, as pilot in command in passenger-carrying operations—

(1) Of a turbojet airplane, of an airplane having a passenger-seat configuration, excluding each crewmember seat, of 10 seats or more, or of a multi-engine airplane in a commuter operation as defined in part 119 of this chapter, unless that person holds an airline transport pilot certificate with appropriate category and class ratings and, if required, an appropriate type rating for that airplane.

(2) Of a helicopter in a scheduled interstate air transportation operation by an air carrier within the 48 contiguous states unless that person holds an airline transport pilot certificate with appropriate category and class ratings and, if required, an instrument rating.

(b) Except as provided in paragraph (a) of this section, no certificate holder may use a person, nor may any person serve, as pilot in command of an aircraft under VFR unless that person—

(1) Holds at least a commercial pilot certificate with appropriate category and class ratings and, if required, an appropriate type rating for that aircraft; and

(2) Has had at least 500 hours of flight time as a pilot, including 500 hours of cross-country flight time, and 100 hours of night flight time, and 75 hours of actual or simulated instrument time at least 50 hours of which were in actual flight; and

(3) For an airplane, holds an instrument rating or an airline transport pilot certificate with an airplane category rating; or

(4) For a helicopter, holds a helicopter instrument rating, or an airline transport pilot certificate with a category and class rating for that aircraft, not limited to VFR.

(d) Paragraph (b)(3) of this section does not apply when—

(1) The aircraft used is a single reciprocating-engine-powered airplane;

(2) The certificate holder does not conduct any operation pursuant to a published flight schedule which specifies five or more round trips a week between two or more points and places between which the round trips are performed, and does not transport mail by air under a contract or contracts with the United States Postal Service having total amount estimated at the beginning of any semiannual reporting period (January 1-June 30; July 1-December 31) to be in excess of $20,000 over the 12 months commencing with the beginning of the reporting period;

(3) The area, as specified in the certificate holder’s operations specifications, is an isolated area, as determined by the Flight Standards district office, if it is shown that—

(i) The primary means of navigation in the area is by pilotage, since radio navigational aids are largely ineffective; and

(ii) The primary means of transportation in the area is by air;

(4) Each flight is conducted under day VFR with a ceiling of not less than 1,000 feet and visibility not less than 3 statute miles;

(5) Weather reports or forecasts, or any combination of them, indicate that for the period commencing with the
planned departure and ending 30 minutes after the planned arrival at the destination the flight may be conducted under VFR with a ceiling of not less than 1,000 feet and visibility of not less than 3 statute miles, except that if weather reports and forecasts are not available, the pilot in command may use that pilot’s observations or those of other persons competent to supply weather observations if those observations indicate the flight may be conducted under VFR with the ceiling and visibility required in this paragraph;

(6) The distance of each flight from the certificate holder’s base of operation to destination does not exceed 250 nautical miles for a pilot who holds a commercial pilot certificate with an airplane rating without an instrument rating, provided the pilot’s certificate does not contain any limitation to the contrary; and

(7) The areas to be flown are approved by the certificate-holding FAA Flight Standards district office and are listed in the certificate holder’s operations specifications.

§ 135.244 Operating experience.

(a) No certificate holder may use any person, nor may any person serve, as a pilot in command of an aircraft operated in a commuter operation, as defined in part 119 of this chapter unless that person has completed, prior to designation as pilot in command, on that make and basic model aircraft and in that crewmember position, the following operating experience in each make and basic model of aircraft to be flown:

(1) Aircraft, single engine—10 hours.

(2) Aircraft multiengine, reciprocating engine-powered—15 hours.

(3) Aircraft multiengine, turbine engine-powered—20 hours.

(4) Airplane, turbojet-powered—25 hours.

(b) In acquiring the operating experience, each person must comply with the following:

(1) The operating experience must be acquired after satisfactory completion of the appropriate ground and flight training for the aircraft and crewmember position. Approved provisions for the operating experience must be included in the certificate holder’s training program.

(2) The experience must be acquired in flight during commuter passenger-carrying operations under this part. However, in the case of an aircraft not previously used by the certificate holder in operations under this part, operating experience acquired in the aircraft during proving flights or ferry flights may be used to meet this requirement.

(3) Each person must acquire the operating experience while performing the duties of a pilot in command under the supervision of a qualified check pilot.

(4) The hours of operating experience may be reduced to not less than 50 percent of the hours required by this section by the substitution of one additional takeoff and landing for each hour of flight.

§ 135.245 Second in command qualifications.

(a) Except as provided in paragraph (b), no certificate holder may use any person, nor may any person serve, as second in command of an aircraft unless that person holds at least a commercial pilot certificate with appropriate category and class ratings and an instrument rating. For flight under IFR, that person must meet the recent instrument experience requirements of part 61 of this chapter.

(b) A second in command of a helicopter operated under VFR, other than over-the-top, must have at least a commercial pilot certificate with an appropriate aircraft category and class rating.

§ 135.247 Pilot qualifications: Recent experience.

(a) No certificate holder may use any person, nor may any person serve, as pilot in command of an aircraft carrying passengers unless, within the preceding 90 days, that person has—
§ 135.249 Use of prohibited drugs.

(a) This section applies to persons who perform a function listed in appendix I to part 121 of this chapter for a certificate holder or an operator. For the purpose of this section, a person who meets the definition of covered employee in appendix J is considered to be performing the function for the certificate holder or operator.

(b) Alcohol concentration. No covered employee shall report for duty or remain on duty requiring the performance of safety-sensitive functions while having an alcohol concentration of 0.04 or greater. No certificate holder or operator having actual knowledge that an employee has an alcohol concentration of 0.04 or greater shall permit the employee to perform or continue to perform safety-sensitive functions.

(c) On-duty use. No covered employee shall use alcohol while performing safety-sensitive functions. No certificate holder or operator having actual knowledge that a covered employee is using alcohol while performing safety-sensitive functions shall permit the employee to perform or continue to perform safety-sensitive functions.

(d) Pre-duty use. (1) No covered employee shall perform flight crew-member or flight attendant duties within 8 hours after using alcohol. No certificate holder or operator having
actual knowledge that such an employee has used alcohol within 8 hours shall permit the employee to perform or continue to perform the specified duties.

(2) No covered employee shall perform safety-sensitive duties other than those specified in paragraph (d)(1) of this section within 4 hours after using alcohol. No certificate holder or operator having actual knowledge that such an employee has used alcohol within 4 hours shall permit the employee to perform or continue to perform safety-sensitive functions.

(e) Use following an accident. No covered employee who has actual knowledge of an accident involving an aircraft for which he or she performed a safety-sensitive function at or near the time of the accident shall use alcohol for 8 hours following the accident, unless he or she has been given a post-accident test under appendix J of part 121 of this chapter, or the employer has determined that the employee’s performance could not have contributed to the accident.

(f) Refusal to submit to a required alcohol test. No covered employee shall refuse to submit to a post-accident, random, reasonable suspicion, or follow-up alcohol test required under appendix J to part 121 of this chapter. No operator or certificate holder shall permit a covered employee who refuses to submit to such a test to perform or continue to perform safety-sensitive functions.


§ 135.255 Testing for alcohol.

(a) Each certificate holder and operator must establish an alcohol misuse prevention program in accordance with the provisions of appendix J to part 121 of this chapter.

(b) No certificate holder or operator shall use any person who meets the definition of “covered employee” in appendix J to part 121 to perform a safety-sensitive function listed in that appendix unless such person is subject to testing for alcohol misuse in accordance with the provisions of appendix J.


Subpart F—Crewmember Flight Time and Duty Period Limitations and Rest Requirements

§ 135.261 Applicability.

Sections 135.263 through 135.273 of this part prescribe flight time limitations, duty period limitations, and rest requirements for operations conducted under this part as follows:

(a) Section 135.263 applies to all operations under this part.

(b) Section 135.265 applies to:

(1) Scheduled passenger-carrying operations except those conducted solely within the state of Alaska. “Scheduled passenger-carrying operations” means passenger-carrying operations that are conducted in accordance with a published schedule which covers at least five round trips per week on at least one route between two or more points, includes dates or times (or both), and is openly advertised or otherwise made readily available to the general public, and

(2) Any other operation under this part, if the operator elects to comply with §135.265 and obtains an appropriate operations specification amendment.

(c) Sections 135.267 and 135.269 apply to any operation that is not a scheduled passenger-carrying operation and to any operation conducted solely within the State of Alaska, unless the operator elects to comply with §135.265 as authorized under paragraph (b)(2) of this section.

(d) Section 135.271 contains special daily flight time limits for operations conducted under the helicopter emergency medical evacuation service (HEMES).

(e) Section 135.273 prescribes duty period limitations and rest requirements for flight attendants in all operations conducted under this part.

§ 135.263 Flight time limitations and rest requirements: All certificate holders.

(a) A certificate holder may assign a flight crewmember and a flight crewmember may accept an assignment for flight time only when the applicable requirements of §§135.263 through 135.271 are met.

(b) No certificate holder may assign any flight crewmember to any duty with the certificate holder during any required rest period.

(c) Time spent in transportation, not local in character, that a certificate holder requires of a flight crewmember and provides to transport the crewmember to an airport at which he is to serve on a flight as a crewmember, or from an airport at which he was relieved from duty to return to his home station, is not considered part of a rest period.

(d) A flight crewmember is not considered to be assigned flight time in excess of flight time limitations if the flights to which he is assigned normally terminate within the limitations, but due to circumstances beyond the control of the certificate holder or flight crewmember (such as adverse weather conditions), are not at the time of departure expected to reach their destination within the planned flight time.

§ 135.265 Flight time limitations and rest requirements: Scheduled operations.

(a) No certificate holder may schedule any flight crewmember, and no flight crewmember may accept an assignment, for flight time in excess of flight time limitations if the flights to which he is assigned normally terminate within the limitations, but due to circumstances beyond the control of the certificate holder or flight crewmember (such as adverse weather conditions), are not at the time of departure expected to reach their destination within the planned flight time.

(b) Except as provided in paragraph (c) of this section, no certificate holder may schedule a flight crewmember, and no flight crewmember may accept an assignment, for flight time during the 24 consecutive hours preceding the scheduled completion of any flight segment without a scheduled rest period during that 24 hours of at least the following:

(1) 9 consecutive hours of rest for less than 8 hours of scheduled flight time.

(2) 10 consecutive hours of rest for 8 or more but less than 9 hours of scheduled flight time.

(3) 11 consecutive hours of rest for 9 or more hours of scheduled flight time.

(c) A certificate holder may schedule a flight crewmember for less than the rest required in paragraph (b) of this section or may reduce a scheduled rest under the following conditions:

(1) A rest required under paragraph (b)(1) of this section may be scheduled for or reduced to a minimum of 8 hours if the flight crewmember is given a rest period of at least 10 hours that must begin no later than 24 hours after the commencement of the reduced rest period.

(2) A rest required under paragraph (b)(2) of this section may be scheduled for or reduced to a minimum of 8 hours if the flight crewmember is given a rest period of at least 11 hours that must begin no later than 24 hours after the commencement of the reduced rest period.

(3) A rest required under paragraph (b)(3) of this section may be scheduled for or reduced to a minimum of 9 hours if the flight crewmember is given a rest period of at least 12 hours that must begin no later than 24 hours after the commencement of the reduced rest period.

(d) Each certificate holder shall relieve each flight crewmember engaged in scheduled air transportation from all further duty for at least 24 consecutive hours during any 7 consecutive days.

§ 135.267 Flight time limitations and rest requirements: Unscheduled one- and two-pilot crews.

(a) No certificate holder may assign any flight crewmember, and no flight crewmember may accept an assignment, for flight time as a member of a
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§ 135.269 Flight time limitations and rest requirements: Unscheduled three- and four-pilot crews.

(a) No certificate holder may assign any flight crewmember, and no flight crewmember may accept an assignment, for flight time as a member of a three- or four-pilot crew if that crewmember’s total flight time in all commercial flying will exceed—

(1) 500 hours in any calendar quarter.
(2) 800 hours in any two consecutive calendar quarters.
(3) 1,400 hours in any calendar year.

(b) No certificate holder may assign any pilot to a crew of three or four pilots, unless that assignment provides—

(1) At least 10 consecutive hours of rest immediately preceding the assignment;
(2) No more than 8 hours of flight deck duty in any 24 consecutive hours;
(3) No more than 18 duty hours for a three-pilot crew or 20 duty hours for a four-pilot crew in any 24 consecutive hours;
(4) No more than 12 hours aloft for a three-pilot crew or 16 hours aloft for a four-pilot crew during the maximum duty hours specified in paragraph (b)(3) of this section;
(5) Adequate sleeping facilities on the aircraft for the relief pilot;
(6) Upon completion of the assignment, a rest period of at least 12 hours;
(7) For a three-pilot crew, a crew which consists of at least the following:

(i) A pilot in command (PIC) who meets the applicable flight crewmember requirements of subpart E of part 135;

(2) 12 consecutive hours of rest if the flight time limitation is exceeded by more than 30 minutes, but not more than 60 minutes; and
(3) 16 consecutive hours of rest if the flight time limitation is exceeded by more than 60 minutes.
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(ii) A PIC who meets the applicable flight crewmember requirements of subpart E of part 135, except those prescribed in §§135.244 and 135.247; and

(iii) A second in command (SIC) who meets the SIC qualifications of §135.245.

(b) For a four-pilot crew, at least three pilots who meet the conditions of paragraph (b)(7) of this section, plus a fourth pilot who meets the SIC qualifications of §135.245.

(c) When a flight crewmember has exceeded the daily flight deck duty limitation in this section by more than 60 minutes, because of circumstances beyond the control of the certificate holder or flight crewmember, that flight crewmember must have a rest period before the next duty period of at least 16 consecutive hours.

(d) A certificate holder must provide each flight crewmember at least 13 rest periods of at least 24 consecutive hours each in each calendar quarter.

§ 135.271 Helicopter hospital emergency medical evacuation service (HEMES).

(a) No certificate holder may assign any flight crewmember, and no flight crewmember may accept an assignment for flight time if that crewmember's total flight time in all commercial flight will exceed—

(1) 500 hours in any calendar quarter.

(2) 800 hours in any two consecutive calendar quarters.

(3) 1,400 hours in any calendar year.

(b) No certificate holder may assign a helicopter flight crewmember, and no flight crewmember may accept an assignment, for hospital emergency medical evacuation service helicopter operations unless that assignment provides for at least 10 consecutive hours of rest immediately preceding reporting to the hospital for availability for flight time.

(c) No flight crewmember may accrue more than 8 hours of flight time during any 24 consecutive hour period of a HEMES assignment, unless an emergency medical evacuation operation is prolonged. Each flight crewmember who exceeds the daily 8 hour flight time limitation in this paragraph must be relieved of the HEMES assignment immediately upon the completion of that emergency medical evacuation operation and must be given a rest period in compliance with paragraph (h) of this section.

(d) Each flight crewmember must receive at least 8 consecutive hours of rest during any 24 consecutive hour period of a HEMES assignment. A flight crewmember must be relieved of the HEMES assignment if he or she has not or cannot receive at least 8 consecutive hours of rest during any 24 consecutive hour period of a HEMES assignment.

(e) A HEMES assignment may not exceed 72 consecutive hours at the hospital.

(f) An adequate place of rest must be provided at, or in close proximity to, the hospital at which the HEMES assignment is being performed.

(g) No certificate holder may assign any other duties to a flight crewmember during a HEMES assignment.

(h) Each pilot must be given a rest period upon completion of the HEMES assignment and prior to being assigned any further duty with the certificate holder of—

(1) At least 12 consecutive hours for an assignment of less than 48 hours.

(2) At least 16 consecutive hours for an assignment of more than 48 hours.

(i) The certificate holder must provide each flight crewmember at least 13 rest periods of at least 24 consecutive hours each in each calendar quarter.

§ 135.273 Duty period limitations and rest time requirements.

(a) For purposes of this section—

Calendar day means the period of elapsed time, using Coordinated Universal Time or local time, that begins at midnight and ends 24 hours later at the next midnight.

Duty period means the period of elapsed time between reporting for an assignment involving flight time and release from that assignment by the certificate holder. The time is calculated using either Coordinated Universal Time or local time to reflect the total elapsed time.

Flight attendant means an individual, other than a flight crewmember, who is assigned by the certificate holder, in accordance with the required minimum crew complement under the certificate holder's operations specifications or in
addition to that minimum complement, to duty in an aircraft during flight time and whose duties include but are not necessarily limited to cabin-safety-related responsibilities.

Rest period means the period free of all responsibility for work or duty should the occasion arise.

(b) Except as provided in paragraph (c) of this section, a certificate holder may assign a duty period to a flight attendant only when the applicable duty period limitations and rest requirements of this paragraph are met.

1 Except as provided in paragraphs (b)(4), (b)(5), and (b)(6) of this section, no certificate holder may assign a flight attendant to a scheduled duty period of more than 14 hours.

2 Except as provided in paragraph (b)(3) of this section, a flight attendant scheduled to a duty period of 14 hours or less as provided under paragraph (b)(1) of this section must be given a scheduled rest period of at least 9 consecutive hours. This rest period must occur between the completion of the scheduled duty period and the commencement of the subsequent duty period.

3 The rest period required under paragraph (b)(2) of this section may be scheduled or reduced to 8 consecutive hours if the flight attendant is provided a subsequent rest period of at least 10 consecutive hours; this subsequent rest period must be scheduled to begin no later than 24 hours after the beginning of the reduced rest period and must occur between the completion of the scheduled duty period and the commencement of the subsequent duty period.

4 A certificate holder may assign a flight attendant to a scheduled duty period of more than 14 hours, but no more than 16 hours, if the certificate holder has assigned to the flight or flights in that duty period at least two flight attendants in addition to the minimum flight attendant complement required for the flight or flights in that duty period under the certificate holder’s operations specifications.

5 A certificate holder may assign a flight attendant to a scheduled duty period of more than 16 hours, but no more than 18 hours, if the certificate holder has assigned to the flight or flights in that duty period at least two flight attendants in addition to the minimum flight attendant complement required for the flight or flights in that duty period under the certificate holder’s operations specifications.

6 A certificate holder may assign a flight attendant to a scheduled duty period of more than 18 hours, but no more than 20 hours, if the scheduled duty period includes one or more flights that land or take off outside the 48 contiguous states and the District of Columbia, and if the certificate holder has assigned to the flight or flights in that duty period at least three flight attendants in addition to the minimum flight attendant complement required for the flight or flights in that duty period under the certificate holder’s operations specifications.

7 Except as provided in paragraph (b)(8) of this section, a flight attendant scheduled to a duty period of more than 14 hours but no more than 20 hours, as provided in paragraphs (b)(4), (b)(5), and (b)(6) of this section, must be given a scheduled rest period of at least 12 consecutive hours. This rest period must occur between the completion of the scheduled duty period and the commencement of the subsequent duty period.

8 The rest period required under paragraph (b)(7) of this section may be scheduled or reduced to 10 consecutive hours if the flight attendant is provided a subsequent rest period of at least 14 consecutive hours; this subsequent rest period must be scheduled to begin no later than 24 hours after the beginning of the reduced rest period and must occur between the completion of the scheduled duty period and the commencement of the subsequent duty period.

9 Notwithstanding paragraphs (b)(4), (b)(5), and (b)(6) of this section, if a certificate holder elects to reduce the rest period to 10 hours as authorized by paragraph (b)(8) of this section, the certificate holder may not schedule a flight attendant for a duty period of more than 14 hours during the 24-hour period commencing after the beginning of the reduced rest period.

10 No certificate holder may assign a flight attendant any duty period with the certificate holder unless the flight
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attendant has had at least the minimum rest required under this section.

(11) No certificate holder may assign a flight attendant to perform any duty with the certificate holder during any required rest period.

(12) Time spent in transportation, not local in character, that a certificate holder requires of a flight attendant and provides to transport the flight attendant to an airport at which that flight attendant is to serve on a flight as a crewmember, or from an airport at which the flight attendant was relieved from duty to return to the flight attendant’s home station, is not considered part of a rest period.

(13) Each certificate holder must relieve each flight attendant engaged in air transportation from all further duty for at least 24 consecutive hours during any 7 consecutive calendar days.

(14) A flight attendant is not considered to be scheduled for duty in excess of duty period limitations if the flights to which the flight attendant is assigned are scheduled and normally terminate within the limitations but due to circumstances beyond the control of the certificate holder (such as adverse weather conditions) are not at the time of departure expected to reach their destination within the scheduled time.

(c) Notwithstanding paragraph (b) of this section, a certificate holder may apply the flight crewmember flight time and duty limitations and rest requirements of this part to flight attendants for all operations conducted under this part provided that—

(1) The certificate holder establishes written procedures that—

(i) Apply to all flight attendants used in the certificate holder's operation;

(ii) Include the flight crewmember requirements contained in subpart F of this part, as appropriate to the operation being conducted, except that rest facilities on board the aircraft are not required; and

(iii) Include provisions to add one flight attendant to the minimum flight attendant complement for each flight crewmember who is in excess of the minimum number required in the aircraft type certificate data sheet and who is assigned to the aircraft under the provisions of subpart F of this part, as applicable.

(iv) Are approved by the Administrator and described or referenced in the certificate holder’s operations specifications; and

(2) Whenever the Administrator finds that revisions are necessary for the continued adequacy of duty period limitation and rest requirement procedures that are required by paragraph (c)(1) of this section and that had been granted final approval, the certificate holder must, after notification by the Administrator, make any changes in the procedures that are found necessary by the Administrator. Within 30 days after the certificate holder receives such notice, it may file a petition to reconsider the notice with the certificate-holding district office. The filing of a petition to reconsider stays the notice, pending decision by the Administrator. However, if the Administrator finds that there is an emergency that requires immediate action in the interest of safety, the Administrator may, upon a statement of the reasons, require a change effective without stay.


Subpart G—Crewmember Testing Requirements

§ 135.291 Applicability.

Except as provided in §135.3, this subpart—

(a) Prescribes the tests and checks required for pilot and flight attendant crewmembers and for the approval of check pilots in operations under this part; and

(b) Permits training center personnel authorized under part 142 of this chapter who meet the requirements of §135.337 and §135.339 to provide training, testing, and checking under contract or other arrangement to those persons subject to the requirements of this subpart.

[Doc. No. 26933, 61 FR 34561, July 2, 1996]
§ 135.293 Initial and recurrent pilot testing requirements.

(a) No certificate holder may use a pilot, nor may any person serve as a pilot, unless, since the beginning of the 12th calendar month before that service, that pilot has passed a written or oral test, given by the Administrator or an authorized check pilot, on that pilot’s knowledge in the following areas—

(1) The appropriate provisions of parts 61, 91, and 135 of this chapter and the operations specifications and the manual of the certificate holder;

(2) For each type of aircraft to be flown by the pilot, the aircraft power-plant, major components and systems, major appliances, performance and operating limitations, standard and emergency operating procedures, and the contents of the approved Aircraft Flight Manual or equivalent, as applicable;

(3) For each type of aircraft to be flown by the pilot, the method of determining compliance with weight and balance limitations for takeoff, landing and en route operations;

(4) Navigation and use of air navigation aids appropriate to the operation or pilot authorization, including, when applicable, instrument approach facilities and procedures;

(5) Air traffic control procedures, including IFR procedures when applicable;

(6) Meteorology in general, including the principles of frontal systems, icing, fog, thunderstorms, and windshear, and, if appropriate for the operation of the certificate holder, high altitude weather;

(7) Procedures for—

(i) Recognizing and avoiding severe weather situations;

(ii) Escaping from severe weather situations, in case of inadvertent encounters, including low-altitude windshear (except that rotorcraft pilots are not required to be tested on escaping from low-altitude windshear); and

(iii) Operating in or near thunderstorms (including best penetrating altitudes), turbulent air (including clear air turbulence), icing, hail, and other potentially hazardous meteorological conditions; and

(8) New equipment, procedures, or techniques, as appropriate.

(b) No certificate holder may use a pilot, nor may any person serve as a pilot, in any aircraft unless, since the beginning of the 12th calendar month before that service, that pilot has passed a competency check given by the Administrator or an authorized check pilot in that class of aircraft, if single-engine airplane other than turbojet, or that type of aircraft, if helicopter, multiengine airplane, or turbojet airplane, to determine the pilot’s competence in practical skills and techniques in that aircraft or class of aircraft. The extent of the competency check shall be determined by the Administrator or authorized check pilot conducting the competency check. The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate required for the operations authorized and appropriate to the category, class and type of aircraft involved. For the purposes of this paragraph, type, as to an airplane, means any one of a group of airplanes determined by the Administrator to have a similar means of propulsion, the same manufacturer, and no significantly different handling or flight characteristics. For the purposes of this paragraph, type, as to a helicopter, means a basic make and model.

(c) The instrument proficiency check required by §135.297 may be substituted for the competency check required by this section for the type of aircraft used in the check.

(d) For the purpose of this part, competent performance of a procedure or maneuver by a person to be used as a pilot requires that the pilot be the obvious master of the aircraft, with the successful outcome of the maneuver never in doubt.

(e) The Administrator or authorized check pilot certifies the competency of each pilot who passes the knowledge or flight check in the certificate holder’s pilot records.
§ 135.295 Initial and recurrent flight attendant crewmember testing requirements.

No certificate holder may use a flight attendant crewmember, nor may any person serve as a flight attendant crewmember unless, since the beginning of the 12th calendar month before that service, the certificate holder has determined by appropriate initial and recurrent testing that the person is knowledgeable and competent in the following areas as appropriate to assigned duties and responsibilities—

(a) Authority of the pilot in command;

(b) Passenger handling, including procedures to be followed in handling deranged persons or other persons whose conduct might jeopardize safety;

(c) Crewmember assignments, functions, and responsibilities during ditching and evacuation of persons who may need the assistance of another person to move expeditiously to an exit in an emergency;

(d) Briefing of passengers;

(e) Location and operation of portable fire extinguishers and other items of emergency equipment;

(f) Proper use of cabin equipment and controls;

(g) Location and operation of passenger oxygen equipment;

(h) Location and operation of all normal and emergency exits, including evacuation chutes and escape ropes; and

(i) Seating of persons who may need assistance of another person to move rapidly to an exit in an emergency as prescribed by the certificate holder's operations manual.

§ 135.297 Pilot in command: Instrument proficiency check requirements.

(a) No certificate holder may use a pilot, nor may any person serve, as a pilot in command of an aircraft under IFR unless, since the beginning of the 6th calendar month before that service, that pilot has passed an instrument proficiency check under this section administered by the Administrator or an authorized check pilot.

(b) No pilot may use any type of precision instrument approach procedure under IFR unless, since the beginning of the 6th calendar month before that use, the pilot has satisfactorily demonstrated that type of approach procedure. No pilot may use any type of non-precision instrument approach procedure under IFR unless, since the beginning of the 6th calendar month before that use, the pilot has satisfactorily demonstrated either that type of approach procedure or any other two different types of non-precision instrument approach procedures. The instrument instrument approach procedure or procedures must include at least one straight-in approach, one circling approach, and one missed approach. Each type of approach procedure demonstrated must be conducted to published minimums for that procedure.

(c) The instrument proficiency check required by paragraph (a) of this section consists of an oral or written equipment test and a flight check under simulated or actual IFR conditions. The equipment test includes questions on emergency procedures, engine operation, fuel and lubrication systems, power settings, stall speeds, best engine-out speed, propeller and supercharger operations, and hydraulic, mechanical, and electrical systems, as appropriate. The flight check includes navigation by instruments, recovery from simulated emergencies, and standard instrument approaches involving navigational facilities which that pilot is to be authorized to use. Each pilot taking the instrument proficiency check must show that standard of competence required by §135.293(d).

(1) The instrument proficiency check must—

(i) For a pilot in command of an airplane under §135.243(a), include the procedures and maneuvers for an airline transport pilot certificate in the particular type of airplane, if appropriate; and

(ii) For a pilot in command of an airplane or helicopter under §135.243(c), include the procedures and maneuvers
for a commercial pilot certificate with an instrument rating and, if required, for the appropriate type rating.

(2) The instrument proficiency check must be given by an authorized check airman or by the Administrator.

(d) If the pilot in command is assigned to pilot only one type of aircraft, that pilot must take the instrument proficiency check required by paragraph (a) of this section in that type of aircraft.

(e) If the pilot in command is assigned to pilot more than one type of aircraft, that pilot must take the instrument proficiency check required by paragraph (a) of this section in each type of aircraft to which that pilot is assigned, in rotation, but not more than one flight check during each period described in paragraph (a) of this section.

(f) If the pilot in command is assigned to pilot both single-engine and multiengine aircraft, that pilot must initially take the instrument proficiency check required by paragraph (a) of this section in a multiengine aircraft, and each succeeding check alternately in single-engine and multiengine aircraft, but not more than one flight check during each period described in paragraph (a) of this section. Portions of a required flight check may be given in an aircraft simulator or other appropriate training device, if approved by the Administrator.

(g) If the pilot in command is authorized to use an autopilot system in place of a second in command, that pilot must show, during the required instrument proficiency check, that the pilot is able (without a second in command) both with and without using the autopilot to—

1. Conduct instrument operations competently; and
2. Properly conduct air-ground communications and comply with complex air traffic control instructions.
3. Each pilot taking the autopilot check must show that, while using the autopilot, the airplane can be operated as proficiently as it would be if a second in command were present to handle air-ground communications and air traffic control instructions. The autopilot check must only be demonstrated once every 12 calendar months during the instrument proficiency check required under paragraph (a) of this section.


(a) No certificate holder may use a pilot nor may any person serve, as a pilot in command of a flight unless, since the beginning of the 12th calendar month before that service, that pilot has passed a flight check in one of the types of aircraft which that pilot is to fly. The flight check shall—

1. Be given by an approved check pilot or by the Administrator;
2. Consist of at least one flight over one route segment; and
3. Include takeoffs and landings at one or more representative airports. In addition to the requirements of this paragraph, for a pilot authorized to conduct IFR operations, at least one flight shall be flown over a civil airway, an approved off-airway route, or a portion of either of them.

(b) The pilot who conducts the check shall determine whether the pilot being checked satisfactorily performs the duties and responsibilities of a pilot in command in operations under this part, and shall so certify in the pilot training record.

(c) Each certificate holder shall establish in the manual required by §135.21 a procedure which will ensure that each pilot who has not flown over a route and into an airport within the preceding 90 days will, before beginning the flight, become familiar with all available information required for the safe operation of that flight.

§ 135.301 Crewmember: Tests and checks, grace provisions, training to accepted standards.

(a) If a crewmember who is required to take a test or a flight check under this part, completes the test or flight check in the calendar month before or after the calendar month in which it is required, that crewmember is considered to have completed the test or check in the calendar month in which it is required.
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(b) If a pilot being checked under this subpart fails any of the required maneuvers, the person giving the check may give additional training to the pilot during the course of the check. In addition to repeating the maneuvers failed, the person giving the check may require the pilot being checked to repeat any other maneuvers that are necessary to determine the pilot’s proficiency. If the pilot being checked is unable to demonstrate satisfactory performance to the person conducting the check for a certificate holder may not use the pilot, nor may the pilot serve, as a flight crewmember in operations under this part until the pilot has satisfactorily completed the check.

Subpart H—Training

§ 135.321  Applicability and terms used.
(a) Except as provided in §135.3, this subpart prescribes the requirements applicable to—
(1) A certificate holder under this part which contracts with, or otherwise arranges to use the services of a training center certificated under part 142 to perform training, testing, and checking functions;
(2) Each certificate holder for establishing and maintaining an approved training program for crewmembers, check airmen and instructors, and other operations personnel employed or used by that certificate holder; and
(3) Each certificate holder for the qualification, approval, and use of aircraft simulators and flight training devices in the conduct of the program.
(b) For the purposes of this subpart, the following terms and definitions apply:
(1) Initial training. The training required for crewmembers who have not qualified and served in the same capacity on an aircraft.
(2) Transition training. The training required for crewmembers who have qualified and served in the same capacity on another aircraft.
(3) Upgrade training. The training required for crewmembers who have qualified and served as second in command on a particular aircraft type, before they serve as pilot in command on that aircraft.
(4) Differences training. The training required for crewmembers who have qualified and served on a particular type aircraft, when the Administrator finds differences training is necessary before a crewmember serves in the same capacity on a particular variation of that aircraft.
(5) Recurrent training. The training required for crewmembers to remain adequately trained and currently proficient for each aircraft, crewmember position, and type of operation in which the crewmember serves.
(6) In flight. The maneuvers, procedures, or functions that must be conducted in the aircraft.
(7) Training center. An organization governed by the applicable requirements of part 142 of this chapter that provides training, testing, and checking under contract or other arrangement to certificate holders subject to the requirements of this part.
(8) Requalification training. The training required for crewmembers previously trained and qualified, but who have become unqualified due to not having met within the required period the—
(i) Recurrent pilot testing requirements of §135.293;
(ii) Instrument proficiency check requirements of §135.297; or
(iii) Line checks required by §135.299.

§ 135.323 Training program: General.
(a) Each certificate holder required to have a training program under §135.341 shall:
(1) Establish, obtain the appropriate initial and final approval of, and provide a training program that meets this subpart and that ensures that each crewmember, flight instructor, check airmen, and each person assigned duties for the carriage and handling of hazardous materials (as defined in 49 CFR 171.8) is adequately trained to perform their assigned duties.
(2) Provide adequate ground and flight training facilities and properly qualified ground instructors for the training required by this subpart.
§ 135.325 Training program and revision: Initial and final approval.

(a) To obtain initial and final approval of a training program, or a revision to an approved training program, each certificate holder must submit to the Administrator—

(1) An outline of the proposed or revised curriculum, that provides enough information for a preliminary evaluation of the proposed training program or revision; and

(2) Additional relevant information that may be requested by the Administrator.

(b) If the proposed training program or revision complies with this subpart,
§ 135.327 Training program: Curriculum.

(a) Each certificate holder must prepare and keep current a written training program curriculum for each type of aircraft for each crewmember required for that type aircraft. The curriculum must include ground and flight training required by this subpart.

(b) Each training program curriculum must include the following:

(1) A list of principal ground training subjects, including emergency training subjects, that are provided.

(2) A list of all the training devices, mockups, systems trainers, procedures trainers, or other training aids that the certificate holder will use.

(3) Detailed descriptions or pictorial displays of the approved normal, abnormal, and emergency maneuvers, procedures and functions that will be performed during each flight training phase or flight check, indicating those maneuvers, procedures and functions that are to be performed during the inflight portions of flight training and flight checks.

§ 135.329 Crewmember training requirements.

(a) Each certificate holder must include in its training program the following initial and transition ground training as appropriate to the particular assignment of the crewmember:

(1) Basic indoctrination ground training for newly hired crewmembers including instruction in at least the—

(i) Duties and responsibilities of crewmembers as applicable;

(ii) Appropriate provisions of this chapter;

(iii) Contents of the certificate holder’s operating certificate and operations specifications (not required for flight attendants); and

(iv) Appropriate portions of the certificate holder’s operating manual.

(2) The initial and transition ground training in §§ 135.345 and 135.349, as applicable.

(3) Emergency training in §135.331.

(b) Each training program must provide the initial and transition flight training in §135.347, as applicable.

(c) Each training program must provide recurrent ground and flight training in §135.351.

(d) Upgrade training in §§ 135.345 and 135.347 for a particular type aircraft may be included in the training program for crewmembers who have qualified and served as second in command on that aircraft.

(e) In addition to initial, transition, upgrade and recurrent training, each training program must provide ground and flight training, instruction, and practice necessary to ensure that each crewmember—

(1) Remains adequately trained and currently proficient for each aircraft, crewmember position, and type of operation in which the crewmember serves; and

(2) Qualifies in new equipment, facilities, procedures, and techniques, including modifications to aircraft.
§ 135.331 Crewmember emergency training.

(a) Each training program must provide emergency training under this section for each aircraft type, model, and configuration, each crewmember, and each kind of operation conducted, as appropriate for each crewmember and the certificate holder.

(b) Emergency training must provide the following:

(1) Instruction in emergency assignments and procedures, including coordination among crewmembers.

(2) Individual instruction in the location, function, and operation of emergency equipment including—

(i) Equipment used in ditching and evacuation;

(ii) First aid equipment and its proper use; and

(iii) Portable fire extinguishers, with emphasis on the type of extinguisher to be used on different classes of fires.

(3) Instruction in the handling of emergency situations including—

(i) Rapid decompression;

(ii) Fire in flight or on the surface and smoke control procedures with emphasis on electrical equipment and related circuit breakers found in cabin areas;

(iii) Ditching and evacuation;

(iv) Illness, injury, or other abnormal situations involving passengers or crewmembers; and

(v) Hijacking and other unusual situations.

(4) Review of the certificate holder’s previous aircraft accidents and incidents involving actual emergency situations.

(c) Each crewmember must perform at least the following emergency drills, using the proper emergency equipment and procedures, unless the Administrator finds that, for a particular drill, the crewmember can be adequately trained by demonstration:

(1) Ditching, if applicable.

(2) Emergency evacuation.

(3) Fire extinguishing and smoke control.

(4) Operation and use of emergency exits, including deployment and use of evacuation chutes, if applicable.

(5) Use of crew and passenger oxygen.

(6) Removal of life rafts from the aircraft, inflation of the life rafts, use of life lines, and boarding of passengers and crew, if applicable.

(7) Donning and inflation of life vests and the use of other individual flotation devices, if applicable.

(d) Crewmembers who serve in operations above 25,000 feet must receive instruction in the following:

(1) Respiration.

(2) Hypoxia.

(3) Duration of consciousness without supplemental oxygen at altitude.

(4) Gas expansion.

(5) Gas bubble formation.

(6) Physical phenomena and incidents of decompression.

§ 135.333 Training requirements: Handling and carriage of hazardous materials.

(a) Except as provided in paragraph (d) of this section, no certificate holder may use any person to perform, and no person may perform, any assigned duties and responsibilities for the handling or carriage of hazardous materials (as defined in 49 CFR 171.8), unless within the preceding 12 calendar months that person has satisfactorily completed initial or recurrent training in an appropriate training program established by the certificate holder, which includes instruction regarding—

(1) The proper shipper certification, packaging, marking, labeling, and documentation for hazardous materials; and

(2) The compatibility, loading, storage, and handling characteristics of hazardous materials.

(b) Each certificate holder shall maintain a record of the satisfactory completion of the initial and recurrent training given to crewmembers and ground personnel who perform assigned duties and responsibilities for the handling and carriage of hazardous materials.

(c) Each certificate holder that elects not to accept hazardous materials shall ensure that each crewmember is adequately trained to recognize those items classified as hazardous materials.

(d) If a certificate holder operates into or out of airports at which trained employees or contract personnel are not available, it may use persons not...
meeting the requirements of paragraphs (a) and (b) of this section to load, offload, or otherwise handle hazardous materials if these persons are supervised by a crewmember who is qualified under paragraphs (a) and (b) of this section.

§ 135.335 Approval of aircraft simulators and other training devices.

(a) Training courses using aircraft simulators and other training devices may be included in the certificate holder's training program if approved by the Administrator.

(b) Each aircraft simulator and other training device that is used in a training course or in checks required under this subpart must meet the following requirements:

1. It must be specifically approved for—
   (i) The certificate holder; and
   (ii) The particular maneuver, procedure, or crewmember function involved.

2. It must maintain the performance, functional, and other characteristics that are required for approval.

3. Additionally, for aircraft simulators, it must be—
   (i) Approved for the type aircraft and, if applicable, the particular variation within type for which the training or check is being conducted; and
   (ii) Modified to conform with any modification to the aircraft being simulated that changes the performance, functional, or other characteristics required for approval.

(c) A particular aircraft simulator or other training device may be used by more than one certificate holder.

(d) In granting initial and final approval of training programs or revisions to them, the Administrator considers the training devices, methods and procedures listed in the certificate holder's curriculum under §135.327.


§ 135.337 Qualifications: Check airmen (aircraft) and check airmen (simulator).

(a) For the purposes of this section and §135.339:

1. A check airman (aircraft) is a person who is qualified to conduct flight checks in an aircraft, in a flight simulator, or in a flight training device for a particular type aircraft.

2. A check airman (simulator) is a person who is qualified to conduct flight checks, but only in a flight simulator, in a flight training device, or both, for a particular type aircraft.

3. Check airmen (aircraft) and check airmen (simulator) are those check airmen who perform the functions described in §§135.321(a) and 135.323(a)(4) and (c).

(b) No certificate holder may use a person, nor may any person serve as a check airman (aircraft) in a training program established under this subpart unless, with respect to the aircraft type involved, that person—

1. Holds the airmen certificates and ratings required to serve as a pilot in command in operations under this part;

2. Has satisfactorily completed the training phases for the aircraft, including recurrent training, that are required to serve as a pilot in command in operations under this part;

3. Has satisfactorily completed the proficiency or competency checks that are required to serve as a pilot in command in operations under this part;

4. Has satisfactorily completed the applicable training requirements of §135.339;

5. Holds at least a Class III medical certificate unless serving as a required crewmember, in which case holds a Class I or Class II medical certificate as appropriate;

6. Has satisfied the recency of experience requirements of §135.247; and

7. Has been approved by the Administrator for the check airman duties involved.

(c) No certificate holder may use a person, nor may any person serve as a check airman (simulator) in a training program established under this subpart unless, with respect to the aircraft type involved, that person meets the provisions of paragraph (b) of this section, or—

1. Holds the applicable airmen certificates and ratings, except medical certificate, required to serve as a pilot
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in command in operations under this part;

(2) Has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as a pilot in command in operations under this part;

(3) Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command in operations under this part;

(4) Has satisfactorily completed the applicable training requirements of §135.339 and

(5) Has been approved by the Administrator for the check airman (simulator) duties involved.

(d) Completion of the requirements in paragraphs (b) (2), (3), and (4) or (c) (2), (3), and (4) of this section, as applicable, shall be entered in the individual's training record maintained by the certificate holder.

(e) Check airmen who do not hold an appropriate medical certificate may function as check airmen (simulator), but may not serve as flightcrew members in operations under this part.

(f) A check airman (simulator) must accomplish the following—

(1) Fly at least two flight segments as a required crewmember for the type, class, or category aircraft involved within the 12-month preceding the performance of any check airman duty in a flight simulator; or

(2) Satisfactorily complete an approved line-observation program within the period prescribed by that program and that must precede the performance of any check airman duty in a flight simulator.

(g) The flight segments or line-observation program required in paragraph (f) of this section are considered to be completed in the month required if completed in the calendar month before or the calendar month after the month in which they are due.

[Doc. No. 28471, 61 FR 30744, June 17, 1996]

§ 135.338 Qualifications: Flight instructors (aircraft) and flight instructors (simulator).

(a) For the purposes of this section and §135.340:

1. A flight instructor (aircraft) is a person who is qualified to instruct in an aircraft, in a flight simulator, or in a flight training device for a particular type, class, or category aircraft.

2. A flight instructor (simulator) is a person who is qualified to instruct in a flight simulator, in a flight training device, or in both, for a particular type, class, or category aircraft.

3. Flight instructors (aircraft) and flight instructors (simulator) are those instructors who perform the functions described in §135.321(a) and 135.323 (a)(4) and (c).

(b) No certificate holder may use a person, nor may any person serve as a flight instructor (aircraft) in a training program established under this subpart unless, with respect to the type, class, or category aircraft involved, that person—

1. Holds the airmen certificates and ratings required to serve as a pilot in command in operations under this part;

2. Has satisfactorily completed the training phases for the aircraft, including recurrent training, that are required to serve as a pilot in command in operations under this part;

3. Has satisfactorily completed the applicable training requirements of §135.340;

4. Holds at least a Class III medical certificate; and

5. Has satisfied the recency of experience requirements of §135.247.

(c) No certificate holder may use a person, nor may any person serve as a flight instructor (simulator) in a training program established under this subpart, unless, with respect to the type, class, or category aircraft involved, that person meets the provisions of paragraph (b) of this section, or—

1. Holds the airmen certificates and ratings, except medical certificate, required to serve as a pilot in command in operations under this part except before March 19, 1997 that person need not hold a type rating for the type, class, or category of aircraft involved.
§ 135.339 Initial and transition training and checking: Check airmen (aircraft), check airmen (simulator).

(a) No certificate holder may use a person nor may any person serve as a check airman unless—

(1) That person has satisfactorily completed initial or transition check airman training; and

(2) Has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as a pilot in command in operations under this part;

(3) Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command in operations under this part; and

(4) Has satisfactorily completed the applicable training requirements of § 135.340.

(d) Completion of the requirements in paragraphs (b) (2), (3), and (4) or (c) (2), (3), and (4) of this section, as applicable, shall be entered in the individual's training record maintained by the certificate holder.

(e) An airman who does not hold a medical certificate may function as a flight instructor in an aircraft if functioning as a non-required crewmember, but may not serve as a flightcrew member in operations under this part.

(f) A flight instructor (simulator) must accomplish the following—

(1) Fly at least two flight segments as a required crewmember for the type, class, or category aircraft involved within the 12-month period preceding the performance of any flight instructor duty in a flight simulator; or

(2) Satisfactorily complete an approved line-observation program within the period prescribed by that program and that must precede the performance of any check airman duty in a flight simulator.

(g) The flight segments or line-observation program required in paragraph (f) of this section are considered completed in the month required if completed in the calendar month before, or in the calendar month after, the month in which they are due.


§ 135.339 Initial and transition training and checking: Check airmen (aircraft), check airmen (simulator).

(a) No certificate holder may use a person nor may any person serve as a check airman unless—

(1) That person has satisfactorily completed initial or transition check airman training; and

(2) Within the preceding 24 calendar months, that person satisfactorily conducts a proficiency or competency check under the observation of an FAA inspector or an aircrew designated examiner employed by the operator. The observation check may be accomplished in part or in full in an aircraft, in a flight simulator, or in a flight training device. This paragraph applies after March 19, 1997.

(b) The observation check required by paragraph (a)(2) of this section is considered to have been completed in the month required if completed in the calendar month before or the calendar month after the month in which it is due.

(c) The initial ground training for check airmen must include the following:

(1) Check airman duties, functions, and responsibilities.

(2) The applicable Code of Federal Regulations and the certificate holder's policies and procedures.

(3) The applicable methods, procedures, and techniques for conducting the required checks.

(4) Proper evaluation of student performance including the detection of—

(i) Improper and insufficient training; and

(ii) Personal characteristics of an applicant that could adversely affect safety.

(5) The corrective action in the case of unsatisfactory checks.

(6) The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the aircraft to which the check airman is in transition.

(e) The initial and transition flight training for check airmen (aircraft) must include the following—

(1) The safety measures for emergency situations that are likely to develop during a check;

(2) The potential results of improper, untimely, or nonexecution of safety measures during a check;
(3) Training and practice in conducting flight checks from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence to conduct the pilot flight checks required by this part; and

(4) The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during checking.

(f) The requirements of paragraph (e) of this section may be accomplished in full or in part in flight, in a flight simulator, or in a flight training device, as appropriate.

(g) The initial and transition flight training for check airmen (simulator) must include the following:

(1) Training and practice in conducting flight checks in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight checks required by this part. This training and practice must be accomplished in a flight simulator or in a flight training device.

(2) Training in the operation of flight simulators, flight training devices, or both, to ensure competence to conduct the flight checks required by this part.

§ 135.340 Initial and transition training and checking: Flight instructors (aircraft), flight instructors (simulator).

(a) No certificate holder may use a person nor may any person serve as a flight instructor unless—

(1) That person has satisfactorily completed initial or transition flight instructor training; and

(2) Within the preceding 24 calendar months, that person satisfactorily conducts instruction under the observation of an FAA inspector, an operator check airman, or an aircrew designated examiner employed by the operator. The observation check may be accomplished in part or in full in an aircraft, in a flight simulator, or in a flight training device. This paragraph applies after March 19, 1997.

(b) The observation check required by paragraph (a)(2) of this section is considered to have been completed in the month required if completed in the calendar month before, or the calendar month after, the month in which it is due.

(c) The initial ground training for flight instructors must include the following:

(1) Flight instructor duties, functions, and responsibilities.

(2) The applicable Code of Federal Regulations and the certificate holder’s policies and procedures.

(3) The applicable methods, procedures, and techniques for conducting flight instruction.

(4) Proper evaluation of student performance including the detection of—

(i) Improper and insufficient training; and

(ii) Personal characteristics of an applicant that could adversely affect safety.

(5) The corrective action in the case of unsatisfactory training progress.

(6) The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft.

(d) The transition ground training for flight instructors must include the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the type, class, or category aircraft to which the flight instructor is in transition.

(e) The initial and transition flight training for flight instructors (aircraft) must include the following—

(1) The safety measures for emergency situations that are likely to develop during instruction;

(2) The potential results of improper or untimely safety measures during instruction;

(3) Training and practice from the left and right pilot seats in the required normal, abnormal, and emergency maneuvers to ensure competence to conduct the flight instruction required by this part; and
§ 135.341 Pilot and flight attendant crewmember training programs.

(a) Each certificate holder, other than one who uses only one pilot in the certificate holder’s operations, shall establish and maintain an approved pilot training program, and each certificate holder who uses a flight attendant crewmember shall establish and maintain an approved flight attendant training program, that is appropriate to the operations to which each pilot and flight attendant is to be assigned, and will ensure that they are adequately trained to meet the applicable knowledge and practical testing requirements of §§135.293 through 135.301. However, the Administrator may authorize a deviation from this section if the Administrator finds that, because of the limited size and scope of the operation, safety will allow a deviation from these requirements.

(b) Each certificate holder required to have a training program by paragraph (a) of this section shall provide current and appropriate study materials for use by each required pilot and flight attendant.

(3) Upgrade training;
(4) Differences training; and
(5) Recurrent training.

(c) Each certificate holder required to have a training program by paragraph (a) of this section shall provide current and appropriate study materials for use by each required pilot and flight attendant.

(d) The certificate holder shall furnish copies of the pilot and flight attendant crewmember training program, and all changes and additions, to the assigned representative of the Administrator. If the certificate holder uses training facilities of other persons, a copy of those training programs or appropriate portions used for those facilities shall also be furnished. Curricula that follow FAA published curricula may be cited by reference in the copy of the training program furnished to the representative of the Administrator and need not be furnished with the program.

§ 135.343 Crewmember initial and recurrent training requirements.

No certificate holder may use a person, nor may any person serve, as a crewmember in operations under this part unless that crewmember has completed the appropriate initial or recurrent training phase of the training program appropriate to the type of operation in which the crewmember is to serve since the beginning of the 12th calendar month before that service. This section does not apply to a certificate holder that uses only one pilot in the certificate holder’s operations.

§ 135.345 Pilots: Initial, transition, and upgrade ground training.

Initial, transition, and upgrade ground training for pilots must include instruction in at least the following, as applicable to their duties:

(a) General subjects—
(1) The certificate holder’s flight locating procedures;
(2) Principles and methods for determining weight and balance, and runway limitations for takeoff and landing;

(3) Enough meteorology to ensure a practical knowledge of weather phenomena, including the principles of frontal systems, icing, fog, thunderstorms, windshear and, if appropriate, high altitude weather situations;

(4) Air traffic control systems, procedures, and phraseology;

(5) Navigation and the use of navigational aids, including instrument approach procedures;

(6) Normal and emergency communication procedures;

(7) Visual cues before and during descent below DH or MDA; and

(8) Other instructions necessary to ensure the pilot’s competence.

(b) For each aircraft type—

(1) A general description;

(2) Performance characteristics;

(3) Engines and propellers;

(4) Major components;

(5) Major aircraft systems (i.e., flight controls, electrical, and hydraulic), other systems, as appropriate, principles of normal, abnormal, and emergency operations, appropriate procedures and limitations;

(6) Knowledge and procedures for—

(i) Recognizing and avoiding severe weather situations;

(ii) Escaping from severe weather situations, in case of inadvertent encounters, including low-altitude windshear (except that rotorcraft pilots are not required to be trained in escaping from low-altitude windshear);

(iii) Operating in or near thunderstorms (including best penetrating altitudes), turbulent air (including clear air turbulence), icing, hail, and other potentially hazardous meteorological conditions; and

(iv) Operating airplanes during ground icing conditions (i.e., any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the airplane), if the certificate holder expects to authorize takeoffs in ground icing conditions, including:

(A) The use of holdover times when using deicing/anti-icing fluids;

(B) Airplane deicing/anti-icing procedures, including inspection and check procedures and responsibilities;

(C) Communications;

(D) Airplane surface contamination (i.e., adherence of frost, ice, or snow) and critical area identification, and knowledge of how contamination adversely affects airplane performance and flight characteristics;

(E) Types and characteristics of deicing/anti-icing fluids, if used by the certificate holder;

(F) Cold weather preflight inspection procedures;

(G) Techniques for recognizing contamination on the airplane;

(7) Operating limitations;

(8) Fuel consumption and cruise control;

(9) Flight planning;

(10) Each normal and emergency procedure; and

(11) The approved Aircraft Flight Manual, or equivalent.


§135.347 Pilots: Initial, transition, upgrade, and differences flight training.

(a) Initial, transition, upgrade, and differences training for pilots must include flight and practice in each of the maneuvers and procedures in the approved training program curriculum.

(b) The maneuvers and procedures required by paragraph (a) of this section must be performed in flight, except to the extent that certain maneuvers and procedures may be performed in an aircraft simulator, or an appropriate training device, as allowed by this subpart.

(c) If the certificate holder’s approved training program includes a course of training using an aircraft simulator or other training device, each pilot must successfully complete—

(1) Training and practice in the simulator or training device in at least the maneuvers and procedures in this subpart that are capable of being performed in the aircraft simulator or training device; and
§ 135.349 Flight attendants: Initial and transition ground training.

Initial and transition ground training for flight attendants must include instruction in at least the following—

(a) General subjects—

(1) The authority of the pilot in command; and

(2) Passenger handling, including procedures to be followed in handling disabled persons or other persons whose conduct might jeopardize safety.

(b) For each aircraft type—

(1) A general description of the aircraft emphasizing physical characteristics that may have a bearing on ditching, evacuation, and inflight emergency procedures and on other related duties;

(2) The use of both the public address system and the means of communicating with other flight crewmembers, including emergency means in the case of attempted hijacking or other unusual situations; and

(3) Proper use of electrical galley equipment and the controls for cabin heat and ventilation.

§ 135.351 Recurrent training.

(a) Each certificate holder must ensure that each crewmember receives recurrent training and is adequately trained and currently proficient for the type aircraft and crewmember position involved.

(b) Recurrent ground training for crewmembers must include at least the following:

(1) A quiz or other review to determine the crewmember’s knowledge of the aircraft and crewmember position involved.

(2) Instruction as necessary in the subjects required for initial ground training by this subpart, as appropriate, including low-altitude windshear training and training on operating during ground icing conditions, as prescribed in §135.341 and described in §135.345, and emergency training.

(c) Recurrent flight training for pilots must include, at least, flight training in the maneuvers or procedures in this subpart, except that satisfactory completion of the check required by §135.293 within the preceding 12 calendar months may be substituted for recurrent flight training.


§ 135.353 Prohibited drugs.

(a) Each certificate holder or operator shall provide each employee performing a function listed in appendix I to part 121 of this chapter and his or her supervisor with the training specified in that appendix.

(b) No certificate holder or operator may use any contractor to perform a function specified in appendix I to part 121 of this chapter unless that contractor provides each of its employees performing that function for the certificate holder or the operator and his or her supervisor with the training specified in that appendix.

[Doc. No. 25148, 53 FR 47061, Nov. 21, 1988]

Subpart I—Airplane Performance Operating Limitations

§ 135.361 Applicability.

(a) This subpart prescribes airplane performance operating limitations applicable to the operation of the categories of airplanes listed in §135.363 when operated under this part.

(b) For the purpose of this subpart, effective length of the runway, for landing means the distance from the point at which the obstruction clearance plane associated with the approach end of the runway intersects the centerline of the runway to the far end of the runway.

(c) For the purpose of this subpart, obstruction clearance plane means a plane sloping upward from the runway at a slope of 1:20 to the horizontal, and tangent to or clearing all obstructions within a specified area surrounding the runway as shown in a profile view of
§ 135.365 Large transport category airplanes: Reciprocating engine powered: Weight limitations.

(a) No person may take off a reciprocating engine powered large transport category airplane from an airport located at an elevation outside of the range for which maximum takeoff that area. In the plan view, the centerline of the specified area coincides with the centerline of the runway, beginning at the point where the obstruction clearance plane intersects the centerline of the runway and proceeding to a point at least 1,500 feet from the beginning point. After that the centerline coincides with the takeoff path over the ground for the runway (in the case of takeoffs) or with the instrument approach counterpart (for landings), or, where the applicable one of these paths has not been established, it proceeds consistent with turns of at least 4,000-foot radius until a point is reached beyond which the obstruction clearance plane clears all obstructions. This area extends laterally 200 feet on each side of the centerline at the point where the obstruction clearance plane intersects the runway and continues at this width to the end of the runway; then it increases uniformly to 500 feet on each side of the centerline at a point 1,500 feet from the intersection of the obstruction clearance plane with the runway; after that it extends laterally 500 feet on each side of the centerline.

(e) Each certificate holder operating a small nontransport category airplane shall comply with § 135.399.

(f) The performance data in the Airplane Flight Manual applies in determining compliance with § 135.365 through 135.367. Where conditions are different from those on which the performance data is based, compliance is determined by interpolation or by computing the effects of change in the specific variables, if the results of the interpolation or computations are substantially as accurate as the results of direct tests.

(g) No person may take off a reciprocating engine powered large transport category airplane at a weight that is more than the allowable weight for the runway being used (determined under the runway takeoff limitations of the transport category operating rules of this subpart) after taking into account the temperature operating correction factors in section 4a.748a-T or section 4b.117 of the Civil Air Regulations in effect on January 31, 1965, and in the applicable Airplane Flight Manual.

(h) The Administrator may authorize in the operations specifications deviations from this subpart if special circumstances make a literal observance of a requirement unnecessary for safety.

(i) The 10-mile width specified in § 135.369 through 135.373 may be reduced to 5 miles, for not more than 20 miles, when operating under VFR or where navigation facilities furnish reliable and accurate identification of high ground and obstructions located outside of 5 miles, but within 10 miles, on each side of the intended track.

(j) Each certificate holder operating a commuter category airplane shall comply with § 135.398.

§ 135.363 General.

(a) Each certificate holder operating a reciprocating engine powered large transport category airplane shall comply with §§ 135.365 through 135.377.

(b) Each certificate holder operating a turbine engine powered large transport category airplane shall comply with §§ 135.379 through 135.387, except that when it operates a turbopropeller-powered large transport category airplane certificated after August 29, 1959, but previously type certificated with the same number of reciprocating engines, it may comply with §§ 135.365 through 135.377.

(c) Each certificate holder operating a large nontransport category airplane shall comply with §§ 135.389 through 135.395 and any determination of compliance must be based only on approved performance data. For the purpose of this subpart, a large nontransport category airplane is an airplane that was type certificated before July 1, 1942.

(d) Each certificate holder operating a small transport category airplane shall comply with § 135.397.
§ 135.367 Large transport category airplanes: Reciprocating engine powered: Takeoff limitations.

(a) No person operating a reciprocating engine powered large transport category airplane may take off that airplane unless it is possible—

1. To stop the airplane safely on the runway, as shown by the accelerate-stop distance data, at any time during takeoff until reaching critical-engine failure speed;

2. If the critical engine fails at any time after the airplane reaches critical-engine failure speed, to continue the takeoff and reach a height of 50 feet, as indicated by the takeoff path data, before passing over the end of the runway; and

3. To clear all obstacles either by at least 50 feet vertically (as shown by the takeoff path data) or 200 feet horizontally within the airport boundaries and 300 feet horizontally beyond the boundaries, without banking before reaching a height of 50 feet (as shown by the takeoff path data) and after that without banking more than 15 degrees.

(b) In applying this section, corrections must be made for any runway gradient. To allow for wind effect, takeoff data based on still air may be corrected by taking into account not more than 50 percent of any reported headwind component and not less than 150 percent of any reported tailwind component.

§ 135.369 Large transport category airplanes: Reciprocating engine powered: En route limitations: All engines operating.

(a) No person operating a reciprocating engine powered large transport category airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that does not allow a rate of climb (in feet per minute), with all engines operating, of at least 6.90 \( V_{so} \) (that is, the number of feet per minute obtained by multiplying the number of knots by 6.90) at an altitude of at least 1,000 feet above the highest ground or obstruction within ten miles of each side of the intended track.

(b) This section does not apply to large transport category airplanes certificated under part 4a of the Civil Air Regulations.

§ 135.371 Large transport category airplanes: Reciprocating engine powered: En route limitations: One engine inoperative.

(a) Except as provided in paragraph (b) of this section, no person operating a reciprocating engine powered large transport category airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that does not allow a rate of climb (in feet per minute), with one engine inoperative, of at least (0.079 – 0.106/N) \( V_{so}^2 \) (where \( N \) is the number of engines installed and \( V_{so} \) is expressed in knots) at an altitude of at least 1,000 feet above the highest ground or obstruction within 10 miles of each side of the intended track. However, for the purposes of this paragraph the rate of climb for transport category airplanes certificated under part 4a of the Civil Air Regulations is 0.026 \( V_{so}^2 \).

(b) In place of the requirements of paragraph (a) of this section, a person
may, under an approved procedure, operate a reciprocating engine powered large transport category airplane at an all-engines-operating altitude that allows the airplane to continue, after an engine failure, to an alternate airport where a landing can be made under §135.377, allowing for normal consumption of fuel and oil. After the assumed failure, the flight path must clear the ground and any obstruction within five miles on each side of the intended track by at least 2,000 feet.

(c) If an approved procedure under paragraph (b) of this section is used, the certificate holder shall comply with the following:

(1) The rate of climb (as prescribed in the Airplane Flight Manual for the appropriate weight and altitude) used in calculating the airplane's flight path shall be diminished by an amount in feet per minute, equal to \((0.079 - \frac{0.106}{N}) V_{S_0min}\) (when \(N\) is the number of engines installed and \(V_{S_0}\) is expressed in knots) for airplanes certificated under part 25 of this chapter and by \(0.026 \times V_{S_0min}\) for airplanes certificated under part 4a of the Civil Air Regulations.

(2) The all-engines-operating altitude shall be sufficient so that in the event the critical engine becomes inoperative at any point along the route, the flight will be able to proceed to a predetermined alternate airport by use of this procedure. In determining the takeoff weight, the airplane is assumed to pass over the critical obstruction following engine failure at a point no closer to the critical obstruction than the nearest approved radio navigational fix, unless the Administrator approves a procedure established on a different basis upon finding that adequate operational safeguards exist.

(3) The airplane must meet the provisions of paragraph (a) of this section at 1,000 feet above the airport used as an alternate in this procedure.

(4) The procedure must include an approved method of accounting for winds and temperatures that would otherwise adversely affect the flight path.

(5) In complying with this procedure, fuel jettisoning is allowed if the certificate holder shows that it has an adequate training program, that proper instructions are given to the flight crew, and all other precautions are taken to ensure a safe procedure.

(6) The certificate holder and the pilot in command shall jointly elect an alternate airport for which the appropriate weather reports or forecasts, or any combination of them, indicate that weather conditions will be at or above the alternate weather minimum specified in the certificate holder's operations specifications for that airport when the flight arrives.

§135.373 Part 25 transport category airplanes with four or more engines: Reciprocating engine powered: En route limitations: Two engines inoperative.

(a) No person may operate an airplane certificated under part 25 and having four or more engines unless—

(1) There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets §135.377; or

(2) It is operated at a weight allowing the airplane, with the two critical engines inoperative, to climb at \(0.013 \times V_{S_0min}\) feet per minute (that is, the number of feet per minute obtained by multiplying the number of knots squared by 0.013) at an altitude of 1,000 feet above the highest ground or obstruction within 10 miles on each side of the intended track, or at an altitude of 5,000 feet, whichever is higher.

(b) For the purposes of paragraph (a)(2) of this section, it is assumed that—

(1) The two engines fail at the point that is most critical with respect to the takeoff weight;

(2) Consumption of fuel and oil is normal with all engines operating up to the point where the two engines fail with two engines operating beyond that point;

(3) Where the engines are assumed to fail at an altitude above the prescribed minimum altitude, compliance with the prescribed rate of climb at the prescribed minimum altitude need not be shown during the descent from the cruising altitude to the prescribed minimum altitude, if those requirements can be met once the prescribed minimum altitude is reached, and assuming descent to be along a net flight path and the rate of descent to be \(0.013 \times V_{S_0min}\).
§ 135.375 Large transport category airplanes: Reciprocating engine powered: Landing limitations: Destination airports.

(a) Except as provided in paragraph (b) of this section, no person operating a reciprocating engine powered large transport category airplane may take off that airplane, unless its weight on arrival, allowing for normal consumption of fuel and oil in flight, would allow a full stop landing at the intended destination within 60 percent of the effective length of each runway described below from a point 50 feet directly above the intersection of the obstruction clearance plane and the runway. For the purposes of determining the allowable landing weight at the destination airport the following is assumed:

1. The airplane is landed on the most favorable runway and in the most favorable direction in still air.
2. The airplane is landed on the most suitable runway considering the probable wind velocity and direction (forecast for the expected time of arrival), the ground handling characteristics of the type of airplane, and other conditions such as landing aids and terrain, and allowing for the effect of the landing path and roll of not more than 50 percent of the headwind component or not less than 150 percent of the tailwind component.

(b) An airplane that would be prohibited from being taken off because it could not meet paragraph (a)(2) of this section may be taken off if an alternate airport is selected that meets all of this section except that the airplane can accomplish a full stop landing within 70 percent of the effective length of the runway.


No person may list an airport as an alternate airport in a flight plan unless the airplane (at the weight anticipated at the time of arrival at the airport), based on the assumptions in § 135.375(a) (1) and (2), can be brought to a full stop landing within 70 percent of the effective length of the runway.

§ 135.379 Large transport category airplanes: Turbine engine powered: Takeoff limitations.

(a) No person operating a turbine engine powered large transport category airplane may take off that airplane at a weight greater than that listed in the Airplane Flight Manual for the elevation of the airport and for the ambient temperature existing at take-off.

(b) No person operating a turbine engine powered large transport category airplane certificated after August 26, 1957, but before August 30, 1959 (SR422, 422A), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual for the minimum distance required for take-off. In the case of an airplane certificated after September 30, 1958 (SR422A, 422B), the takeoff distance may include a clearway distance but the clearway distance included may not be greater than one-half of the takeoff run.

(c) No person operating a turbine engine powered large transport category airplane certificated after August 29, 1959 (SR422B), may take off that airplane at a weight greater than that listed in the Airplane Flight Manual at which compliance with the following may be shown:

1. The accelerate-stop distance, as defined in § 25.109 of this chapter, must not exceed the length of the runway plus the length of any stopway.
2. The takeoff distance must not exceed the length of the runway plus the length of any clearway except that the length of any clearway included must not be greater than one-half the length of the runway.
3. The takeoff run must not be greater than the length of the runway.

(d) No person operating a turbine engine powered large transport category
§ 135.381 Large transport category airplanes: Turbine engine powered: En route limitations: One engine inoperative.

(a) No person operating a turbine engine powered large transport category airplane may take off that airplane at a weight, allowing for normal consumption of fuel and oil, that is greater than that which (under the approved, one engine inoperative, en route net flight path data in the Airplane Flight Manual for that airplane) will allow compliance with paragraph (a) (1) or (2) of this section, based on the ambient temperatures expected en route.

(1) There is a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within five statute miles on each side of the intended track, and, in addition, if that airplane was certificated after August 29, 1958 (SR422B), there is a positive slope at 1,500 feet above the airport where the airplane is assumed to land after an engine fails.

(2) The net flight path allows the airplane to continue flight from the cruising altitude to an airport where a landing can be made under §135.387 clearing all terrain and obstructions within five statute miles of the intended track by at least 2,000 feet vertically and with a positive slope at 1,000 feet above the airport where the airplane lands after an engine fails, or, if that airplane was certificated after September 30, 1958 (SR422A, 422B), with a positive slope at 1,500 feet above the airport where the airplane lands after an engine fails.

(b) For the purpose of paragraph (a)(2) of this section, it is assumed that—

(1) The engine fails at the most critical point en route;

(2) The airplane passes over the critical obstruction, after engine failure at a point that is no closer to the obstruction than the approved radio navigation fix, unless the Administrator authorizes a different procedure based on adequate operational safeguards;
§ 135.383 Large transport category airplanes: Turbine engine powered: En route limitations: Two engines inoperative.

(a) Airplanes certificated after August 26, 1957, but before October 1, 1958 (SR422). No person may operate a turbine engine powered large transport category airplane along an intended route unless that person complies with either of the following:

(1) There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets § 135.387.

(2) Its weight, according to the two-engine-inoperative, en route, net flight path data in the Airplane Flight Manual allows the airplane to fly from the point where the two engines are assumed to fail simultaneously to an airport that meets § 135.387 with a net flight path (considering the ambient temperature anticipated along the track) having a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within five statute miles on each side of the intended track, or at an altitude of 2,000 feet, whichever is higher.

For the purpose of paragraph (b)(2) of this section, it is assumed that the two engines fail at the most critical point en route, that the airplane’s weight at the point where the engines fail includes enough fuel to continue to the airport, to arrive at an altitude of at least 1,500 feet directly over the airport, and after that to fly for 15 minutes at cruise power or thrust, or both, and that the consumption of fuel and oil after engine failure is the same as the consumption allowed for in the net flight path data in the Airplane Flight Manual.

(b) Airplanes certificated after September 30, 1958, but before August 30, 1959 (SR422A). No person may operate a turbine engine powered large transport category airplane along an intended route unless that person complies with either of the following:

(1) There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets § 135.387.

(2) Its weight, according to the two-engine-inoperative, en route, net flight path data in the Airplane Flight Manual allows the airplane to fly from the point where the two engines are assumed to fail simultaneously to an airport that meets § 135.387 with a net flight path (considering the ambient temperature anticipated along the track) having a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within five statute miles on each side of the intended track, or at an altitude of 2,000 feet, whichever is higher.

For the purpose of paragraph (b)(2) of this section, it is assumed that the two engines fail at the most critical point en route, that the airplane’s weight at the point where the engines fail includes enough fuel to continue to the airport, to arrive at an altitude of at least 1,500 feet directly over the airport, and after that to fly for 15 minutes at cruise power or thrust, or both, and that the consumption of fuel and oil after engine failure is the same as the consumption allowed for in the net flight path data in the Airplane Flight Manual.

(c) Aircraft certificated after August 29, 1959 (SR422B). No person may operate a turbine engine powered large transport category airplane along an intended route unless that person complies with either of the following:

(1) There is no place along the intended track that is more than 90 minutes (with all engines operating at cruising power) from an airport that meets § 135.387.

(2) Its weight, according to the two-engine-inoperative, en route, net flight path data in the Airplane Flight Manual allows the airplane to fly from the point where the two engines are assumed to fail simultaneously to an airport that meets § 135.387 with a net flight path (considering the ambient temperature anticipated along the track) having a positive slope at an altitude of at least 1,000 feet above all terrain and obstructions within five statute miles on each side of the intended track, or at an altitude of 2,000 feet, whichever is higher.

For the purpose of paragraph (b)(2) of this section, it is assumed that the two engines fail at the most critical point en route, that the airplane’s weight at the point where the engines fail includes enough fuel to continue to the airport, to arrive at an altitude of at least 1,500 feet directly over the airport, and after that to fly for 15 minutes at cruise power or thrust, or both, and that the consumption of fuel and oil after engine failure is the same as the consumption allowed for in the net flight path data in the Airplane Flight Manual.

(a) No person operating a turbine engine powered large transport category airplane may take off that airplane at a weight that (allowing for normal consumption of fuel and oil in flight) the weight of the airplane on arrival would exceed the landing weight in the Airplane Flight Manual for the elevation of the destination or alternate airport and the ambient temperature anticipated at the time of landing.

(b) Except as provided in paragraph (c), (d), or (e) of this section, no person operating a turbine engine powered large transport category airplane may take off that airplane unless its weight on arrival, allowing for normal consumption of fuel and oil in flight (in accordance with the landing distance in the Airplane Flight Manual for the elevation of the destination airport and the wind conditions anticipated there at the time of landing), would allow a full stop landing at the intended destination airport within 60 percent of the effective length of each runway described below from a point 50 feet above the intersection of the obstruction clearance plane and the runway. For the purpose of determining the allowable landing weight at the destination airport the following is assumed:

(1) The airplane is landed on the most favorable runway and in the most favorable direction, in still air.

(2) The airplane is landed on the most suitable runway considering the probable wind velocity and direction and the ground handling characteristics of the airplane, and considering other conditions such as landing aids and terrain.

(c) A turbopropeller powered airplane that would be prohibited from being taken off because it could not meet paragraph (b)(2) of this section, may be taken off if an alternate airport is selected that meets all of this section except that the airplane can accomplish a full stop landing within 70 percent of the effective length of the runway.

(d) Unless, based on a showing of actual operating landing techniques on wet runways, a shorter landing distance (but never less than that required by paragraph (b) of this section) has been approved for a specific type and model airplane and included in the Airplane Flight Manual, no person may take off a turbojet airplane when the appropriate weather reports or forecasts, or any combination of them, indicate that the runways at the destination airport may be wet or slippery at the estimated time of arrival unless the effective runway length at the destination airport is at least 115 percent of the runway length required under paragraph (b) of this section.

(e) A turbojet airplane that would be prohibited from being taken off because it could not meet paragraph (b)(2) of this section may be taken off if an alternate airport is selected that...

No person may select an airport as an alternate airport for a turbine engine powered large transport category airplane unless (based on the assumptions in § 135.385(b)) that airplane, at the weight anticipated at the time of arrival, can be brought to a full stop landing within 70 percent of the effective length of the runway for turbo-propeller-powered airplanes and 60 percent of the effective length of the runway for turbojet airplanes, from a point 50 feet above the intersection of the obstruction clearance plane and the runway.

§ 135.389 Large nontransport category airplanes: Takeoff limitations.

(a) No person operating a large nontransport category airplane may take off that airplane at a weight greater than the weight that would allow the airplane to be brought to a safe stop within the effective length of the runway, from any point during the takeoff before reaching 105 percent of minimum control speed (the minimum speed at which an airplane can be safely controlled in flight after an engine becomes inoperative) or 115 percent of the power off stalling speed in the takeoff configuration, whichever is greater.

(b) For the purposes of this section—
(1) It may be assumed that takeoff power is used on all engines during the acceleration;
(2) Not more than 50 percent of the reported headwind component, or not less than 150 percent of the reported tailwind component, may be taken into account;
(3) The average runway gradient (the difference between the elevations of the endpoints of the runway divided by the total length) must be considered if it is more than one-half of one percent;
(4) It is assumed that the airplane is operating in standard atmosphere; and
(5) For takeoff, effective length of the runway means the distance from the end of the runway at which the takeoff is started to a point at which the obstruction clearance plane associated with the other end of the runway intersects the runway centerline.

§ 135.391 Large nontransport category airplanes: En route limitations: One engine inoperative.

(a) Except as provided in paragraph (b) of this section, no person operating a large nontransport category airplane may take off that airplane at a weight that does not allow a rate of climb of at least 50 feet a minute, with the critical engine inoperative, at an altitude of at least 1,000 feet above the highest obstruction within five miles on each side of the intended track, or 5,000 feet, whichever is higher.

(b) Without regard to paragraph (a) of this section, if the Administrator finds that safe operations are not impaired, a person may operate the airplane at an altitude that allows the airplane, in case of engine failure, to clear all obstructions within five miles on each side of the intended track by 1,000 feet. If this procedure is used, the rate of descent for the appropriate weight and altitude is assumed to be 50 feet a minute greater than the rate in the approved performance data. Before approving such a procedure, the Administrator considers the following for the route, route segment, or area concerned:

(1) The reliability of wind and weather forecasting;
(2) The location and kinds of navigation aids;
(3) The prevailing weather conditions, particularly the frequency and amount of turbulence normally encountered;
(4) Terrain features;
(5) Air traffic problems;
(6) Any other operational factors that affect the operations.

(c) For the purposes of this section, it is assumed that—
(1) The critical engine is inoperative;
(2) The propeller of the inoperative engine is in the minimum drag position;
(3) The wing flaps and landing gear are in the most favorable position;
(4) The operating engines are operating at the maximum continuous power available;
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(5) The airplane is operating in standard atmosphere; and
(6) The weight of the airplane is progressively reduced by the anticipated consumption of fuel and oil.

§ 135.393 Large nontransport category airplanes: Landing limitations: Destination airports.

(a) No person operating a large nontransport category airplane may take off that airplane at a weight that—
(1) Allowing for anticipated consumption of fuel and oil, is greater than the weight that would allow a full stop landing within 60 percent of the effective length of the most suitable runway at the destination airport; and
(2) Is greater than the weight allowable if the landing is to be made on the runway—
   (i) With the greatest effective length in still air; and
   (ii) Required by the probable wind, taking into account not more than 50 percent of the headwind component or not less than 150 percent of the tailwind component.
(b) For the purpose of this section, it is assumed that—
(1) The airplane passes directly over the intersection of the obstruction clearance plane and the runway at a height of 50 feet in a steady gliding approach at a true indicated airspeed of at least 1.3 Vso;
(2) The landing does not require exceptional pilot skill; and
(3) The airplane is operating in standard atmosphere.

§ 135.395 Large nontransport category airplanes: Landing limitations: Alternate airports.

No person may select an airport as an alternate airport for a large nontransport category airplane unless that airplane (at the weight anticipated at the time of arrival), based on the assumptions in §135.393(b), can be brought to a full stop landing within 70 percent of the effective length of the runway.

§ 135.397 Small transport category airplane performance operating limitations.

(a) No person may operate a reciprocating engine powered small transport category airplane unless that person complies with the weight limitations in §135.365, the takeoff limitations in §135.367 (except paragraph (a)(3)), and the landing limitations in §§135.375 and 135.377.
(b) No person may operate a turbine engine powered small transport category airplane unless that person complies with the takeoff limitations in §135.379 (except paragraphs (d) and (f)) and the landing limitations in §§135.385 and 135.387.

§ 135.398 Commuter category airplanes performance operating limitations.

(a) No person may operate a commuter category airplane unless that person complies with the takeoff weight limitations in the approved Airplane Flight Manual.
(b) No person may take off an airplane type certificated in the commuter category at a weight greater than that listed in the Airplane Flight Manual that allows a net takeoff flight path that clears all obstacles either by a height of at least 35 feet vertically, or at least 200 feet horizontally within the airport boundaries and by at least 300 feet horizontally after passing the boundaries.
(c) No person may operate a commuter category airplane unless that person complies with the landing limitations prescribed in §§135.385 and 135.387 of this part. For purposes of this paragraph, §§135.385 and 135.387 are applicable to all commuter category airplanes notwithstanding their stated applicability to turbine-engine-powered large transport category airplanes.
(d) In determining maximum weights, minimum distances and flight paths under paragraphs (a) through (c) of this section, correction must be made for the runway to be used, the elevation of the airport, the effective runway gradient, and ambient temperature, and wind component at the time of takeoff.
(e) For the purposes of this section, the assumption is that the airplane is not banked before reaching a height of 50 feet as shown by the net takeoff flight path data in the Airplane Flight Manual and thereafter the maximum bank is not more than 15 degrees.

[Doc. No. 23516, 52 FR 1836, Jan. 15, 1987]
§ 135.399 Small nontransport category airplane performance operating limitations.

(a) No person may operate a reciprocating engine or turbopropeller-powered small airplane that is certificated under §135.169(b) (2), (3), (4), (5), or (6) unless that person complies with the takeoff weight limitations in the approved Airplane Flight Manual or equivalent for operations under this part, and, if the airplane is certificated under §135.169(b) (4) or (5) with the landing weight limitations in the Approved Airplane Flight Manual or equivalent for operations under this part.

(b) No person may operate an airplane that is certificated under §135.169(b)(6) unless that person complies with the landing weight limitations in the Approved Airplane Flight Manual or equivalent for operations under this part. For purposes of this paragraph, §§135.385 and 135.387 are applicable to reciprocating and turbopropeller-powered small airplanes notwithstanding their stated applicability to turbine engine powered large transport category airplanes.

[44 FR 53731, Sept. 17, 1979]

Subpart J—Maintenance, Preventive Maintenance, and Alterations

§ 135.411 Applicability.

(a) This subpart prescribes rules in addition to those in other parts of this chapter for the maintenance, preventive maintenance, and alterations for each certificate holder as follows:

(1) Aircraft that are type certificated for a passenger seating configuration, excluding any pilot seat, of nine seats or less, shall be maintained under parts 91 and 43 of this chapter and §§135.415, 135.417, and 135.421. An approved aircraft inspection program may be used under §135.419.

(2) Aircraft that are type certificated for a passenger seating configuration, excluding any pilot seat, of ten seats or more, shall be maintained under a maintenance program in §§135.415, 135.417, and 135.423 through 135.443.

(b) A certificate holder who is not otherwise required, may elect to main-
fumes in the crew compartment or passenger cabin during flight;
(6) Engine shutdown during flight because of flameout;
(7) Engine shutdown during flight when external damage to the engine or aircraft structure occurs;
(8) Engine shutdown during flight due to foreign object ingestion or icing;
(9) Shutdown of more than one engine during flight;
(10) A propeller feathering system or ability of the system to control overspeed during flight;
(11) A fuel or fuel-dumping system that affects fuel flow or causes hazardous leakage during flight;
(12) An unwanted landing gear extension or retraction or opening or closing of landing gear doors during flight;
(13) Brake system components that result in loss of brake actuating force when the aircraft is in motion on the ground;
(14) Aircraft structure that requires major repair;
(15) Cracks, permanent deformation, or corrosion of aircraft structures, if more than the maximum acceptable to the manufacturer or the FAA; and
(16) Aircraft components or systems that result in taking emergency actions during flight (except action to shut-down an engine).
(b) For the purpose of this section, during flight means the period from the moment the aircraft leaves the surface of the earth on takeoff until it touches down on landing.
(c) In addition to the reports required by paragraph (a) of this section, each certificate holder shall report any other failure, malfunction, or defect in an aircraft that occurs or is detected at any time if, in its opinion, the failure, malfunction, or defect has endangered or may endanger the safe operation of the aircraft.
(d) Each certificate holder shall send each report required by this section, in writing, covering each 24-hour period beginning at 0900 hours local time of each day and ending at 0900 hours local time on the next day to the FAA Flight Standards District Office charged with the overall inspection of the certificate holder. Each report of occurrences during a 24-hour period must be mailed or delivered to that office within the next 72 hours. However, a report that is due on Saturday or Sunday may be mailed or delivered on the following Monday and one that is due on a holiday may be mailed or delivered on the next work day. For aircraft operated in areas where mail is not collected, reports may be mailed or delivered within 72 hours after the aircraft returns to a point where the mail is collected.
(e) The certificate holder shall transmit the reports required by this section on a form and in a manner prescribed by the Administrator, and shall include as much of the following as is available:
(1) The type and identification number of the aircraft.
(2) The name of the operator.
(3) The date.
(4) The nature of the failure, malfunction, or defect.
(5) Identification of the part and system involved, including available information pertaining to type designation of the major component and time since last overhaul, if known.
(6) Apparent cause of the failure, malfunction or defect (e.g., wear, crack, design deficiency, or personnel error).
(7) Other pertinent information necessary for more complete identification, determination of seriousness, or corrective action.
(f) A certificate holder that is also the holder of a type certificate (including a supplemental type certificate), a Parts Manufacturer Approval, or a Technical Standard Order Authorization, or that is the licensee of a type certificate need not report a failure, malfunction, or defect under this section if the failure, malfunction, or defect has been reported by it under §21.3 or §37.17 of this chapter or under the accident reporting provisions of part 830 of the regulations of the National Transportation Safety Board.
(g) No person may withhold a report required by this section even though all information required by this section is not available.
(h) When the certificate holder gets additional information, including information from the manufacturer or
§ 135.417 Mechanical interruption summary report.

Each certificate holder shall mail or deliver, before the end of the 10th day of the following month, a summary report of the following occurrences in multiengine aircraft for the preceding month to the certificate-holding district office:

(a) Each interruption to a flight, unscheduled change of aircraft en route, or unscheduled stop or diversion from a route, caused by known or suspected mechanical difficulties or malfunctions that are not required to be reported under § 135.415.

(b) The number of propeller featherings in flight, listed by type of propeller and engine and aircraft on which it was installed. Propeller featherings for training, demonstration, or flight check purposes need not be reported.

§ 135.419 Approved aircraft inspection program.

(a) Whenever the Administrator finds that the aircraft inspections required or allowed under part 91 of this chapter are not adequate to meet this part, or upon application by a certificate holder, the Administrator may amend the certificate holder’s operations specifications under § 135.17, to require or allow an approved aircraft inspection program for any make and model aircraft of which the certificate holder has the exclusive use of at least one aircraft (as defined in § 135.25(b)).

(b) A certificate holder who applies for an amendment of its operations specifications to allow an approved aircraft inspection program must submit that program with its application for approval by the Administrator.

(c) Each certificate holder who is required by its operations specifications to have an approved aircraft inspection program shall submit a program for approval by the Administrator within 30 days of the amendment of its operations specifications or within any other period that the Administrator may prescribe in the operations specifications.

(d) The aircraft inspection program submitted for approval by the Administrator must contain the following:

1. Instructions and procedures for the conduct of aircraft inspections (which must include necessary tests and checks), setting forth in detail the parts and areas of the airframe, engines, propellers, rotors, and appliances, including emergency equipment, that must be inspected.

2. A schedule for the performance of the aircraft inspections under paragraph (d)(1) of this section expressed in terms of the time in service, calendar time, number of system operations, or any combination of these.

3. Instructions and procedures for recording discrepancies found during inspections and correction or deferral of discrepancies including form and disposition of records.

(e) After approval, the certificate holder shall include the approved aircraft inspection program in the manual required by § 135.21.

(f) Whenever the Administrator finds that revisions to an approved aircraft inspection program are necessary for the continued adequacy of the program, the certificate holder shall, after notification by the Administrator, make any changes in the program found by the Administrator to be necessary. The certificate holder may petition the Administrator to reconsider the notice to make any changes in a program. The petition must be filed with the representatives of the Administrator assigned to it within 30 days after the certificate holder receives the notice. Except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the Administrator.

(g) Each certificate holder who has an approved aircraft inspection program shall have each aircraft that is subject to the program inspected in accordance with the program.

(h) The registration number of each aircraft that is subject to an approved
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§ 135.421 Additional maintenance requirements.

(a) Each certificate holder who operates an aircraft type certificated for a passenger seating configuration, excluding any pilot seat, of nine seats or less, must comply with the manufacturer’s recommended maintenance program, or a program approved by the Administrator, for each aircraft engine, propeller, rotor, and each item of emergency equipment required by this chapter.

(b) For the purpose of this section, a manufacturer’s maintenance program is one which is contained in the maintenance manual or maintenance instructions set forth by the manufacturer as required by this chapter for the aircraft, aircraft engine, propeller, rotor or item of emergency equipment.

(c) For each single engine aircraft to be used in passenger-carrying IFR operations, each certificate holder must incorporate into its maintenance program either:

1. The manufacturer’s recommended engine trend monitoring program, which includes an oil analysis, if appropriate, or

2. An FAA approved engine trend monitoring program that includes an oil analysis at each 100 hour interval or at the manufacturer’s suggested interval, whichever is more frequent.

(d) For single engine aircraft to be used in passenger-carrying IFR operations, written maintenance instructions containing the methods, techniques, and practices necessary to maintain the equipment specified in §§135.105, and 135.163 (f) and (h) are required.

(e) No certificate holder may operate a single engine aircraft under IFR, carrying passengers, unless the certificate holder records and maintains in the engine maintenance records the results of each test, observation, and inspection required by the applicable engine trend monitoring program specified in (c) (1) and (2) of this section.

§ 135.423 Maintenance, preventive maintenance, and alteration organization.

(a) Each certificate holder that performs any of its maintenance (other than required inspections), preventive maintenance, or alterations, and each person with whom it arranges for the performance of that work, must have an organization adequate to perform the work.

(b) Each certificate holder that performs any inspections required by its manual under §135.427(b) (2) or (3), (in this subpart referred to as required inspections), and each person with whom it arranges for the performance of that work, must have an organization adequate to perform that work.

(c) Each person performing required inspections in addition to other maintenance, preventive maintenance, or alterations, shall organize the performance of those functions so as to separate the required inspection functions from the other maintenance, preventive maintenance, and alteration functions. The separation shall be below the level of administrative control at which overall responsibility for the required inspection functions and other maintenance, preventive maintenance, and alteration functions is exercised.

§ 135.425 Maintenance, preventive maintenance, and alteration programs.

Each certificate holder shall have an inspection program and a program covering other maintenance, preventive maintenance, and alterations, that ensures that—

(a) Maintenance, preventive maintenance, and alterations performed by it, or by other persons, are performed under the certificate holder’s manual;

(b) Competent personnel and adequate facilities and equipment are provided for the proper performance of maintenance, preventive maintenance, and alterations; and

(c) Each aircraft released to service is airworthy and has been properly maintained for operation under this part.

§ 135.427 Manual requirements.

(a) Each certificate holder shall put in its manual the chart or description

of the certificate holder's organization required by §135.423 and a list of persons with whom it has arranged for the performance of any of its required inspections, other maintenance, preventive maintenance, or alterations, including a general description of that work.

(b) Each certificate holder shall put in its manual the programs required by §135.425 that must be followed in performing maintenance, preventive maintenance, and alterations of that certificate holder's aircraft, including airframes, aircraft engines, propellers, rotors, appliances, emergency equipment, and parts, and must include at least the following:

1. The method of performing routine and nonroutine maintenance (other than required inspections), preventive maintenance, and alterations.
2. A designation of the items of maintenance and alteration that must be inspected (required inspections) including at least those that could result in a failure, malfunction, or defect endangering the safe operation of the aircraft, if not performed properly or if improper parts or materials are used.
3. The method of performing required inspections and a designation by occupational title of personnel authorized to perform each required inspection.
4. Procedures for the reinspection of work performed under previous required inspection findings (buy-back procedures).
5. Procedures, standards, and limits necessary for required inspections and acceptance or rejection of the items required to be inspected and for periodic inspection and calibration of precision tools, measuring devices, and test equipment.
6. Procedures to ensure that all required inspections are performed.
7. Instructions to prevent any person who performs any item of work from performing any required inspection of that work.
8. Instructions and procedures to prevent any decision of an inspector regarding any required inspection from being countermanded by persons other than supervisory personnel of the inspection unit, or a person at the level of administrative control that has overall responsibility for the management of both the required inspection functions and the other maintenance, preventive maintenance, and alterations functions.
9. Procedures to ensure that required inspections, other maintenance, preventive maintenance, and alterations that are not completed as a result of work interruptions are properly completed before the aircraft is released to service.

(c) Each certificate holder shall put in its manual a suitable system (which may include a coded system) that provides for the retention of the following information:

1. A description (or reference to data acceptable to the Administrator) of the work performed;
2. The name of the person performing the work if the work is performed by a person outside the organization of the certificate holder; and
3. The name or other positive identification of the individual approving the work.

(d) For the purposes of this part, the certificate holder must prepare that part of its manual containing maintenance information and instructions, in whole or in part, in printed form or other form, acceptable to the Administrator, that is retrievable in the English language.

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§ 135.435 Certificate requirements.

(a) Except for maintenance, preventive maintenance, alterations, and required inspections performed by repair stations certificated under the provisions of subpart C of part 145 of this chapter, each person who is directly in charge of maintenance, preventive maintenance, or alterations, and each person performing required inspections must hold an appropriate airman certificate.

(b) For the purpose of this section, a person directly in charge is each person assigned to a position in which that person is responsible for the work of a
§ 135.437 Shop or station that performs maintenance, preventive maintenance, alterations, or other functions affecting airworthiness. A person who is directly in charge need not physically observe and direct each worker constantly but must be available for consultation and decision on matters requiring instruction or decision from higher authority than that of the person performing the work.

§ 135.437 Authority to perform and approve maintenance, preventive maintenance, and alterations.

(a) A certificate holder may perform or make arrangements with other persons to perform maintenance, preventive maintenance, and alterations as provided in its maintenance manual. In addition, a certificate holder may perform these functions for another certificate holder as provided in the maintenance manual of the other certificate holder.

(b) A certificate holder may approve any airframe, aircraft engine, propeller, rotor, or appliance for return to service after maintenance, preventive maintenance, or alterations that are performed under paragraph (a) of this section. However, in the case of a major repair or alteration, the work must have been done in accordance with technical data approved by the Administrator.

§ 135.439 Maintenance recording requirements.

(a) Each certificate holder shall keep (using the system specified in the manual required in §135.427) the following records for the periods specified in paragraph (b) of this section:

(i) All the records necessary to show that all requirements for the issuance of an airworthiness release under §135.443 have been met.

(ii) Records containing the following information:

(iii) The total time in service of the airframe, engine, propeller, and rotor.

(iv) The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.

(b) The time since last overhaul of each item installed on the aircraft which are required to be overhauled on a specified time basis.

(iv) The identification of the current inspection status of the aircraft, including the time since the last inspections required by the inspection program under which the aircraft and its appliances are maintained.

(v) The current status of applicable airworthiness directives, including the date and methods of compliance, and, if the airworthiness directive involves recurring action, the time and date when the next action is required.

(vi) A list of current major alterations and repairs to each airframe, engine, propeller, rotor, and appliance.

§ 135.441 Transfer of maintenance records.

Each certificate holder who sells a United States registered aircraft shall transfer to the purchaser, at the time of the sale, the following records of that aircraft, in plain language form or in coded form which provides for the preservation and retrieval of information in a manner acceptable to the Administrator:

(a) The records specified in §135.439(a)(1) which are not included in
the records covered by paragraph (a) of this section, except that the purchaser may allow the seller to keep physical custody of such records. However, custody of records by the seller does not relieve the purchaser of its responsibility under §135.439(c) to make the records available for inspection by the Administrator or any representative of the National Transportation Safety Board.

§135.443 Airworthiness release or aircraft maintenance log entry.

(a) No certificate holder may operate an aircraft after maintenance, preventive maintenance, or alterations are performed on the aircraft unless the certificate holder prepares, or causes the person with whom the certificate holder arranges for the performance of the maintenance, preventive maintenance, or alterations, to prepare—

(1) An airworthiness release; or

(2) An appropriate entry in the aircraft maintenance log.

(b) The airworthiness release or log entry required by paragraph (a) of this section must—

(1) Be prepared in accordance with the procedure in the certificate holder’s manual;

(2) Include a certification that—

(i) The work was performed in accordance with the requirements of the certificate holder’s manual;

(ii) All items required to be inspected were inspected by an authorized person who determined that the work was satisfactorily completed;

(iii) No known condition exists that would make the aircraft unairworthy;

(iv) So far as the work performed is concerned, the aircraft is in condition for safe operation; and

(3) Be signed by an authorized certificated mechanic or repairman, except that a certificated repairman may sign the release or entry only for the work for which that person is employed and for which that person is certificated.

Notwithstanding paragraph (b)(3) of this section, after maintenance, preventive maintenance, or alterations performed by a repair station certificated under the provisions of subpart C of part 145, the airworthiness release or log entry required by paragraph (a) of this section may be signed by a person authorized by that repair station.

(c) Instead of restating each of the conditions of the certification required by paragraph (b) of this section, the certificate holder may state in its manual that the signature of an authorized certificated mechanic or repairman constitutes that certification.


APPENDIX A TO PART 135—ADDITIONAL AIRWORTHINESS STANDARDS FOR 10 OR MORE PASSENGER AIRPLANES

Applicability

1. Applicability. This appendix prescribes the additional airworthiness standards required by §135.169.

2. References. Unless otherwise provided, references in this appendix to specific sections of part 23 of the Federal Aviation Regulations (FAR part 23) are to those sections of part 23 in effect on March 30, 1967.

Flight Requirements

3. General. Compliance must be shown with the applicable requirements of subpart B of FAR part 23, as supplemented or modified in §§4 through 10.

Performance

4. General. (a) Unless otherwise prescribed in this appendix, compliance with each applicable performance requirement in sections 4 through 7 must be shown for ambient atmospheric conditions and still air.

(b) The performance must correspond to the propulsive thrust available under the particular ambient atmospheric conditions and the particular flight condition. The available propulsive thrust must correspond to engine power or thrust, not exceeding the approved power or thrust less—

(1) Installation losses; and

(2) The power or equivalent thrust absorbed by the accessories and services appropriate to the particular ambient atmospheric conditions and the particular flight condition.

(c) Unless otherwise prescribed in this appendix, the applicant must select the takeoff, en route, and landing configurations for the airplane.

(d) The airplane configuration may vary with weight, altitude, and temperature, to the extent they are compatible with the operating procedures required by paragraph (e) of this section.
(e) Unless otherwise prescribed in this appendix, in determining the critical engine inoperative takeoff performance, the accelerate-stop distance, takeoff distance, changes in the airplane’s configuration, speed, power, and thrust must be made under procedures established by the applicant for operation in service.

(f) Procedures for the execution of balked landings must be established by the applicant and included in the Airplane Flight Manual.

(g) The procedures established under paragraphs (e) and (f) of this section must—

(1) Be able to be consistently executed in service by a crew of average skill;

(2) Use methods or devices that are safe and reliable; and

(3) Include allowance for any time delays, in the execution of the procedures, that may reasonably be expected in service.

5. Takeoff—(a) General. Takeoff speeds, the accelerate-stop distance, the takeoff distance, and the one-engine-inoperative takeoff flight path data (described in paragraphs (b), (c), (d), and (f) of this section), must be determined for—

(1) Each weight, altitude, and ambient temperature within the operational limits selected by the applicant;

(2) The selected configuration for takeoff;

(3) The center of gravity in the most unfavorable position;

(4) The operating engine within approved operating limitations; and

(5) Takeoff data based on smooth, dry, hard-surface runway.

(b) Takeoff speeds. (1) The decision speed $V_{1}$ is the calibrated airspeed on the ground at which, as a result of engine failure or other reasons, the pilot is assumed to have made a decision to continue or discontinue the takeoff. The speed $V_{1}$ must be selected by the applicant but may not be less than—

(i) $1.10V_{MC} + 10$;

(ii) $1.10V_{MC}$;

(iii) A speed that allows acceleration to $V_{1}$ and stop under paragraph (c) of this section; or

(iv) A speed at which the airplane can be rotated for takeoff and shown to be adequate to safely continue the takeoff, using normal piloting skill, when the critical engine is suddenly made inoperative.

(2) The initial climb out speed $V_{2}$ in terms of calibrated airspeed, must be selected by the applicant so as to allow the gradient of climb required in section 6(b)(2), but it must not be less than $V_{1}$ or less than $1.2V_{MC}$.

(3) Other essential take off speeds necessary for safe operation of the airplane.

(c) Accelerate-stop distance. (1) The accelerate-stop distance is the sum of the distances necessary to—

(i) Accelerate the airplane from a standing start to $V_{1}$; and

(ii) Come to a full stop from the point at which $V_{1}$ is reached assuming that in the case of engine failure, failure of the critical engine is recognized by the pilot at the speed $V_{1}$.

(2) Means other than wheel brakes may be used to determine the accelerate-stop distance if that means is available with the critical engine inoperative and—

(i) Is safe and reliable;

(ii) Is used so that consistent results can be expected under normal operating conditions; and

(iii) Is such that exceptional skill is not required to control the airplane.

(d) All engines operating takeoff distance. The all engine operating takeoff distance is the horizontal distance required to takeoff and climb to a height of 50 feet above the takeoff surface under the procedures in FAR 23.51(a).

(e) One-engine-inoperative takeoff. Determine the weight for each altitude and temperature within the operational limits established for the airplane, at which the airplane has the capability, after failure of the critical engine at $V_{1}$ determined under paragraph (b) of this section, to take off and climb at not less than $V_{2}$, to a height 1,000 feet above the takeoff surface and attain the speed and configuration at which compliance is shown with the en route one-engine-inoperative gradient of climb specified in section 6(c).

(f) One-engine-inoperative takeoff flight path data. The one-engine-inoperative takeoff flight path data consist of takeoff flight paths extending from a standing start to a point in the takeoff at which the airplane reaches a height 1,000 feet above the takeoff surface under paragraph (e) of this section.

6. Climb—(a) Landing climb: All-engines-operating. The maximum weight must be determined with the airplane in the landing configuration, for each altitude, and ambient temperature within the operational limits established for the airplane, with the most unfavorable center of gravity, and out-of-ground effect in free air, at which the steady gradient of climb will not be less than 3.3 percent, with:

(1) The engines at the power that is available 8 seconds after initiation of movement of the power or thrust controls from the minimum flight idle to the takeoff position.

(2) A climb speed not greater than the approach speed established under section 7 and not less than the greater of $1.0V_{MC}$ or $1.10V_{1}$.

(b) Takeoff climb: one-engine-inoperative. The maximum weight at which the airplane meets the minimum climb performance specified in paragraphs (3) and (2) of this paragraph must be determined for each altitude and ambient temperature within the operational limits established for the airplane, out of ground effect in free air, with the airplane in the takeoff configuration, with the
most unfavorable center of gravity, the critical engine inoperative, the remaining engines at the maximum takeoff power or thrust, and the propeller of the inoperative engine windmilling with the propeller controls in the normal position except that, if an approved automatic feathering system is installed, the propellers may be in the feathered position:

(1) Takeoff: landing gear extended. The minimum steady gradient of climb must be measurable at the speed \( V_2 \).

(2) Takeoff: landing gear retracted. The minimum steady gradient of climb may not be less than 2 percent at speed \( V_2 \). For airplanes with fixed landing gear this requirement must be met with the landing gear extended.

(c) En route climb: one-engine-inoperative. The maximum weight must be determined for each altitude and ambient temperature within the operational limits established for the airplane, at which the steady gradient of climb is not less 1.2 percent at an altitude 1,000 feet above the takeoff surface, with the airplane in the en route configuration, the critical engine inoperative, the remaining engine at the maximum continuous power or thrust, and the most unfavorable center of gravity.

7. Landing. (a) The landing field length described in paragraph (b) of this section must be determined for standard atmosphere at each weight and altitude within the operational limits established by the applicant.

(b) The landing field length is equal to the landing distance determined under FAR 23.75(a) divided by a factor of 0.6 for the destination airport and 0.7 for the alternate airport. Instead of the gliding approach specified in FAR 23.75(a)(1), the landing may be preceded by a steady approach down to the 50-foot height at a gradient of descent not greater than 5.2 percent (\( \pm \)) at a calibrated airspeed not less than \( 1.3V_{S1} \).

Trimmability

8-Trim (a) Lateral and directional trim. The airplane must maintain lateral and directional trim in level flight at a speed of \( V_H \) or \( V_{MO}/M_{D0} \), whichever is lower, with landing gear and wing flaps retracted.

(b) Longitudinal trim. The airplane must maintain longitudinal trim during the following conditions, except that it need not maintain trim at a speed greater than \( V_{MO}/M_{D0} \):

(1) In the approach conditions specified in FAR 23.16(c)(3) through (5), except that instead of the speeds specified in those paragraphs, trim must be maintained with a stick force of not more than 10 pounds down to a speed used in showing compliance with section 7 or \( 1.4V_{S1} \) whichever is lower.

(2) In level flight at any speed from \( V_H \) or \( V_{MO}/M_{D0} \), whichever is lower, to either \( V_S \) or \( 1.4V_{S1} \), with the landing gear and wing flaps retracted.
Instruments: Installation

12. Arrangement and visibility. Each instrument must meet FAR 23.1321 and in addition:
(a) Each flight, navigation, and powerplant instrument for use by any pilot must be plainly visible to the pilot from the pilot’s station with the minimum practicable deviation from the pilot’s normal position and line of vision when the pilot is looking forward along the flight path.
(b) The flight instruments required by FAR 23.1303 and the applicable operating rules must be grouped on the instrument panel and centered as nearly as practicable about the vertical plane of each pilot’s forward vision. In addition—
(1) The instrument that most effectively indicates the attitude must be in the panel in the top center position;
(2) The instrument that most effectively indicates the airspeed must be on the panel directly to the left of the instrument in the top center position;
(3) The instrument that most effectively indicates altitude must be adjacent to and directly to the right of the instrument in the top center position; and
(4) The instrument that most effectively indicates direction of flight must be adjacent to and directly below the instrument in the top center position.

13. Airspeed indicating system. Each airspeed indicating system must meet FAR 23.1323 and in addition:
(a) Airspeed indicating instruments must be of an approved type and must be calibrated to indicate true airspeed at sea level in the standard atmosphere with a minimum practicable instrument calibration error when the corresponding pitot and static pressures are supplied to the instruments.
(b) The airspeed indicating system must be calibrated to determine the system error, i.e., the relation between IAS and CAS, in flight and during the accelerate-takeoff ground run. The ground run calibration must be obtained between 0.8 of the minimum value to 1.3 times the maximum value of $V_{j}$, considering the approved ranges of altitude and weight. The ground run calibration is determined assuming an engine failure at the minimum value of $V_{j}$.
(c) The airspeed error of the installation excluding the instrument calibration error, must not exceed 3 percent or 5 knots whichever is greater, throughout the speed range from $V_{NO}$ to 1.3$V_{j}$ with flaps retracted and from 1.3$V_{NO}$ to $V_{FE}$ with flaps in the landing position.
(d) Information showing the relationship between IAS and CAS must be shown in the Airplane Flight Manual.

14. Static air vent system. The static air vent system must meet FAR 23.1325. The altimeter system calibration must be determined and shown in the Airplane Flight Manual.

Operating Limitations and Information

15. Maximum operating limit speed $V_{MO}/M_{MO}$. Instead of establishing operating limitations based on $V_{NE}$ and $V_{NO}$, the applicant must establish a maximum operating limit speed $V_{MO}/M_{MO}$ as follows:
(a) The maximum operating limit speed must not exceed the design cruising speed $V_{C}$, and must be sufficiently below $V_{NO}/M_{NO}$, or $V_{DF}/M_{DF}$ to make it highly improbable that the latter speeds will be inadvertently exceeded in flight.
(b) The speed $V_{MO}$ must not exceed 0.8$V_{NO}/M_{NO}$ or 0.8$V_{DF}/M_{DF}$ unless flight demonstrations involving upsets as specified by the Administrator indicates a lower speed margin will not result in speeds exceeding $V_{NO}/M_{NO}$ or $V_{DF}$. Atmospheric variations, horizontal gusts, system and equipment errors, and airframe production variations are taken into account.

16. Minimum flight crew. In addition to meeting FAR 23.1523, the applicant must establish the minimum number and type of qualified flight crew personnel sufficient for safe operation of the airplane considering—
(a) Each kind of operation for which the applicant desires approval;
(b) The workload on each crewmember considering the following:
(1) Flight path control;
(2) Collision avoidance;
(3) Navigation;
(4) Communications;
(5) Operation and monitoring of all essential aircraft systems;
(6) Command decisions; and
(c) The accessibility and ease of operation of necessary controls by the appropriate crewmember during all normal and emergency operations when at the crewmember flight station.

17. Airspeed indicator. The airspeed indicator must meet FAR 23.1545 except that, the airspeed notations and markings in terms of $V_{NO}$ and $V_{NH}$ must be replaced by the $V_{MO}/M_{MO}$ notations. The airspeed indicator markings must be easily read and understood by the pilot. A placard adjacent to the airspeed indicator is an acceptable means of showing compliance with FAR 23.1545(c).

Airplane Flight Manual

18. General. The Airplane Flight Manual must be prepared under FARs 23.1583 and 23.1587, and in addition the operating limitations and performance information in sections 19 and 20 must be included.

19. Operating limitations. The Airplane Flight Manual must include the following limitations—
(a) Airspeed limitations.

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speed is authorized for flight test or pilot training;

(2) If an airspeed limitation is based upon compressibility effects, a statement to this effect and information as to any symptoms, the probable behavior of the airplane, and the recommended recovery procedures; and

(3) The airspeed limits, shown in terms of $V_{NO}/M_{NO}$ instead of $V_{NO}$ and $V_{NE}$.

(b) Takeoff weight limitations. The maximum takeoff weight for each airport elevation, ambient temperature, and available takeoff runway length within the range selected by the applicant may not exceed the weight at which—

(1) The all-engine-operating takeoff distance determined under section 5(b) or the accelerate-stop distance determined under section 5(c), whichever is greater, is equal to the available runway length;

(2) The airplane complies with the one-engine-inoperative takeoff requirements specified in section 5(e); and

(3) The airplane complies with the one-engine-inoperative takeoff and en route climb requirements specified in sections 6(b) and (c).

(c) Landing weight limitations. The maximum landing weight for each airport elevation (standard temperature) and available landing runway length, within the range selected by the applicant. This weight may not exceed the weight at which the landing field length determined under section 7(b) is equal to the available runway length;

(2) The airplane complies with the one-engine-inoperative landing and climb performance information was obtained, including the airspeed at the 50-foot height used to determine landing distances.

(c) The performance information (determined by extrapolation and computed for the range of weights between the maximum landing and takeoff weights) for—

(1) Climb in the landing configuration; and

(2) Landing distance.

(d) Procedure established under section 4 related to the limitations and information required by this section in the form of guidance material including any relevant limitations or information.

(e) An explanation of significant or unusual flight or ground handling characteristics of the airplane.

(f) Airspeeds, as indicated airspeeds, corresponding to those determined for takeoff under section 5(b).

21. Maximum operating altitudes. The maximum operating altitude to which operation is allowed, as limited by flight, structural, powerplant, functional, or equipment characteristics, must be specified in the Aircraft Flight Manual.

22. Stowage provision for airplane flight manual. Provision must be made for stowing the Airplane Flight Manual in a suitable fixed container which is readily accessible to the pilot.


Airframe Requirements

Flight Loads

24. Engine torque. (a) Each turbopropeller engine mount and its supporting structure must be designed for the torque effects of:

1. The conditions in FAR 23.361(a).

2. The limit engine torque corresponding to takeoff power and propeller speed multiplied by a factor accounting for propeller control system malfunction, including quick feathering action, simultaneously with 1g level flight loads. In the absence of a rational analysis, a factor of 1.6 must be used.

(b) The limit torque is obtained by multiplying the mean torque by a factor of 1.25.

25. Turbine engine gyroscopic loads. Each turbopropeller engine mount and its supporting structure must be designed for the gyroscopic loads that result, with the engines at maximum continuous r.p.m., under either—

(a) The conditions in FARs 23.361 and 23.423; or

(b) All possible combinations of the following:

1. A yaw velocity of 2.5 radians per second.

2. A pitch velocity of 1.0 radians per second.

3. A normal load factor of 2.5.


26. Unsymmetrical loads due to engine failure. (a) Turbopropeller powered airplanes must be designed for the unsymmetrical loads resulting from the failure of the critical engine including the following conditions in combination with a single malfunction of the propeller drag limiting system, considering the probable pilot corrective action on the flight controls:

1. At speeds between $V_{mo}$ and $V_{o}$, the loads resulting from power failure because of fuel flow interruption are considered to be limit loads.
(2) At speeds between $V_{mo}$ and $V_c$, the loads resulting from the disconnection of the engine compressor from the turbine or from loss of the turbine blades are considered to be ultimate loads.

(3) The time history of the thrust decay and drag buildup occurring as a result of the prescribed engine failures must be substantiated by test or other data applicable to the particular engine-propeller combination.

(4) The timing and magnitude of the probable pilot corrective action must be conservatively estimated, considering the characteristics of the particular engine-propeller-airplane combination.

(b) Pilot corrective action may be assumed to be initiated at the time maximum yawing velocity is reached, but not earlier than 2 seconds after the engine failure. The magnitude of the corrective action may be based on the control forces in FAR 23.397 except that lower forces may be assumed where it is shown by analysis or test that these forces can control the yaw and roll resulting from the prescribed engine failure conditions.

Ground Loads

27. Dual wheel landing gear units. Each dual wheel landing gear unit and its supporting structure must be shown to comply with the following:

(a) Pivoting. The airplane must be assumed to pivot about one side of the main gear with the brakes on that side locked. The limit vertical load factor must be 1.0 and the coefficient of friction 0.8. This condition need apply only to the main gear and its supporting structure.

(b) Unequal tire inflation. A 60–40 percent distribution of the loads established under FAR 23.471 through FAR 23.483 must be applied to the dual wheels.

(c) Flat tire. (1) Sixty percent of the loads in FAR 23.471 through FAR 23.483 must be applied to either wheel in a unit.

(2) Sixty percent of the limit drag and side loads and 100 percent of the limit vertical load established under FARs 23.471 and 23.483 must be applied to either wheel in a unit except that the vertical load need not exceed the maximum vertical load in paragraph (c)(1) of this section.

Fatigue Evaluation

28. Fatigue evaluation of wing and associated structure. Unless it is shown that the structure, operating stress levels, materials and expected use are comparable from a fatigue standpoint to a similar design which has had substantial satisfactory service experience, the strength, detail design, and the fabrication of those parts of the wing, wing carry-through, and attaching structure whose failure would be catastrophic must be evaluated under either—

(a) A fatigue strength investigation in which the structure is shown by analysis, tests, or both to be able to withstand the repeated loads of variable magnitude expected in service; or

(b) A fail-safe strength investigation in which it is shown by analysis, tests, or both that catastrophic failure of the structure is not probable after fatigue, or obvious partial failure, of a principal structural element, and that the remaining structure is able to withstand a static ultimate load factor of 75 percent of the critical limit load factor at $V_c$. These loads must be multiplied by a factor of 1.15 unless the dynamic effects of failure under static load are otherwise considered.

Design and Construction

29. Flutter. For multiengine turbopropeller powered airplanes, a dynamic evaluation must be made and must include—

(a) The significant elastic, inertia, and aerodynamic forces associated with the rotations and displacements of the plane of the propeller; and

(b) Engine-propeller-nacelle stiffness and damping variations appropriate to the particular configuration.

Landing Gear

30. Flap operated landing gear warning device. Airplanes having retractable landing gear and wing flaps must be equipped with a warning device that functions continuously when the wing flaps are extended to a flap position that activates the warning device to give adequate warning before landing, using normal landing procedures, if the landing gear is not fully extended and locked. There may not be a manual shut off for this warning device. The flap position sensing unit may be installed at any suitable location. The system for this device may use any part of the system (including the aural warning device) provided for other landing gear warning devices.

Personnel and Cargo Accommodations

31. Cargo and baggage compartments. Cargo and baggage compartments must be designed to meet FAR 23.767 (a) and (b), and in addition means must be provided to protect passengers from injury by the contents of any cargo or baggage compartment when the ultimate forward inertia force is 9g.

32. Doors and exits. The airplane must meet FAR 23.783 and FAR 23.807 (a)(3), (b), and (c), and in addition:

(a) There must be a means to lock and safeguard each external door and exit against opening in flight either inadvertently by persons, or as a result of mechanical failure. Each external door must be operable from both the inside and the outside.
(b) There must be means for direct visual inspection of the locking mechanism by crewmembers to determine whether external doors and exits, for which the initial opening movement is outward, are fully locked. In addition, there must be a visual means to signal to crewmembers when normally used external doors are closed and fully locked.

(c) The passenger entrance door must qualify as a floor level emergency exit. Each additional required emergency exit except floor level exits must be located over the wing or must be provided with acceptable means to assist the occupants in descending to the ground. In addition to the passenger entrance door:

(1) For a total seating capacity of 15 or less, an emergency exit as defined in FAR 23.807(b) is required on each side of the cabin.

(2) For a total seating capacity of 16 through 23, three emergency exits as defined in FAR 23.807(b) are required with one on the same side as the door and two on the side opposite the door.

(d) An evacuation demonstration must be conducted utilizing the maximum number of occupants for which certification is desired. It must be conducted under simulated night conditions utilizing only the emergency exits on the most critical side of the aircraft. The participants must be representative of average airline passengers with no previous practice or rehearsal for the demonstration. Evacuation must be completed within 90 seconds.

(e) Each emergency exit must be marked with the word “Exit” by a sign which has white letters 1 inch high on a red background 2 inches high, be self-illuminated or independently internally electrically illuminated, and have a minimum luminescence (brightness) of at least 160 microlamberts. The colors may be reversed if the passenger compartment illumination is essentially the same.

(f) Access to window type emergency exits must not be obstructed by seats or seat backs.

(g) The width of the main passenger aisle at any point between seats must equal or exceed the values in the following table:

<table>
<thead>
<tr>
<th>Total seating capacity</th>
<th>Minimum main passenger aisle width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 25 inches from floor</td>
<td>9 inches</td>
</tr>
<tr>
<td>25 inches and more from floor</td>
<td>15 inches</td>
</tr>
</tbody>
</table>

Miscellaneous

33. Lightning strike protection. Parts that are electrically insulated from the basic airframe must be connected to it through lightning arrestors unless a lightning strike on the insulated part—

(a) Is improbable because of shielding by other parts; or
(b) Is not hazardous.

34. Ice protection. If certification with ice protection provisions is desired, compliance with the following must be shown:

(a) The recommended procedures for the use of the ice protection equipment must be set forth in the Airplane Flight Manual.

(b) An analysis must be performed to establish, on the basis of the airplane’s operational needs, the adequacy of the ice protection system for the various components of the airplane. In addition, tests of the ice protection system must be conducted to demonstrate that the airplane is capable of operating safely in continuous maximum and intermittent maximum icing conditions as described in appendix C of part 25 of this chapter.

(c) Compliance with all or portions of this section may be accomplished by reference, where applicable because of similarity of the designs, to analysis and tests performed by the applicant for a type certificated model.

35. Maintenance information. The applicant must make available to the owner at the time of delivery of the airplane the information the applicant considers essential for the proper maintenance of the airplane. That information must include the following:

(a) Description of systems, including electrical, hydraulic, and fuel controls.

(b) Lubrication instructions setting forth the frequency and the lubricants and fluids which are to be used in the various systems.

(c) Pressures and electrical loads applicable to the various systems.

(d) Tolerances and adjustments necessary for proper functioning.

(e) Methods of leveling, raising, and towing.

(f) Methods of balancing control surfaces.

(g) Identification of primary and secondary structures.

(h) Frequency and extent of inspections necessary to the proper operation of the airplane.

(i) Special repair methods applicable to the airplane.

(j) Special inspection techniques, such as X-ray, ultrasonic, and magnetic particle inspection.

(k) List of special tools.

Provision

General

36. Vibration characteristics. For turbo-propeller powered airplanes, the engine installation must not result in vibration characteristics of the engine exceeding those established during the type certification of the engine.

37. In flight restarting of engine. If the engine on turbopropeller powered airplanes cannot be restarted at the maximum cruise
altitude, a determination must be made of the altitude below which restarts can be consistently accomplished. Restart information must be provided in the Airplane Flight Manual.

38. Engines. (a) For turbopropeller powered airplanes. The engine installation must comply with the following:

(1) Engine isolation. The powerplants must be arranged and isolated from each other to allow operation, in at least one configuration, so that the failure or malfunction of any engine, or of any system that can affect the engine, will not—

(i) Prevent the continued safe operation of the remaining engines; or

(ii) Require immediate action by any crew-member for continued safe operation.

(2) Control of engine rotation. There must be a means to individually stop and restart the rotation of any engine in flight except that engine rotation need not be stopped if continued rotation could not jeopardize the safety of the airplane. Each component of the stopping and restarting system on the engine side of the firewall, and that might be exposed to fire, must be at least fire resistant. If hydraulic propeller feathering systems are used for this purpose, the feathering lines must be at least fire resistant under the operating conditions that may be expected to exist during feathering.

(3) Engine speed and gas temperature control devices. The powerplant systems associated with engine control devices, systems, and instrumentation must provide reasonable assurance that those engine operating limitations that adversely affect turbine rotor structural integrity will not be exceeded in service.

(b) For reciprocating engine powered airplanes. To provide engine isolation, the powerplants must be arranged and isolated from each other to allow operation, in at least one configuration, so that the failure or malfunction of any engine, or of any system that can affect that engine, will not—

(1) Prevent the continued safe operation of the remaining engines; or

(2) Require immediate action by any crew-member for continued safe operation.

39. Turbopropeller reversing systems. (a) Turbopropeller reversing systems intended for ground operation must be designed so that no single failure or malfunction of the system will result in unwanted reverse thrust under any expected operating condition. Failure of structural elements need not be considered if the probability of this kind of failure is extremely remote.

(b) Turbopropeller reversing systems intended for in flight use must be designed so that no unsafe condition will result during normal operation of the system, or from any failure (or reasonably likely combination of failures) of the reversing system, under any anticipated condition of operation of the aircraft. Failure of structural elements need not be considered if the probability of this kind of failure is extremely remote.

(c) Compliance with this section may be shown by failure analysis, testing, or both for propeller systems that allow propeller blades to move from the flight low-pitch position to a position that is substantially less than that at the normal flight low-pitch stop position. The analysis may include or be supported by the analysis made to show compliance with the type certification of the propeller and associated installation components. Credit will be given for pertinent analysis and testing completed by the engine and propeller manufacturers.

40. Turbopropeller drag-limiting systems. Turbopropeller drag-limiting systems must be designed so that no single failure or malfunction of any of the systems during normal or emergency operation results in propeller drag in excess of that for which the airplane was designed. Failure of structural elements of the drag-limiting systems need not be considered if the probability of this kind of failure is extremely remote.

41. Turbine engine powerplant operating characteristics. For turbopropeller powered airplanes, the turbine engine powerplant operating characteristics must be investigated in flight to determine that no adverse characteristics (such as stall, surge, or flameout) are present to a hazardous degree, during normal and emergency operation within the range of operating limitations of the airplane and of the engine.

42. Fuel flow. (a) For turbopropeller powered airplanes—

(1) The fuel system must provide for continuous supply of fuel to the engines for normal operation without interruption due to depletion of fuel in any tank other than the main tank; and

(2) The fuel flow rate for turbopropeller engine fuel pump systems must not be less than 125 percent of the fuel flow required to develop the standard sea level atmospheric conditions takeoff power selected and included as an operating limitation in the Airplane Flight Manual.

(b) For reciprocating engine powered airplanes, it is acceptable for the fuel flow rate for each pump system (main and reserve supply) to be 125 percent of the takeoff fuel consumption of the engine.

Fuel System Components

43. Fuel pumps. For turbopropeller powered airplanes, a reliable and independent power source must be provided for each pump used with turbine engines which do not have provisions for mechanically driving the main pumps. It must be demonstrated that the pump installations provide a reliability and durability equivalent to that in FAR 23.99(a).
44. Fuel strainer or filter. For turbopropeller powered airplanes, the following apply:
   (a) There must be a fuel strainer or filter between the tank outlet and the fuel metering device of the engine. In addition, the fuel strainer or filter must be—
       (1) Between the tank outlet and the engine-driven positive displacement pump inlet, if there is an engine-driven positive displacement pump;
       (2) Accessible for drainage and cleaning and, for the strainer screen, easily removable; and
       (3) Mounted so that its weight is not supported by the connecting lines or by the inlet or outlet connections of the strainer or filter itself.
   (b) Unless there are means in the fuel system to prevent the accumulation of ice on the filter, there must be means to automatically maintain the fuel-flow if ice-clogging of the filter occurs; and
   (c) The fuel strainer or filter must be of adequate capacity (for operating limitations established to ensure proper service) and of appropriate mesh to insure proper engine operation, with the fuel contaminated to a degree (for particle size and density) that can be reasonably expected in service. The degree of fuel filtering may not be less than that established for the engine type certification.

45. Lightning strike protection. Protection must be provided against the ignition of flammable vapors in the fuel vent system due to lightning strikes.

Cooling

46. Cooling test procedures for turbopropeller powered airplanes. (a) Turbopropeller powered airplanes must be shown to comply with FAR §23.1041 during takeoff, climb, en route, and landing stages of flight that correspond to the applicable performance requirements. The cooling tests must be conducted with the airplane in the configuration, and operating under the conditions that are critical relative to cooling during each stage of flight. For the cooling tests a temperature is "stabilized" when its rate of change is less than 2°F per minute.
   (b) Temperatures must be stabilized under the conditions from which entry is made into each stage of flight being investigated unless the entry condition is not one during which component and engine fluid temperatures would stabilize, in which case, operation through the full entry condition must be conducted before entry into the stage of flight being investigated to allow temperatures to reach their natural levels at the time of entry. The takeoff cooling test must be preceded by a period during which the powerplant component and engine fluid temperatures are stabilized with the engines at ground idle.
   (c) Cooling tests for each stage of flight must be continued until—
       (1) The component and engine fluid temperatures stabilize;
       (2) The stage of flight is completed; or
       (3) An operating limitation is reached.

Induction System

47. Air induction. For turbopropeller powered airplanes—
   (a) That no hazard to the airplane will result if a duct rupture occurs. This condition must consider that a failure of the duct can occur anywhere between the engine port and the airplane bleed service; and
   (b) That, if the bleed air system is used for direct cabin pressurization, it is not possible for hazardous contamination of the cabin air system to occur in event of lubrication system failure.

48. Induction system icing protection. For turbopropeller powered airplanes, each turbine engine must be able to operate throughout its flight power range without adverse effect on engine operation or serious loss of power or thrust, under the icing conditions specified in appendix C of part 25 of this chapter. In addition, there must be means to indicate to appropriate flight crewmembers the functioning of the powerplant ice protection system.

49. Turbine engine bleed air systems. Turbine engine bleed air systems of turbopropeller powered airplanes must be investigated to determine—
   (a) That no hazard to the airplane will result if a duct rupture occurs. This condition must consider that a failure of the duct can occur anywhere between the engine port and the airplane bleed service; and
   (b) That, if the bleed air system is used for direct cabin pressurization, it is not possible for hazardous contamination of the cabin air system to occur in event of lubrication system failure.

Exhaust System

50. Exhaust system drains. Turbopropeller engine exhaust systems having low spots or pockets must incorporate drains at those locations. These drains must discharge clear of the airplane in normal and ground attitudes to prevent the accumulation of fuel after the failure of an attempted engine start.

Powerplant Controls and Accessories

51. Engine controls. If throttles or power levers for turbopropeller powered airplanes are such that any position of these controls will reduce the fuel flow to the engine(s) below that necessary for satisfactory and safe idle operation of the engine while the airplane is in flight, a means must be provided to prevent inadvertent movement of the control into this position. The means provided must incorporate a positive lock or stop at this idle position and must require a separate and
Pt. 135, App. A

distinct operation by the crew to displace the control from the normal engine operating range.

52. Reverse thrust controls. For turbopropeller powered airplanes, the propeller reverse thrust controls must have a means to prevent their inadvertent operation. The means must have a positive lock or stop at the idle position and must require a separate and distinct operation by the crew to displace the control from the flight regime.

53. Engine ignition systems. Each turbopropeller airplane ignition system must be considered an essential electrical load.

54. Powerplant accessories. The powerplant accessories must meet FAR 23.1163, and if the continued rotation of any accessory remotely driven by the engine is hazardous when malfunctioning occurs, there must be means to prevent rotation without interfering with the continued operation of the engine.

Powerplant Fire Protection

55. Fire detector system. For turbopropeller powered airplanes, the following apply:

(a) There must be a means that ensures prompt detection of fire in the engine compartment. An overtemperature switch in each engine cooling air exit is an acceptable method of meeting this requirement.

(b) Each fire detector must be constructed and installed to withstand the vibration, inertia, and other loads to which it may be subjected in operation.

(c) No fire detector may be affected by any oil, water, other fluids, or fumes that might be present.

(d) There must be means to allow the flight crew to check, in flight, the functioning of each fire detector electric circuit.

(e) Wiring and other components of each fire detector system in a fire zone must be of at least fire resistant.

56. Fire protection, cowling and nacelle skin. For reciprocating engine powered airplanes, the engine cowling must be designed and constructed so that no fire originating in the engine compartment can enter either through openings or by burn through, any other region where it would create additional hazards.

57. Flammable fluid fire protection. If flammable fluids or vapors might be liberated by the leakage of fluid systems in areas other than engine compartments, there must be means to—

(a) Prevent the ignition of those fluids or vapors by any other equipment; or

(b) Control any fire resulting from that ignition.

Equipment

58. Powerplant instruments. (a) The following are required for turbopropeller airplanes:

1. The instruments required by FAR 23.1305 (a) (1) through (4), (b) (2) and (4).

2. A gas temperature indicator for each engine.

3. Free air temperature indicator.

4. A fuel flowmeter indicator for each engine.

5. Oil pressure warning means for each engine.

6. A torque indicator or adequate means for indicating power output for each engine.

7. Fire warning indicator for each engine.

8. A means to indicate when the propeller blade angle is below the low-pitch position corresponding to idle operation in flight.

9. A means to indicate the functioning of the ice protection system for each engine.

(b) For turbopropeller powered airplanes, the turbopropeller blade position indicator must begin indicating when the blade has moved below the flight low-pitch position.

(c) The following instruments are required for reciprocating engine powered airplanes:

1. The instruments required by FAR 23.1305.

2. A cylinder head temperature indicator for each engine.

3. A manifold pressure indicator for each engine.

Systems and Equipments

General

59. Function and installation. The systems and equipment of the airplane must meet FAR 23.1301, and the following:

(a) Each item of additional installed equipment must—

1. Be of a kind and design appropriate to its intended function;

2. Be labeled as to its identification, function, or operating limitations, or any applicable combination of these factors, unless misuse or inadvertent actuation cannot create a hazard;

3. Be installed according to limitations specified for that equipment; and

4. Function properly when installed.

(b) Systems and installations must be designed to safeguard against hazards to the aircraft in the event of their malfunction or failure.

(c) Where an installation, the functioning of which is necessary in showing compliance with the applicable requirements, requires a power supply, that installation must be considered an essential load on the power supply, and the power sources and the distribution system must be capable of supplying the following power loads in probable operation combinations and for probable durations:

1. All essential loads after failure of any prime mover, power converter, or energy storage device.

2. All essential loads after failure of any one engine on two-engine airplanes.
Federal Aviation Administration, DOT

60. Ventilation. The ventilation system of the airplane must meet FAR 23.831, and in addition, for pressurized aircraft, the ventilating air in flight crew and passenger compartments must be free of harmful or hazardous concentrations of gases and vapors in normal operation and in the event of reasonably probable failures or malfunctioning of the ventilating, heating, pressurization, or other systems, and equipment. If accumulation of hazardous quantities of smoke in the cockpit area is reasonably probable, smoke evacuation must be readily accomplished.

61. General. The electrical systems and equipment of the airplane must meet FAR 23.1351, and the following:

(a) Electrical system capacity. The required generating capacity, and number and kinds of power sources must—

(1) Be determined by an electrical load analysis; and

(2) Meet FAR 23.1301.

(b) Generating system. The generating system includes electrical power sources, main power busses, transmission cables, and associated control, regulation and protective devices. It must be designed so that—

(1) The system voltage and frequency (as applicable) at the terminals of all essential load equipment can be maintained within the limits for which the equipment is designed, during any probable operating conditions;

(2) System transients due to switching, fault clearing, or other causes do not make essential loads inoperative, and do not cause a smoke or fire hazard;

(3) There are means, accessible in flight to appropriate crewmembers, for the individual and collective disconnection of the electrical power sources from the system; and

(4) There are means to indicate to appropriate crewmembers the generating system quantities essential for the safe operation of the system, including the voltage and current supplied by each generator.

62. Electrical equipment and installation. Electrical equipment, controls, and wiring must be installed so that operation of any one unit or system of units will not adversely affect the simultaneous operation of any other electrical unit or system essential to the safe operation.

63. Distribution system. (a) For the purpose of complying with this section, the distribution system includes the distribution busses, their associated feeders, and each control and protective device.

(b) Each system must be designed so that essential load circuits can be supplied in the event of reasonably probable faults or open circuits, including faults in heavy current carrying cables.

(c) If two independent sources of electrical power for particular equipment or systems are required under this appendix, their electrical energy supply must be ensured by means such as duplicate electrical equipment, throwover switching, or multichannel or loop circuits separately routed.

64. Circuit protective devices. The circuit protective devices for the electrical circuits of the airplane must meet FAR 23.1357, and in addition circuits for loads which are essential to safe operation must have individual and exclusive circuit protection.

APPENDIX B TO PART 135—AIRPLANE FLIGHT RECORDER SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Installed system 1 minimum accuracy (to recovered data)</th>
<th>Sampling interval (per second)</th>
<th>Resolution 4 read out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative time</td>
<td>25 hr minimum</td>
<td>±0.125% per hour</td>
<td>1</td>
<td>1 sec.</td>
</tr>
<tr>
<td>Indicated airspeed</td>
<td>V_(ix) to V_(ix) (KIAS)</td>
<td>±5% or ±10 kts., whichever is greater. Resolution 2 kts. below 175 KIAS.</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>-1,000 ft. to max cert. alt. of A/C.</td>
<td>±100 to ±700 ft. (see Table 1, TSO C51-a)</td>
<td>1</td>
<td>25 to 150</td>
</tr>
<tr>
<td>Magnetic heading</td>
<td>360°</td>
<td>±5°</td>
<td>1</td>
<td>1°</td>
</tr>
<tr>
<td>Vertical acceleration</td>
<td>-3g to +6g</td>
<td>±0.2g in addition to ±0.3g maximum datum.</td>
<td>4 (or 1 per second where peaks, ref. to 1g are recorded).</td>
<td>0.03 g.</td>
</tr>
<tr>
<td>Longitudinal acceleration</td>
<td>±1.0g</td>
<td>±1.5% max. range excluding datum error of ±5%.</td>
<td>2</td>
<td>0.01 g.</td>
</tr>
<tr>
<td>Pitch attitude</td>
<td>100% of usable</td>
<td>±2°</td>
<td>1</td>
<td>0.8°</td>
</tr>
<tr>
<td>Roll attitude</td>
<td>±160° or 100% of usable range, whichever is greater.</td>
<td>±2°</td>
<td>1</td>
<td>0.8°</td>
</tr>
<tr>
<td>Parameters</td>
<td>Range</td>
<td>Installed system 1 minimum accuracy (to recovered data)</td>
<td>Sampling interval (per second)</td>
<td>Resolution 4 read out</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>------------------------</td>
<td>--------------------------------------------------------</td>
<td>-------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Stabilizer trim position</td>
<td>Full range</td>
<td>±3% unless higher uniquely required.</td>
<td>1</td>
<td>1%±3</td>
</tr>
<tr>
<td>Or Pitch control position</td>
<td>Full range</td>
<td>±3% unless higher uniquely required.</td>
<td>1</td>
<td>1%±3</td>
</tr>
<tr>
<td>Engine Power, Each Engine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fan or N1 speed or EPR or</td>
<td>Maximum range</td>
<td>±5%</td>
<td>1</td>
<td>1%±3</td>
</tr>
<tr>
<td>cockpit indications used for</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aircraft certification.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Or Prop. speed and torque (sample</td>
<td></td>
<td></td>
<td>1 (prop speed),</td>
<td></td>
</tr>
<tr>
<td>once/sec as close together as</td>
<td></td>
<td></td>
<td>1 (torque).</td>
<td></td>
</tr>
<tr>
<td>practicable).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altitude rate 1 (need depends on</td>
<td>±8,000 fpm</td>
<td>±10% Resolution 250 fpm below 12,000 ft. indicated.</td>
<td>1</td>
<td>250 fpm below</td>
</tr>
<tr>
<td>altitude resolution).</td>
<td></td>
<td></td>
<td></td>
<td>12,000</td>
</tr>
<tr>
<td>Angle of attack 2 (need depends on</td>
<td>−20° to 40° or of usable</td>
<td></td>
<td>1</td>
<td>0.8%±3</td>
</tr>
<tr>
<td>altitude resolution).</td>
<td>range.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio transmitter keying (discrete)</td>
<td>On/off</td>
<td></td>
<td>1</td>
<td>1.</td>
</tr>
<tr>
<td>TE flaps (discrete or analog)</td>
<td>Each discrete position</td>
<td></td>
<td>1</td>
<td>1.</td>
</tr>
<tr>
<td>(U, D, T/O, AAP).</td>
<td>(U, D, T/O, AAP).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Or Analog 0–100% range</td>
<td>±3°</td>
<td></td>
<td>1</td>
<td>1%±3</td>
</tr>
<tr>
<td>Each discrete position</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Or Analog 0–100% range</td>
<td>±3°</td>
<td></td>
<td>1</td>
<td>1%±3</td>
</tr>
<tr>
<td>Thrust reverser, each engine</td>
<td>Engaged or full reverse</td>
<td></td>
<td>1</td>
<td>1.</td>
</tr>
<tr>
<td>(Discrete).</td>
<td>Engaged or disengaged</td>
<td></td>
<td>1</td>
<td>1.</td>
</tr>
<tr>
<td>Autopilot engaged (discrete)</td>
<td></td>
<td></td>
<td>1</td>
<td>1.</td>
</tr>
</tbody>
</table>

1 When data sources are aircraft instruments (except altimeters) of acceptable quality to fly the aircraft the recording system excluding these sensors (but including all other characteristics of the recording system) shall contribute no more than half of the values in this column.

2 If data from the altitude encoding altimeter (100 ft. resolution) is used, then either one of these parameters should also be recorded. If altitude is recorded at a minimum resolution of 25 feet, then these two parameters can be omitted.

3 Per cent of full range.

4 This column applies to aircraft manufacturing after October 11, 1991.


APPENDIX C TO PART 135—HELICOPTER FLIGHT RECORDER SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Installed system 1 minimum accuracy (to recovered data)</th>
<th>Sampling interval (per second)</th>
<th>Resolution 3 read out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative time (from recorded on</td>
<td>25 hr minimum</td>
<td>±0.125% per hour</td>
<td>1</td>
<td>1 sec.</td>
</tr>
<tr>
<td>prior to takeoff).</td>
<td></td>
<td></td>
<td></td>
<td>1.</td>
</tr>
<tr>
<td>Indicated airspeed</td>
<td>$V_a$ in to $V_a$ (KIAS) (mini-</td>
<td>±5% or ±10 kts., whichever is greater.</td>
<td>1</td>
<td>1 kt.</td>
</tr>
<tr>
<td>Altitude</td>
<td>−1,000 ft. to 20,000 ft.</td>
<td></td>
<td>1</td>
<td>1.</td>
</tr>
<tr>
<td>Magnetic heading</td>
<td>360°</td>
<td></td>
<td>1</td>
<td>1°.</td>
</tr>
<tr>
<td>Vertical acceleration</td>
<td>±3g to ±6g</td>
<td>±0.2g in addition to ±0.3g maximum datum.</td>
<td>4 (or 1 per second where peaks, ref. to 1g are recorded).</td>
<td>0.05g.</td>
</tr>
<tr>
<td>Longitudinal acceleration</td>
<td>±1.0g</td>
<td>±1.5% max. range excluding datum error of ±5%.</td>
<td>2</td>
<td>0.03g.</td>
</tr>
<tr>
<td>Pitch attitude</td>
<td>100% of usable range</td>
<td>±2°</td>
<td>1</td>
<td>0.8°.</td>
</tr>
<tr>
<td>Roll attitude</td>
<td>±60° or 100% of usable</td>
<td>±2°</td>
<td>1</td>
<td>0.8°.</td>
</tr>
<tr>
<td>Altitude rate</td>
<td>±8,000 fpm</td>
<td>±10% Resolution 250 fpm below 12,000 ft. indicated.</td>
<td>1</td>
<td>250 fpm below 12,000.</td>
</tr>
</tbody>
</table>
### APPENDIX D TO PART 135—AIRPLANE FLIGHT RECORDER SPECIFICATION

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Installed system 1 minimum accuracy (to recovered data)</th>
<th>Sampling interval (per second)</th>
<th>Resolution 2 read out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Power, Each Engine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main rotor speed</td>
<td>Maximum range</td>
<td>±5%</td>
<td>1</td>
</tr>
<tr>
<td>Free or power turbine</td>
<td>Maximum range</td>
<td>±5%</td>
<td>1</td>
</tr>
<tr>
<td>Engine torque</td>
<td>Maximum range</td>
<td>±5%</td>
<td>1</td>
</tr>
<tr>
<td><strong>Flight Controls—Hydraulic Pressure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary (discrete)</td>
<td>High/low</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Secondary—if applicable (discrete)</td>
<td>High/low</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Radio transmitter keying (discrete)</td>
<td>On/off</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Autopilot engaged (discrete)</td>
<td>Engaged or disengaged</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SAS status—engaged (discrete)</td>
<td>Engaged/disengaged</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SAS fault status (discrete)</td>
<td>Fault/OK</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Flight Controls</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collective</td>
<td>Full range</td>
<td>±3%</td>
<td>2</td>
</tr>
<tr>
<td>Pedal position</td>
<td>Full range</td>
<td>±3%</td>
<td>2</td>
</tr>
<tr>
<td>Lat. cyclic</td>
<td>Full range</td>
<td>±3%</td>
<td>2</td>
</tr>
<tr>
<td>Long. cyclic</td>
<td>Full range</td>
<td>±3%</td>
<td>2</td>
</tr>
<tr>
<td>Control selection</td>
<td>Full range</td>
<td>±3%</td>
<td>2</td>
</tr>
</tbody>
</table>

1 When data sources are aircraft instruments (except altimeters) of acceptable quality to fly the aircraft the recording system excluding these sensors (but including all other characteristics of the recording system) shall contribute no more than half of the values in this column.

2 Per cent of full range.

3 This column applies to aircraft manufactured after October 11, 1991.

4 Amdt. 135-69, 62 FR 36397, july 17, 1997

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**APPENDIX D TO PART 135—AIRPLANE FLIGHT RECORDER SPECIFICATION**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Accuracy sensor input to DFDR readout</th>
<th>Sampling interval (per second)</th>
<th>resolution 4 read out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (GMT or Frame Counter) (range 0 to 4095, sampled 1 per frame)</td>
<td>±0.125% Per Hour</td>
<td>0.25 (1 per 4 seconds)</td>
<td>1 sec.</td>
</tr>
<tr>
<td>Altitude</td>
<td>−1,000 ft to max certificated altitude of aircraft (see Table 1, TSO-C51a)</td>
<td>±100 to ±700 ft</td>
<td>1</td>
</tr>
<tr>
<td>Airspeed</td>
<td>50 KIAS to Vn and Vn+</td>
<td>±5%; ±3%</td>
<td>1</td>
</tr>
<tr>
<td>Heading</td>
<td>360°</td>
<td>±2°</td>
<td>1</td>
</tr>
<tr>
<td>Normal Acceleration (Vertical)</td>
<td>−3g to +6g</td>
<td>±1% of max range excluding datum error of ±3%</td>
<td>8</td>
</tr>
<tr>
<td>Pitch Attitude</td>
<td>±75°</td>
<td>±2°</td>
<td>1</td>
</tr>
<tr>
<td>Roll Attitude</td>
<td>±180°</td>
<td>±2°</td>
<td>1</td>
</tr>
<tr>
<td>Radio Transmitter Keying</td>
<td>On-Off (Discrete)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thrust/Power on Each Engine</td>
<td>Full range forward</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thrust/Rudder on Each Engine</td>
<td>Full range or each discrete position</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leading Edge Flap on or Cockpit Control Selection</td>
<td>Full range or each discrete position</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leading Edge Flap on or Cockpit Control Selection</td>
<td>Full range or each discrete position</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thrust Reverser Position</td>
<td>Stowed, in transit, and reverse (discretion)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Spoiler Position/Speed Brake Selection</td>
<td>Full range or each discrete position</td>
<td>±2% unless higher accuracy uniquely required</td>
<td>1</td>
</tr>
<tr>
<td>Marker Beacon Passage</td>
<td>Discrete</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Longitudinal Acceleration</td>
<td>≥1g</td>
<td>≥1.5° max range excluding datum error of ±3%</td>
<td>4</td>
</tr>
<tr>
<td>Pilot Input And/or Surface Position—Primary Controls (Pitch, Roll, Yaw)</td>
<td>Full range</td>
<td>±2° unless higher accuracy uniquely required</td>
<td>1</td>
</tr>
<tr>
<td>Lateral Acceleration</td>
<td>≥1g</td>
<td>≥1.5° max range excluding datum error of ±3%</td>
<td>4</td>
</tr>
<tr>
<td>Pitch Trim Position</td>
<td>Full range</td>
<td>±3% unless higher accuracy uniquely required</td>
<td>1</td>
</tr>
</tbody>
</table>

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### Parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy sensor input to DFDR readout</th>
<th>Sampling interval (per second)</th>
<th>Resolution^4 read out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaideslope Deviation</td>
<td>±400 Microamps</td>
<td>±3%</td>
<td>1</td>
<td>0.3%^2</td>
</tr>
<tr>
<td>Localizer Deviation</td>
<td>±400 Microamps</td>
<td>±3%</td>
<td>1</td>
<td>0.3%^2</td>
</tr>
<tr>
<td>AFCS Mode and Engagement Status</td>
<td>Discrete</td>
<td>Discrete</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Radio Altitude</td>
<td>−20 ft to 2,500 ft</td>
<td>±2 ft or ±3% whichever is greater below 500 ft and ±15% above 500 ft</td>
<td>1</td>
<td>1 ft + 5%^2 above 500ft.</td>
</tr>
<tr>
<td>Master Warning</td>
<td>Discrete</td>
<td>Discrete</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Main Gear Squat Switch Status</td>
<td>As installed</td>
<td>As installed</td>
<td>2</td>
<td>0.3%^2</td>
</tr>
<tr>
<td>Angle of Attack (if recorded directly)</td>
<td>As installed</td>
<td>As installed</td>
<td>2</td>
<td>0.3%^2</td>
</tr>
<tr>
<td>Outside Air Temperature or Total Air Temperature</td>
<td>Discrete</td>
<td>Discrete</td>
<td>0.5</td>
<td>0.3%^2 or 0.5%^3</td>
</tr>
<tr>
<td>Hydraulics, Each System Low Pressure</td>
<td>Discrete</td>
<td>Discrete</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Groundspeed</td>
<td>As installed</td>
<td>Most accurate systems installed (IMS equipped aircraft only).</td>
<td>1</td>
<td>0.2%^2</td>
</tr>
</tbody>
</table>

If additional recording capacity is available, recording of the following parameters is recommended. The parameters are listed in order of significance:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy sensor input to DFDR readout</th>
<th>Sampling interval (per second)</th>
<th>Resolution^4 read out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drift Angle</td>
<td>When available. As installed</td>
<td>As installed</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Wind Speed and Direction</td>
<td>When available. As installed</td>
<td>As installed</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Latitude and Longitude</td>
<td>When available. As installed</td>
<td>As installed</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Brake pressure/Brake pedal position</td>
<td>As installed</td>
<td>As installed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Additional engine parameters:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPR</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>N1</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>N2</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>EGT</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>Throttle Lever Position</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>Fuel Flow</td>
<td>As installed</td>
<td>As installed</td>
<td>1 (per engine)</td>
<td></td>
</tr>
<tr>
<td>TCAS:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>As installed</td>
<td>As installed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RA</td>
<td>As installed</td>
<td>As installed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sensitivity level (as selected by crew)</td>
<td>As installed</td>
<td>As installed</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>GPWS (ground proximity warning system)</td>
<td>Discrete</td>
<td>Discrete</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Landing gear or gear selector position</td>
<td>Discrete</td>
<td>Discrete</td>
<td>0.25 (1 per 4 seconds)</td>
<td></td>
</tr>
<tr>
<td>DME 1 and 2 Distance</td>
<td>0–200 NM</td>
<td>As installed</td>
<td>1mi.</td>
<td></td>
</tr>
<tr>
<td>Nav 1 and 2 Frequency Selection</td>
<td>Full range</td>
<td>As installed</td>
<td>0.25</td>
<td></td>
</tr>
</tbody>
</table>

^1 When altitude rate is recorded. Altitude rate must have sufficient resolution and sampling to permit the derivation of altitude to 5 feet.

^2 Per cent of full range.

^3 For airplanes that can demonstrate the capability of deriving either the control input or control movement (one from the other) for all modes of operation and flight regimes, the “or” applies. For airplanes with non-mechanical control systems (fly-by-wire) the “and” applies. In airplanes with split surfaces, suitable combination of inputs is acceptable in lieu of recording each surface separately.

^4 This column applies to aircraft manufactured after October 11, 1991.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy sensor input to DFDR readout</th>
<th>Sampling interval (per second)</th>
<th>Resolution(^1) read out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airspeed</td>
<td>As the installed measuring system.</td>
<td>±3%</td>
<td>1</td>
<td>1 kt</td>
</tr>
<tr>
<td>Heading</td>
<td>360°</td>
<td>±2°</td>
<td>1</td>
<td>0.5°</td>
</tr>
<tr>
<td>Normal Acceleration (Vertical)</td>
<td>-3g to +6g</td>
<td>±1% of max range excluding datum error of ±5%</td>
<td>8</td>
<td>0.01g</td>
</tr>
<tr>
<td>Pitch Attitude</td>
<td>±75°</td>
<td>±2°</td>
<td>2</td>
<td>0.5°</td>
</tr>
<tr>
<td>Roll Attitude</td>
<td>±180°</td>
<td>±2°</td>
<td>2</td>
<td>0.5°</td>
</tr>
<tr>
<td>Radio Transmitter Keying</td>
<td>On-Off (Discrete)</td>
<td>1</td>
<td>1</td>
<td>0.25 sec</td>
</tr>
<tr>
<td>Power Turbine Speed and Engine Torque.</td>
<td>0–130% (power Turbine Speed) Full range (Torque).</td>
<td>±2%</td>
<td>1 speed 1 torque (per engine).</td>
<td>0.2% to 0.4%</td>
</tr>
<tr>
<td>Main Rotor Speed</td>
<td>0–130%</td>
<td>±2%</td>
<td>2</td>
<td>0.5%</td>
</tr>
<tr>
<td>Altitude Rate</td>
<td>±6,000 ft/min</td>
<td>As installed</td>
<td>2</td>
<td>0.3%</td>
</tr>
<tr>
<td>Pilot Input—Primary Controls (Collective, Longitudinal Cyclic, Lateral Cyclic, Pedal)</td>
<td>Discrete (5 bits necessary).</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flight Control Hydraulic Pressure Low.</td>
<td>Discrete, each circuit</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flight Control Hydraulic Pressure Selector Switch Position, 1st and 2nd stage.</td>
<td>Discrete</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFCS Mode and Engagement Status.</td>
<td>Discrete (5 bits necessary).</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability Augmentation System Engage.</td>
<td>Discrete</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAS Fault Status</td>
<td>Discrete</td>
<td>0.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main Gearbox Temperature Low.</td>
<td>As installed</td>
<td>0.25</td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>Main Gearbox Temperature High.</td>
<td>As installed</td>
<td>0.5</td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>Controllable Stabilator Position.</td>
<td>Full Range</td>
<td>±3%</td>
<td>2</td>
<td>0.4%</td>
</tr>
<tr>
<td>Longitudinal Acceleration</td>
<td>±1g</td>
<td>±1.5% max range excluding datum error of ±5%</td>
<td>4</td>
<td>0.01g</td>
</tr>
<tr>
<td>Lateral Acceleration</td>
<td>±1g</td>
<td>±1.5% max range excluding datum error of ±5%</td>
<td>4</td>
<td>0.01g</td>
</tr>
<tr>
<td>Master Warning</td>
<td>Discrete</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nav 1 and 2 Frequency Selection</td>
<td>Discrete</td>
<td>0.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outside Air Temperature</td>
<td>-50° C to +90° C</td>
<td>±2° c</td>
<td>0.5</td>
<td>0.3° c</td>
</tr>
</tbody>
</table>

\(^1\) Per cent of full range.
\(^2\) This column applies to aircraft manufactured after October 11, 1991.


**APPENDIX F TO PART 135—AIRPLANE FLIGHT RECORDER SPECIFICATION**

The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

**Parameters**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Time or Relative Time Counts.</td>
<td>24 Hrs, 0 to 4095.</td>
<td>±a/–0.125% Per Hour.</td>
<td>4</td>
<td>1 sec</td>
</tr>
<tr>
<td>2. Pressure Attitude.</td>
<td>−1000 ft to max certified altitude of aircraft, +5000 ft.</td>
<td>±a/−100 to ±a/−700 ft (see table, TSO C124a or TSO C51a).</td>
<td>1</td>
<td>5° to 35°</td>
</tr>
<tr>
<td>3. Indicated airspeed or Certified airspeed.</td>
<td>50 KIAS or minimum value to Max (V_{m} ) and (V_{c} ) to 1.2 (V_{c} ) 0–360° and Discrete &quot;true&quot; or &quot;mag&quot;.</td>
<td>±a/−5% and ±a/−3%</td>
<td>1</td>
<td>1 kt</td>
</tr>
<tr>
<td>4. Heading (Primary flight crew reference).</td>
<td>0–360°</td>
<td>±a/−2°</td>
<td>1</td>
<td>0.5°</td>
</tr>
</tbody>
</table>

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The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Normal Acceleration (Vertical)</td>
<td>−3g to +6g</td>
<td>±/− 1% of max range excluding datum error of ±/− 5%</td>
<td>0.125</td>
<td>0.004g.</td>
<td>A sampling rate of 0.25 is recommended.</td>
</tr>
<tr>
<td>6. Pitch Attitude</td>
<td>±/− 75%</td>
<td>±/− 2°</td>
<td>1 or 0.25 for airplanes operated under § 135.152(j)</td>
<td>0.5°</td>
<td>A sampling rate of 0.5 is recommended.</td>
</tr>
<tr>
<td>7. Roll Attitude</td>
<td>±/− 180°</td>
<td>±/− 2°</td>
<td>1 or 0.5 for airplanes operated under § 135.152(j)</td>
<td>0.5°</td>
<td>A sampling rate of 0.5 is recommended.</td>
</tr>
<tr>
<td>8. Manual Radio Transmission System Keying</td>
<td>On-Off (Discrete)</td>
<td>None</td>
<td>1</td>
<td></td>
<td>Preferably each crew member but one discrete acceptable for all trans-mission provided the CVR/DFDR system complies with TSO C124a CVR synchro-nization requirements (paragraph 4.2.1 ED-55).</td>
</tr>
<tr>
<td>9. Thrust/Power on Each Engine—primary flight crew reference</td>
<td>Full Range Forward.</td>
<td>±/− 2°</td>
<td>1 (per engine)</td>
<td>0.2% of full range</td>
<td>Sufficient parameters (e.g., EPR, N1 or Torque, NP) as appropriate to the particular engine be recorded to determine power in forward and reverse thrust, including potential overspeed conditions.</td>
</tr>
<tr>
<td>10. Autopilot Engagement.</td>
<td>Discrete “on” or “off”.</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Longitudinal Acceleration</td>
<td>±/− 1g</td>
<td>±/− 1.5% max. range excluding datum error of ±/− 5%</td>
<td>0.25</td>
<td>0.004g.</td>
<td></td>
</tr>
<tr>
<td>12a. Pitch Control(s) position (non-fly-by-wire systems)</td>
<td>Full Range</td>
<td>±/− 2° Unless Higher Accuracy Required</td>
<td>0.5 or 0.25 for airplanes operated under § 135.152(j)</td>
<td>0.2% of full range</td>
<td>For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5 or 0.25, as applicable.</td>
</tr>
<tr>
<td>12b. Pitch Control(s) position (fly-by-wire systems)</td>
<td>Full Range</td>
<td>±/− 2° Unless Higher Accuracy Required</td>
<td>0.5 or 0.25 for airplanes operated under § 135.152(j)</td>
<td>0.2% of full range</td>
<td>For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5 or 0.25, as applicable.</td>
</tr>
<tr>
<td>13a. Lateral Control position(s) (non-fly-by-wire)</td>
<td>Full Range</td>
<td>±/− 2° Unless Higher Accuracy Required</td>
<td>0.5 or 0.25 for airplanes operated under § 135.152(j)</td>
<td>0.2% of full range</td>
<td>For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5 or 0.25, as applicable.</td>
</tr>
<tr>
<td>13b. Lateral Control position(s) (fly-by-wire)</td>
<td>Full range</td>
<td>±/− 2° Unless Higher Accuracy Required</td>
<td>0.5 or 0.25 for airplanes operated under § 135.152(j)</td>
<td>0.2% of full range</td>
<td>For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5 or 0.25, as applicable.</td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>14a. Yaw Control position(s) (non-fly-by-wire)</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required</td>
<td>0.5 or 0.25 for airplanes operated under § 135.152(j)</td>
<td>0.2% of full range</td>
<td>For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5.</td>
</tr>
<tr>
<td>14b. Yaw Control position(s) (fly-by-wire)</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required</td>
<td>0.5</td>
<td>0.2% of full range</td>
<td></td>
</tr>
<tr>
<td>15. Pitch Control Surface(s) Position</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required</td>
<td>0.5 or 0.25 for airplanes operated under § 135.152(j)</td>
<td>0.2% of full range</td>
<td>For airplanes fitted with multiple or split surfaces, a suitable combination of inputs is acceptable in lieu of recording each surface separately. The control surfaces may be sampled alternately to produce the sampling interval of 0.5 or 0.25.</td>
</tr>
<tr>
<td>16. Lateral Control Surface(s) Position</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required</td>
<td>0.5 or 0.25 for airplanes operated under § 135.152(j)</td>
<td>0.2% of full range</td>
<td>A suitable combination of surface position sensors is acceptable in lieu of recording each surface separately. The control surfaces may be sampled alternately to produce the sampling interval of 0.5 or 0.25.</td>
</tr>
<tr>
<td>17. Yaw Control Surface(s) Position</td>
<td>Full Range</td>
<td>+/- 2° Unless Higher Accuracy Uniquely Required</td>
<td>0.5</td>
<td>0.2% of full range</td>
<td>For Airplanes with multiple or split surfaces, a suitable combination of surface position sensors is acceptable in lieu of recording each surface separately. The control surfaces may be sampled alternately to produce the sampling interval of 0.5.</td>
</tr>
<tr>
<td>18. Lateral Acceleration</td>
<td>+/- 1g</td>
<td>+/- 1.5% max. range excluding datum error of +/- 5%</td>
<td>0.25</td>
<td>0.004g</td>
<td></td>
</tr>
<tr>
<td>19. Pitch Trim Surface Position</td>
<td>Full Range</td>
<td>+/- 3° Unless Higher Accuracy Uniquely Required</td>
<td>1</td>
<td>0.3% of full range</td>
<td></td>
</tr>
<tr>
<td>20. Trailing Edge Flap or Cockpit Control Selection</td>
<td>Full Range or Each Position (discrete)</td>
<td>+/- 3° or as Pilot’s indicator</td>
<td>2</td>
<td>0.5% of full range</td>
<td>Flap position and cockpit control may each be sampled alternately at 4 second intervals, to give a data point every 2 seconds.</td>
</tr>
<tr>
<td>21. Leading Edge Flap or Cockpit Control Selection</td>
<td>Full Range or Each Discrete Position</td>
<td>+/- 3° or as Pilot’s indicator and sufficient to determine each discrete position</td>
<td>2</td>
<td>0.5% of full range</td>
<td>Left and right sides, or flap position and cockpit control may each be sampled at 4 second intervals, so as to give a data point every 2 seconds.</td>
</tr>
<tr>
<td>22. Each Thrust reverser Position (or equivalent for propeller airplane)</td>
<td>Stowed, In Transit, and reverse (Discrete)</td>
<td>1 (per engine)</td>
<td></td>
<td></td>
<td>Turbo-jet—2 discretes enable the 3 states to be determined Turbo-prop—1 discrete</td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Ground Spoiler Position or Speed Brake Selection.</td>
<td>Full Range or Each Position (discrete).</td>
<td>$\pm 2^\circ$ Unless Higher Accuracy Uniquely Required.</td>
<td>1</td>
<td>0.5 for airplanes operated under §135.152(j).</td>
<td>0.2% of full range.</td>
</tr>
<tr>
<td>24. Outside Air Temperature or Total Air Temperature.</td>
<td>$-56^\circ$C to $+90^\circ$C</td>
<td>$\pm 2^\circ$C</td>
<td>2</td>
<td>0.3°C.</td>
<td></td>
</tr>
<tr>
<td>25. Autopilot/Autothrottle/AFCS Mode and Engagement Status.</td>
<td>A suitable combination of discretes.</td>
<td></td>
<td></td>
<td></td>
<td>Discretes should show which systems are engaged and which primary modes are controlling the flight path and speed of the aircraft.</td>
</tr>
<tr>
<td>26. Radio Altitude</td>
<td>$-20$ ft to $2,500$ ft.</td>
<td>$\pm 2$ ft or $\pm 3%$ Whichever is Greater Below $500$ ft and $\pm 5%$ Above $500$ ft.</td>
<td>1</td>
<td>1 ft $\pm 5%$ above $500$ ft. For autoland/category 3 operations. Each radio altimeter should be recorded, but arranged so that at least one is recorded each second.</td>
<td></td>
</tr>
<tr>
<td>27. Localizer Deviation, MLS Azimuth, or GPS Lateral Deviation.</td>
<td>$\pm 400$ Microamps or available sensor range as installed $\pm 62^\circ$.</td>
<td>As installed $\pm 3%$ recommended.</td>
<td>1</td>
<td>0.3% of full range. For autoland/category 3 operations. Each system should be recorded but arranged so that at least one is recorded each second. It is not necessary to record ILS and MLS at the same time, only the approach aid in use need be recorded.</td>
<td></td>
</tr>
<tr>
<td>28. Glideslope Deviation, MLS Elevation, or GPS Vertical Deviation.</td>
<td>$\pm 400$ Microamps or available sensor range as installed $\pm 3%$ recommended.</td>
<td>As installed $\pm 3%$ recommended.</td>
<td>1</td>
<td>0.3% of full range. For autoland/category 3 operations. Each system should be recorded but arranged so that at least one is recorded each second. It is not necessary to record ILS and MLS at the same time, only the approach aid in use need be recorded.</td>
<td></td>
</tr>
<tr>
<td>29. Marker Beacon Passage.</td>
<td>Discrete “on” or “off”.</td>
<td></td>
<td></td>
<td></td>
<td>A single discrete is acceptable for all markers.</td>
</tr>
<tr>
<td>30. Master Warning.</td>
<td>Discrete</td>
<td></td>
<td>1</td>
<td></td>
<td>Record the master warning and record each “red” warning that cannot be determined from other parameters or from the cockpit voice recorder.</td>
</tr>
<tr>
<td>31. Air/ground sensor (primary airplane system reference nose or main gear).</td>
<td>Discrete “air” or “ground”.</td>
<td></td>
<td>1 (0.25 recommended)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Angle of Attack (If measured directly).</td>
<td>As installed</td>
<td>As installed</td>
<td>2 or 0.5 for airplanes operated under §135.152(j).</td>
<td></td>
<td>If left and right sensors are available, each may be recorded at 4 or 1 second intervals, as appropriate, so as to give a data point at 2 seconds or 0.5 second, as required.</td>
</tr>
<tr>
<td>33. Hydraulic Pressure Low, Each System.</td>
<td>Discrete or available sensor range.</td>
<td>$\pm 5%$</td>
<td>2</td>
<td>0.5% of full range.</td>
<td></td>
</tr>
<tr>
<td>34. Groundspeed</td>
<td>As installed</td>
<td>Most Accurate Systems Installed.</td>
<td>1</td>
<td>0.2% of full range.</td>
<td></td>
</tr>
<tr>
<td>35. GPWS (ground proximity warning system).</td>
<td>Discrete “warning” or “off”.</td>
<td></td>
<td>1</td>
<td></td>
<td>A suitable combination of discretes unless recorder capacity is limited in which case a single discrete for all modes is acceptable.</td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>36. Landing Gear Position or Landing gear cockpit control selection.</td>
<td>Discrete</td>
<td></td>
<td>4</td>
<td></td>
<td>A suitable combination of discretes should be recorded.</td>
</tr>
<tr>
<td>37. Drift Angle</td>
<td>As installed</td>
<td>As installed</td>
<td>4</td>
<td>0.1°</td>
<td>Provided by the Primary Navigation System Reference. Where capacity permits latitude/longitude resolution should be 0.0002°.</td>
</tr>
<tr>
<td>38. Wind Speed and Direction.</td>
<td>As installed</td>
<td>As installed</td>
<td>4</td>
<td>1 knot, and 1.0°.</td>
<td></td>
</tr>
<tr>
<td>39. Latitude and Longitude.</td>
<td>As installed</td>
<td>As installed</td>
<td>4</td>
<td>0.002°, or as installed.</td>
<td></td>
</tr>
<tr>
<td>40. Stick shaker and pusher activation.</td>
<td>Discrete(s) “on” or “off”.</td>
<td></td>
<td>1</td>
<td></td>
<td>A suitable combination of discretes to determine activation.</td>
</tr>
<tr>
<td>41. Windshear Detection.</td>
<td>Discrete</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42. Throttle/power lever position.</td>
<td>Full range</td>
<td>±/2%</td>
<td>1 for each lever</td>
<td>2% of full range</td>
<td>For airplanes with non-mechanically linked cockpit engine controls.</td>
</tr>
<tr>
<td>43. Additional Engine Parameters.</td>
<td>As installed</td>
<td>As installed</td>
<td>Each engine</td>
<td>2% of full range</td>
<td>Where capacity permits, the preferred priority is indicated vibration level, N2, EGT, Fuel Flow, Fuel Cut-off lever position and N3, unless engine manufacturer recommends otherwise.</td>
</tr>
<tr>
<td>44. Traffic Alert and Collision Avoidance System (TCAS).</td>
<td>Discretes</td>
<td></td>
<td>1</td>
<td></td>
<td>A suitable combination of discretes should be recorded to determine the status of—Combined Control, Vertical Control, Up Advisory, and down advisory.</td>
</tr>
<tr>
<td>45. DME 1 and 2 Distance.</td>
<td>0–200 NM</td>
<td></td>
<td>4</td>
<td>1 NM</td>
<td>1 mile.</td>
</tr>
<tr>
<td>46. Nav 1 and 2 Selected Frequency.</td>
<td>Full range</td>
<td></td>
<td>4</td>
<td></td>
<td>Sufficient to determine selected frequency.</td>
</tr>
<tr>
<td>47. Selected barometric setting.</td>
<td>Full Range</td>
<td>±/5%</td>
<td>1 (per 64 sec.)</td>
<td>0.2% of full range</td>
<td></td>
</tr>
<tr>
<td>48. Selected altitude.</td>
<td>Full Range</td>
<td>±/5%</td>
<td>1</td>
<td>100 ft.</td>
<td></td>
</tr>
<tr>
<td>49. Selected speed.</td>
<td>Full Range</td>
<td>±/5%</td>
<td>1</td>
<td>1 knot.</td>
<td></td>
</tr>
<tr>
<td>50. Selected Mach.</td>
<td>Full Range</td>
<td>±/5%</td>
<td>1</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>51. Selected vertical speed.</td>
<td>Full Range</td>
<td>±/5%</td>
<td>1</td>
<td>100 ft/min.</td>
<td></td>
</tr>
<tr>
<td>52. Selected heading.</td>
<td>Full Range</td>
<td>±/5%</td>
<td>1</td>
<td>1°.</td>
<td></td>
</tr>
<tr>
<td>53. Selected flight path.</td>
<td>Full Range</td>
<td>±/5%</td>
<td>1</td>
<td>1°.</td>
<td></td>
</tr>
<tr>
<td>54. Selected decision height.</td>
<td>Full Range</td>
<td>±/5%</td>
<td>64</td>
<td>1 ft.</td>
<td></td>
</tr>
<tr>
<td>55. EFIS display format.</td>
<td>Discrete(s)</td>
<td></td>
<td>4</td>
<td></td>
<td>Discretes should show the display system status (e.g., off, normal, fail, composite, sector, plan, nav aids, weather radar, range, copy.</td>
</tr>
</tbody>
</table>
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</tr>
</thead>
<tbody>
<tr>
<td>56. Multi-function/Engine Alerts Display format.</td>
<td>Discrete(s)</td>
<td>4</td>
<td></td>
<td></td>
<td>Discretes should show the display system status (e.g., off, normal, fail, and the identity of display pages for emergency procedures, need not be recorded.</td>
</tr>
<tr>
<td>57. Thrust command</td>
<td>Full Range</td>
<td>+/- 2%</td>
<td>2</td>
<td>2% of full range.</td>
<td></td>
</tr>
<tr>
<td>58. Thrust target</td>
<td>Full Range</td>
<td>+/- 2%</td>
<td>4</td>
<td>2% of full range.</td>
<td></td>
</tr>
<tr>
<td>59. Fuel quantity in CG trim tank</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>(1 per 64 sec.)</td>
<td>1% of full range.</td>
<td></td>
</tr>
<tr>
<td>61. Ice Detection</td>
<td>Discrete “ice” or “no ice”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63. Engine warning each engine over temp.</td>
<td>Discrete</td>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64. Engine warning each engine oil pressure low.</td>
<td>Discrete</td>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65. Engine warning each engine over speed.</td>
<td>Discrete</td>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>66. Yaw Trim Surface Position.</td>
<td>Full Range</td>
<td>+/- 3% Unless Higher Accuracy Uniquely Required</td>
<td>2</td>
<td>0.3% of full range.</td>
<td></td>
</tr>
<tr>
<td>67. Roll Trim Surface Position.</td>
<td>Full Range</td>
<td>+/- 3% Unless Higher Accuracy Uniquely Required</td>
<td>2</td>
<td>0.3% of full range.</td>
<td></td>
</tr>
<tr>
<td>68. Brake Pressure (left and right).</td>
<td>As installed</td>
<td>+/- 5%</td>
<td>1</td>
<td></td>
<td>To determine braking effort applied by pilots or by autobrakes.</td>
</tr>
<tr>
<td>69. Brake Pedal Application (left and right).</td>
<td>Discrete or Analog “applied” or “off”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70. Yaw or sideslip angle.</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.5°.</td>
<td></td>
</tr>
<tr>
<td>71. Engine bleed valve position, anti-icing system selection.</td>
<td>Discrete “open” or “closed”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>72. De-icing or anti-icing system selection.</td>
<td>Discrete “on” or “off”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>73. Computed center of gravity.</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>(1 per 64 sec.)</td>
<td>1% of full range.</td>
<td></td>
</tr>
<tr>
<td>74. AC electrical bus status.</td>
<td>Discrete “power” or “off”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75. DC electrical bus status.</td>
<td>Discrete “power” or “off”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>76. APU bleed valve position.</td>
<td>Discrete “open” or “closed”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>77. Hydraulic Pressure (each system).</td>
<td>Full range</td>
<td>+/- 5%</td>
<td>2</td>
<td>100 psi.</td>
<td></td>
</tr>
<tr>
<td>78. Loss of cabin pressure.</td>
<td>Discrete “loss” or “normal”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

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<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>80. Heads-up display (when an information source is installed)</td>
<td>Discrete(s) “on” or “off”</td>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>81. Para-visual display (when an information source is installed)</td>
<td>Discrete(s) “on” or “off”</td>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>82. Cockpit trim control input position—pitch</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.2% of full range.</td>
<td>Where mechanical means for control inputs are not available, cockpit display trim positions should be recorded.</td>
</tr>
<tr>
<td>83. Cockpit trim control input positions—roll</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.2% of full range.</td>
<td>Where mechanical means for control inputs are not available, cockpit display trim positions should be recorded.</td>
</tr>
<tr>
<td>84. Cockpit trim control input position—yaw</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.2% of full range.</td>
<td>Where mechanical means for control inputs are not available, cockpit display trim positions should be recorded.</td>
</tr>
<tr>
<td>85. Trailing edge flap and cockpit flap control position</td>
<td>Full Range</td>
<td>+/- 5%</td>
<td>2</td>
<td>0.5% of full range.</td>
<td>Trailing edge flaps and cockpit flap control position may each be sampled alternately at 4 second intervals to provide a sample each 0.5 second.</td>
</tr>
<tr>
<td>86. Leading edge flap and cockpit flap control position</td>
<td>Full Range or Discrete</td>
<td>+/- 5%</td>
<td>1</td>
<td>0.5% of full range.</td>
<td></td>
</tr>
<tr>
<td>87. Ground spoiler position and speed brake selection</td>
<td>Full Range or discrete</td>
<td>+/- 5%</td>
<td>0.5</td>
<td>0.2% of full range.</td>
<td></td>
</tr>
<tr>
<td>88. All cockpit flight control input forces (control wheel, control column, rudder pedal)</td>
<td>Full Range</td>
<td>+/- 70 lbs. Control Column +/- 85 lb Rudder pedal +/- 165 lbs</td>
<td></td>
<td>0.2% of full range.</td>
<td>For fly-by-wire flight control systems, where flight control surface position is a function of the displacement of the control input device only, it is not necessary to record this parameter. For airplanes that have a flight control break away capability that allows either pilot to operate the control independently, record both control force inputs. The control force inputs may be sampled alternately once per 2 seconds to produce the sampling interval of 1.</td>
</tr>
</tbody>
</table>
PART 137—AGRICULTURAL AIRCRAFT OPERATIONS

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137.3 Definition of terms.

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AUTHORITY: 49 U.S.C. 106(g), 40103, 40113, 44701–44702.


§ 137.1 Applicability.
(a) This part prescribes rules governing—
(1) Agricultural aircraft operations within the United States; and
(2) The issue of commercial and private agricultural aircraft operator certificates for those operations.
(b) In a public emergency, a person conducting agricultural aircraft operations under this part may, to the extent necessary, deviate from the operating rules of this part for relief and welfare activities approved by an agency of the United States or of a State or local government.
(c) Each person who, under the authority of this section, deviates from a rule of this part shall, within 10 days after the deviation send to the nearest FAA Flight Standards District Office a complete report of the aircraft operation involved, including a description of the operation and the reasons for it.


§ 137.3 Definition of terms.
For the purposes of this part—
Agricultural aircraft operation means the operation of an aircraft for the purpose of (1) dispensing any economic poison, (2) dispensing any other substance intended for plant nourishment, soil treatment, propagation of plant life, or pest control, or (3) engaging in dispensing activities directly affecting agriculture, horticulture, or forest preservation, but not including the dispensing of live insects.
Economic poison means (1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects, rodents, nematodes, fungi, weeds, and other forms of plant or animal life or viruses, except viruses on or in living man or other animals, which the Secretary of Agriculture shall declare to
Subpart B—Certification Rules

§ 137.11 Certificate required.
(a) Except as provided in paragraphs (c) and (d) of this section, no person may conduct agricultural aircraft operations without, or in violation of, an agricultural aircraft operator certificate issued under this part.
(b) Notwithstanding part 133 of this chapter, an operator may, if he complies with this part, conduct agricultural aircraft operations with a rotorcraft with external dispensing equipment in place without a rotorcraft external-load operator certificate.
(c) A Federal, State, or local government conducting agricultural aircraft operations with public aircraft need not comply with this subpart.
(d) The holder of a rotorcraft external-load operator certificate under part 133 of this chapter conducting an agricultural aircraft operation involving only the dispensing of water on forest fires by rotorcraft external-load means need not comply with this subpart.

§ 137.15 Application for certificate.
An application for an agricultural aircraft operator certificate is made on a form and in a manner prescribed by the FAA Flight Standards District Office that has jurisdiction over the area in which the applicant’s home base of operations is located.

§ 137.17 Amendment of certificate.
(a) An agricultural aircraft operator certificate may be amended—
(1) On the Administrator’s own initiative, under section 609 of the Federal Aviation Act of 1958 (49 U.S.C. 1429) and part 13 of this chapter; or
(2) Upon application by the holder of that certificate.
(b) An application to amend an agricultural aircraft operator certificate is submitted on a form and in a manner prescribed by the Administrator. The applicant must file the application with the FAA Flight Standards District Office having jurisdiction over the area in which the applicant’s home base of operations is located at least 15 days before the date that it proposes the amendment become effective, unless a shorter filing period is approved by that office.
(c) The Flight Standards District Office grants a request to amend a certificate if it determines that safety in air commerce and the public interest so allow.
(d) Within 30 days after receiving a refusal to amend, the holder may petition the Director, Flight Standards Service, to reconsider the refusal.

§ 137.19 Certification requirements.
(a) General. An applicant for a private agricultural aircraft operator certificate is entitled to that certificate if he shows that he meets the requirements of paragraphs (b), (d), and (e) of this section. An applicant for a commercial agricultural aircraft operator certificate is entitled to that certificate if he shows that he meets the requirements of paragraphs (c), (d), and (e) of this section. However, if an applicant applies for an agricultural aircraft operator certificate containing a prohibition against the dispensing of economic poisons, that applicant is not required to demonstrate the knowledge required in paragraphs (e)(1)(ii) through (iv) of this section.

(b) Private operator—pilot. The applicant must hold a current U.S. private, commercial, or airline transport pilot certificate and be properly rated for the aircraft to be used.
(c) Commercial operator—pilots. The applicant must have available the services of at least one person who holds a current U.S. commercial or airline transport pilot certificate and who is properly rated for the aircraft to be
§ 137.21 Duration of certificate.

An agricultural aircraft operator certificate is effective until it is surrendered, suspended, or revoked. The holder of an agricultural aircraft operator certificate that is suspended or revoked shall return it to the Administrator.

§ 137.23 Carriage of narcotic drugs, marihuana, and depressant or stimulant drugs or substances.

If the holder of a certificate issued under this part permits any aircraft owned or leased by that holder to be engaged in any operation that the certificate holder knows to be in violation of §91.19(a) of this chapter, that operation is a basis for suspending or revoking the certificate.

Subpart C—Operating Rules

§ 137.29 General.

(a) Except as provided in paragraphs (d) and (e) of this section, this subpart prescribes rules that apply to persons and aircraft used in agricultural aircraft operations conducted under this part.

(b) [Reserved]

(c) The holder of an agricultural aircraft operator certificate may deviate from the provisions of part 91 of this chapter without a certificate of waiver, as authorized in this subpart for dispensing operations, when conducting nondispensing aerial work operations related to agriculture, horticulture, or forest preservation in accordance with the operating rules of this subpart.

(d) Sections 137.31 through 137.35, §§137.41, and 137.53 through 137.59 do not apply to persons and aircraft used in agricultural aircraft operations conducted with public aircraft.

(e) Sections 137.31 through 137.35, §§137.39, 137.41, 137.51 through 137.59, and subpart D do not apply to persons and rotorcraft used in agricultural aircraft operations conducted by a person holding a certificate under part 133 of this chapter and involving only the dispensing of water on forest fires by
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Rotorcraft external-load means. However, the operation shall be conducted in accordance with—

(1) The rules of part 133 of this chapter governing rotorcraft external-load operations; and

(2) The operating rules of this subpart contained in §§137.29, 137.37, and §§137.43 through 137.49.

§ 137.31 Aircraft requirements.

No person may operate an aircraft unless that aircraft—

(a) Meets the requirements of §137.19(d); and

(b) Is equipped with a suitable and properly installed shoulder harness for use by each pilot.

§ 137.33 Carrying of certificate.

(a) No person may operate an aircraft unless a facsimile of the agricultural aircraft operator certificate, under which the operation is conducted, is carried on that aircraft. The facsimile shall be presented for inspection upon the request of the Administrator or any Federal, State, or local law enforcement officer.

(b) Notwithstanding part 91 of this chapter, the registration and airworthiness certificates issued for the aircraft need not be carried in the aircraft. However, when those certificates are not carried in the aircraft they shall be kept available for inspection at the base from which the dispensing operation is conducted.

§ 137.35 Limitations on private agricultural aircraft operator.

No person may conduct an agricultural aircraft operation under the authority of a private agricultural aircraft operator certificate—

(a) For compensation or hire;

(b) Over a congested area; or

(c) Over any property unless he is the owner or lessee of the property, or has ownership or other property interest in the crop located on that property.

§ 137.37 Manner of dispensing.

No persons may dispense, or cause to be dispensed, from an aircraft, any material or substance in a manner that creates a hazard to persons or property on the surface.

§ 137.39 Economic poison dispensing.

(a) Except as provided in paragraph (b) of this section, no person may dispense or cause to be dispensed from an aircraft, any economic poison that is registered with the U.S. Department of Agriculture under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 135-135k)—

(1) For a use other than that for which it is registered;

(2) Contrary to any safety instructions or use limitations on its label; or

(3) In violation of any law or regulation of the United States.

(b) This section does not apply to any person dispensing economic poisons for experimental purposes under—

(1) The supervision of a Federal or State agency authorized by law to conduct research in the field of economic poisons; or

(2) A permit from the U.S. Department of Agriculture issued pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 135-135k).

§ 137.41 Personnel.

(a) Information. The holder of an agricultural aircraft operator certificate shall insure that each person used in the holder’s agricultural aircraft operation is informed of that person’s duties and responsibilities for the operation.

(b) Supervisors. No person may supervise an agricultural aircraft operation unless he has met the knowledge and skill requirements of §137.19(e).

(c) Pilot in command. No person may act as pilot in command of an aircraft unless he holds a pilot certificate and rating prescribed by §137.19 (b) or (c), as appropriate to the type of operation.
conducted. In addition, he must demonstrate to the holder of the Agricultural Aircraft Operator Certificate conducting the operation that he has met the knowledge and skill requirements of §137.19(e). If the holder of that certificate has designated a person under §137.19(e) to supervise his agricultural aircraft operations the demonstration must be made to the person so designated. However, a demonstration of the knowledge and skill requirement is not necessary for any pilot in command who—

(1) is, at the time of the filing of an application by an agricultural aircraft operator, working as a pilot in command for that operator; and

(2) Has a record of operation under that applicant that does not disclose any question regarding the safety of his flight operations or his competence in dispensing agricultural materials or chemicals.

§137.42 Fastening of safety belts and shoulder harnesses.

No person may operate an aircraft in operations required to be conducted under part 137 without a safety belt and shoulder harness properly secured about that person except that the shoulder harness need not be fastened if that person would be unable to perform required duties with the shoulder harness fastened.

[Amdt. 137-10, 44 FR 61325, Oct. 25, 1979]

§137.43 Operations in controlled airspace designated for an airport.

(a) Except for flights to and from a dispensing area, no person may operate an aircraft within the lateral boundaries of the surface area of Class D airspace designated for an airport unless authorization for that operation has been obtained from the ATC facility having jurisdiction over that area.

(b) No person may operate an aircraft in weather conditions below VFR minimums within the lateral boundaries of a Class E airspace area that extends upward from the surface unless authorization for that operation has been obtained from the ATC facility having jurisdiction over that area.

(c) Notwithstanding §91.157(a)(2) of this chapter, an aircraft may be operated under the special VFR weather minimums without meeting the requirements prescribed therein.


§137.45 Nonobservance of airport traffic pattern.

Notwithstanding part 91 of this chapter, the pilot in command of an aircraft may deviate from an airport traffic pattern when authorized by the control tower concerned. At an airport without a functioning control tower, the pilot in command may deviate from the traffic pattern if—

(a) Prior coordination is made with the airport management concerned;

(b) Deviations are limited to the agricultural aircraft operation;

(c) Except in an emergency, landing and takeoffs are not made on ramps, taxiways, or other areas of the airport not intended for such use; and

(d) The aircraft at all times remains visible of, and gives way to, aircraft conforming to the traffic pattern for the airport.

§137.47 Operation without position lights.

Notwithstanding part 91 of this chapter, an aircraft may be operated without position lights if prominent unlighted objects are visible for at least 1 mile and takeoffs and landings at—

(a) Airports with a functioning control tower are made only as authorized by the control tower operator; and

(b) Other airports are made only with the permission of the airport management and no other aircraft operations requiring position lights are in progress at that airport.

§137.49 Operations over other than congested areas.

Notwithstanding part 91 of this chapter, during the actual dispensing operation, including approaches, departures, and turnarounds reasonably necessary for the operation, an aircraft may be operated over other than congested areas below 500 feet above the surface and closer than 500 feet to persons, vessels, vehicles, and structures, if the operations are conducted without
creating a hazard to persons or property on the surface.

[Amdt. 137-3, 33 F.R. 9601, July 2, 1968]

§ 137.51 Operation over congested areas: General.

(a) Notwithstanding part 91 of this chapter, an aircraft may be operated over a congested area at altitudes required for the proper accomplishment of the agricultural aircraft operation if the operation is conducted—

(1) With the maximum safety to persons and property on the surface, consistent with the operation; and

(2) In accordance with the requirements of paragraph (b) of this section.

(b) No person may operate an aircraft over a congested area except in accordance with the requirements of this paragraph.

(1) Prior written approval must be obtained from the appropriate official or governing body of the political subdivision over which the operations are conducted.

(2) Notice of the intended operation must be given to the public by some effective means, such as daily newspapers, radio, television, or door-to-door notice.

(3) A plan for each complete operation must be submitted to, and approved by appropriate personnel of the FAA Flight Standards District Office having jurisdiction over the area where the operation is to be conducted. The plan must include consideration of obstructions to flight; the emergency landing capabilities of the aircraft to be used; and any necessary coordination with air traffic control.

(4) Single engine aircraft must be operated as follows:

(i) Except for helicopters, no person may take off a loaded aircraft, or make a turnaround over a congested area.

(ii) No person may operate an aircraft over a congested area below the altitudes prescribed in part 91 of this chapter except during the actual dispensing operation, including the approaches and departures necessary for that operation.

(iii) No person may operate an aircraft over a congested area during the actual dispensing operation, including the approaches and departures for that operation, unless it is operated in a pattern and at such an altitude that the aircraft can land, in an emergency, without endangering persons or property on the surface.

(5) Multiengine aircraft must be operated as follows:

(i) No person may take off a multiengine airplane over a congested area except under conditions that will allow the airplane to be brought to a safe stop within the effective length of the runway from any point on takeoff up to the time of attaining, with all engines operating at normal takeoff power, 105 percent of the minimum control speed with the critical engine inoperative in the takeoff configuration or 115 percent of the power-off stall speed in the takeoff configuration, whichever is greater, as shown by the accelerate stop distance data. In applying this requirement, takeoff data is based upon still-air conditions, and no correction is made for any uphill gradient of 1 percent or less when the percentage is measured as the difference between elevation at the end points of the runway divided by the total length. For uphill gradients greater than 1 percent, the effective takeoff length of the runway is reduced 20 percent for each 1-percent grade.

(ii) No person may operate a multiengine airplane at a weight greater than the weight that, with the critical engine inoperative, would permit a rate of climb of at least 50 feet per minute at an altitude of at least 1,000 feet above the elevation of the highest ground or obstruction within the area to be worked or at an altitude of 5,000 feet, whichever is higher. For the purposes of this subdivision, it is assumed that the propeller of the inoperative engine is in the minimum drag position; that the wing flaps and landing gear are in the most favorable positions; and that the remaining engine or engines are operating at the maximum continuous power available.

(iii) No person may operate any multiengine aircraft over a congested area below the altitudes prescribed in part 91 of this chapter except during the actual dispensing operation, including
§ 137.53 Operation over congested areas: Pilots and aircraft.

(a) General. No person may operate an aircraft over a congested area except in accordance with the pilot and aircraft rules of this section.

(b) Pilots. Each pilot in command must have at least—

(1) 25 hours of pilot-in-command flight time in the make and basic model of the aircraft, at least 10 hours of which must have been acquired within the preceding 12 calendar months; and

(2) 100 hours of flight experience as pilot in command in dispensing agricultural materials or chemicals.

(c) Aircraft. (1) Each aircraft must—

(i) If it is an aircraft not specified in paragraph (c)(1)(ii) of this section, have had within the preceding 100 hours of time in service a 100-hour or annual inspection by a person authorized by part 65 or 145 of this chapter, or have been inspected under a progressive inspection system; and

(ii) If it is a large or turbine-powered multiengine civil airplane of U.S. registry, have been inspected in accordance with the applicable inspection program requirements of § 91.409 of this chapter.

(2) If other than a helicopter, it must be equipped with a device capable of jettisoning at least one-half of the aircraft’s maximum authorized load of agricultural material within 45 seconds. If the aircraft is equipped with a device for releasing the tank or hopper as a unit, there must be a means to prevent inadvertent release by the pilot or other crewmember.

§ 137.57 Availability of certificate.

Each holder of an agricultural aircraft operator certificate shall keep that certificate at his home base of operations and shall present it for inspection on the request of the Administrator or any Federal, State, or local law enforcement officer.

§ 137.59 Inspection authority.

Each holder of an agricultural aircraft operator certificate shall allow the Administrator at any time and place to make inspections, including on-the-job inspections, to determine compliance with applicable regulations and his agricultural aircraft operator certificate.

Subpart D—Records and Reports

§ 137.71 Records: Commercial agricultural aircraft operator.

(a) Each holder of a commercial agricultural aircraft operator certificate shall maintain and keep current, at the home base of operations designated in his application, the following records:

(1) The name and address of each person for whom agricultural aircraft services were provided;

(2) The date of the service;

(3) The name and quantity of the material dispensed for each operation conducted; and

(4) The name, address, and certificate number of each pilot used in agricultural aircraft operations and the date that pilot met the knowledge and skill requirements of § 137.19(e).

(b) The records required by this section must be kept at least 12 months and made available for inspection by the Administrator upon request.

§ 137.75 Change of address.

Each holder of an agricultural aircraft operator certificate shall notify the FAA in writing in advance of any change in the address of his home base of operations.

§ 137.77 Termination of operations.

Whenever a person holding an agricultural aircraft operator certificate ceases operations under this part, he shall surrender that certificate to the FAA Flight Standards District Office.
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§ 139.1 Applicability.

This part prescribes rules governing the certification and operation of land airports which serve any scheduled or unscheduled passenger operation of an air carrier that is conducted with an aircraft having a seating capacity of more than 30 passengers. This part does not apply to airports at which air carrier passenger operations are conducted only by reason of the airport being designated as an alternate airport.

§ 139.3 Definitions.

The following are definitions of terms as used in this part:

AFFF means aqueous film forming foam agent.

Air carrier means a person who holds or who is required to hold an air carrier operating certificate issued under this chapter while operating aircraft having a seating capacity of more than 30 passengers.

Air carrier aircraft means an aircraft with a seating capacity of more than 30 passengers which is being operated by an air carrier.

Air carrier operation means the take-off or landing of an air carrier aircraft and includes the period of time from 15 minutes before and until 15 minutes after the takeoff or landing.

Airport means an area of land or other hard surface, excluding water,
that is used or intended to be used for
the landing and takeoff of aircraft, and
includes its buildings and facilities, if
any.

Airport operating certificate means a
certificate, issued under this part, for
operation of an airport serving sched-
uled operations of air carriers.

Average daily departures means the
average number of scheduled depart-
tures per day of air carrier aircraft
computed on the basis of the busiest 3
consecutive months of the immediately
preceding 12 calendar months; except
that if the average daily departures are
expected to increase, then “average
daily departures” may be determined
by planned rather than current activ-
ity in a manner acceptable to the Ad-
ministrator.

Certificate holder means the holder of
an airport operating certificate or a
limited airport operating certificate,
except that as used in subpart D “cer-
tificate holder” does not mean the
holder of a limited airport operating
certificate if its airport certification
specifications, or this part, do not re-
quire compliance with the section in
which it is used.

Heliport means an airport or an area
of an airport used or intended to be
used for the landing and takeoff of heli-
copters.

Index means an airport ranking ac-
cording to the type and quantity of air-
craft rescue and firefighting equipment
and agent required, determined by the
length and frequency of air carrier air-
craft served by the airport, as provided
in subpart D of this part.

Limited airport operating certificate
means a certificate, issued under this
part, for the operation of an airport
serving unscheduled operations of air
 carriers.

Movement area means the runways,
taxiways, and other areas of an airport
which are used for taxiing or hover tax-
iling, air taxiing, takeoff, and landing
of aircraft, exclusive of loading ramps
and aircraft parking areas.

Regional Airports Division Manager
means the airports division manager
for the FAA region in which the air-
port is located.

Safety area means a designated area
abutting the edges of a runway or taxi-
way intended to reduce the risk of
damage to an aircraft inadvertently
leaving the runway or taxiway.

Wildlife hazard means a potential for
a damaging aircraft collision with
wildlife on or near an airport. As used
in this part, “wildlife” includes domes-
tic animals while out of the control of
their owners.

§ 139.5 Standards and procedures for
compliance with the certification
and operations requirements of this
part.

Certain requirements prescribed by
subparts C and D of this part must be
complied with in a manner acceptable
to the Administrator. FAA Advisory
Circulars contain standards and proce-
dures that are acceptable to the Ad-
ministrator for compliance with sub-
parts C and D. Some of these advisory
circulars are referenced in specific sec-
tions of this part. The standards and
procedures in them, or other standards
and procedures approved by the Admin-
istrator, may be used to comply with
those sections.

Subpart B—Certification
§ 139.101 Certification requirements:
General.

(a) No person may operate a land air-
port in any State of the United States,
the District of Columbia, or any terri-
tory or possession of the United States,
serving any scheduled passenger oper-
ation of an air carrier operating an air-
craft having a seating capacity of more
than 30 passengers without an airport
operating certificate, or in violation of
that certificate, the applicable provi-
sions of this part, or the approved air-
port certification manual for that air-
port.

(b) Unless otherwise authorized by
the Administrator, no person may op-
erate a land airport in any State of the
United States, the District of Colum-
bia, or any territory or possession of
the United States, serving any un-
scheduled passenger operation of an air
carrier operating an aircraft having a
seating capacity of more than 30 pas-
sengers without a limited airport oper-
ating certificate, or in violation of that
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§ 139.103 Application for certificate.

(a) Each applicant for an airport operating certificate or a limited airport operating certificate must submit an application, in a form and in the manner prescribed by the Administrator, to the Regional Airports Division Manager.

(b) The application must be accompanied by two copies of an airport certification manual or airport certification specifications, as appropriate, prepared in accordance with subpart C of this part.

§ 139.105 Inspection authority.

Each applicant for an airport operating certificate or a limited airport operating certificate must allow the Administrator to make any inspections, including unannounced inspections, or tests to determine compliance with—

(a) The Federal Aviation Act of 1958, as amended; and

(b) The requirements of this part.

§ 139.107 Issuance of certificate.

(a) An applicant for an airport operating certificate is entitled to a certificate if—

(1) The provisions of §139.103 of this subpart are met;

(2) The Administrator, after investigation, finds that the applicant is properly and adequately equipped and able to provide a safe airport operating environment in accordance with—

(i) The provisions of subpart D listed in §139.213(a) of this part, and

(ii) Any other provisions of this part and any limitations which the Administrator finds necessary in the public interest; and

(3) The Administrator approves the airport certification specifications.

§ 139.109 Duration of certificate.

An airport operating certificate or a limited airport operating certificate issued under this part is effective until it is surrendered by the certificate holder or is suspended or revoked by the Administrator.

§ 139.111 Exemptions.

(a) An applicant or a certificate holder may petition the Administrator under §11.25, Petitions for Rule Making or Exemptions, of this chapter for an exemption from any requirement of this part.

(b) An applicant or a certificate holder, enplaning annually less than one-quarter of 1 percent of the total number of passengers enplaned at all air carrier airports, may petition the Administrator under §11.25, Petitions for Rule Making or Exemptions, of this chapter for an exemption from all or part of the rescue and firefighting equipment requirements of this part on the grounds that compliance with those requirements is, or would be, unreasonably costly, burdensome, or impractical.

(c) Each petition filed under this section must be submitted in duplicate to the Regional Airports Division Manager.

§ 139.113 Deviations.

In emergency conditions requiring immediate action for the protection of life or property, involving the transportation of persons by air carriers, the certificate holder may deviate from any requirement of subpart D of this part to the extent required to meet that emergency. Each certificate holder who deviates from a requirement
§ 139.201  Airport operating certificate: Airport certification manual.

(a) An applicant for an airport operating certificate must prepare, and submit with an application, an airport certification manual for approval by the Administrator. Only those items addressing subjects required for certification under this part shall be included in the airport certification manual.

(b) Except as provided in paragraph (c) of this section, each certificate holder shall comply with an approved airport certification manual that meets the requirements of §§ 139.203 and 139.205.

(c) A certificate holder with an approved airport operations manual on December 31, 1987, may use the manual in lieu of the manual required by paragraph (b) of this section until December 31, 1988. Until the certificate holder has an approved airport certification manual, it shall comply with §139.207 as if that section applied to its airport operations manual.

[Doc. No. 24812, 52 FR 44282, Nov. 18, 1987; as amended by Amdt. 139-16, 54 FR 39295, Sept. 25, 1989]

§ 139.203  Preparation of airport certification manual.

(a) Each airport certification manual required by this part shall—

1. Be typewritten and signed by the airport operator;

2. Be in a form that is easy to revise;

3. Have the date of initial approval or approval of the latest revision on each page or item in the manual and include a page revision log; and

4. Be organized in a manner helpful to the preparation, review, and approval processes.

(b) FAA Advisory Circulars in the 139 series contain standards and procedures for the development of airport certification manuals which are acceptable to the Administrator.

§ 139.205  Contents of airport certification manual.

(a) Each airport certification manual required by this part shall include operating procedures, facilities and equipment descriptions, responsibility assignments, and any other information needed by personnel concerned with operating the airport in order to comply with—

1. The provisions of subpart D of this part; and

2. Any limitations which the Administrator finds necessary in the public interest.

(b) In complying with paragraph (a) of this section, the airport certification manual must include at least the following elements:

1. Lines of succession of airport operational responsibility.

2. Each current exemption issued to the airport from the requirements of this part.

3. Any limitations imposed by the Administrator.

4. A grid map or other means of identifying locations and terrain features on and around the airport which are significant to emergency operations.

5. The system of runway and taxiway identification.

6. The location of each obstruction required to be lighted or marked within the airport's area of authority.

7. A description of each movement area available for air carriers and its safety areas and each road described in §139.319(k) that serves it.

8. Procedures for avoidance of interruption or failure during construction work of utilities serving facilities or navaids which support air carrier operations.

9. Procedures for maintaining the paved areas as required by §139.305.

10. Procedures for maintaining the unpaved areas as required by §139.307.

11. Procedures for maintaining the safety areas as required by §139.309.

12. A description of, and procedures for maintaining, the marking and
lighting systems as required by §139.311.
(13) A snow and ice control plan as required by §139.313.
(14) A description of the facilities, equipment, personnel, and procedures for meeting the rescue and firefighting requirements in §§139.317 and 139.319.
(15) Procedures for complying with the requirements of §139.321 relating to hazardous substances and materials.
(16) A description of, and procedures for maintaining, the traffic and wind direction indicators required by §139.322.
(17) An emergency plan as required by §139.324.
(18) Procedures for conducting the self-inspection program as required by §139.327.
(19) Procedures for controlling ground vehicles as required by §139.329.
(20) Procedures for obstruction removal, marking, or lighting as required by §139.331.
(21) Procedures for protection of navaids as required by §139.333.
(22) A description of public protection as required by §139.335.
(23) A wildlife hazard management plan as required by §139.337.
(24) Procedures for airport condition reporting as required by §139.339.
(25) Procedures for identifying, marking, and reporting construction and other unserviceable areas as required by §139.341.
(26) Any other item which the Administrator finds is necessary in the public interest.

§139.207 Maintenance of airport certification manual.
Each holder of an airport operating certificate shall—
(a) Keep its airport certification manual current at all times;
(b) Maintain at least one complete and current copy of its approved airport certification manual on the airport;
(c) Furnish the applicable portions of the approved airport certification manual to the airport personnel responsible for their implementation;
(d) Make the copy required by paragraph (b) of this section available for inspection by the Administrator upon request; and
(e) Provide the Administrator with one complete and current copy required by paragraph (b) of this section.

§139.209 Limited airport operating certificate: Airport certification specifications.
(a) An applicant for a limited airport operating certificate must prepare, and submit with an application, airport certification specifications for approval by the Administrator. Only those items addressing subjects required for certification under this part shall be included in the airport certification specifications.
(b) Except as provided in paragraph (c) of this section, each certificate holder shall comply with the approved airport certification specifications that meet the requirements of §§139.211 and 139.213.
(c) A certificate holder with an approved airport operations specification on December 31, 1987, may use those specifications in lieu of the specifications required by paragraph (b) of this section until December 31, 1988. Until the certificate holder has approved airport certification specifications, it shall comply with §139.215 as if that section applied to its airport operations specifications.

§139.211 Preparation of airport certification specifications.
(a) Each airport certification specifications required by this part shall—
(1) Be typewritten and signed by the airport operator;
(2) Be in a form that is easy to revise;
(3) Have the date of initial approval or approval of the latest revision on each page or item in the specifications and include a page revision log; and
(4) Be organized in a manner helpful to the preparation, review, and approval processes.
(b) FAA Advisory Circulars in the 139 series contain standards and procedures for the development of airport certification specifications which are acceptable to the Administrator.
§ 139.213 Contents of airport certification specifications.

(a) The airport certification specifications required by this part shall include operating procedures, facilities and equipment descriptions, responsibility assignments, and any other information needed by personnel concerned with operating the airport in order to comply with—

(1) The following provisions of subpart D of this part:
   (i) Section 139.301 Inspection authority.
   (ii) Section 139.303 Personnel.
   (iii) Section 139.305 Paved areas.
   (iv) Section 139.307 Unpaved areas.
   (v) Section 139.309 Safety areas.
   (vi) Section 139.311 Marking and lighting.
   (vii) Section 139.339 Airport condition reporting.

(2) Any other provisions of subpart D of this part, and any limitations, which the Administrator finds necessary in the public interest.

(b) In complying with paragraph (a) of this section, the airport certification specifications shall include at least the following elements:

(1) Lines of succession of airport operational responsibility.
(2) Each current exemption issued to the airport from the requirements of this part.
(3) Any limitations imposed by the Administrator.
(4) The system of runway and taxiway identification.
(5) The location of each obstruction required to be lighted or marked within the airport's area of authority.
(6) A description of each movement area available for air carriers and its safety areas.
(7) Procedures for maintaining the paved areas as required by §139.305.
(8) Procedures for maintaining the unpaved areas as required by §139.307.
(9) Procedures for maintaining the safety areas as required by §139.309.
(10) A description of, and procedures for maintaining, the marking and lighting systems as required by §139.311.
(11) A description of the facilities, equipment, personnel, and procedures for emergency response to aircraft rescue and firefighting needs.

(12) Procedures for safety in storing and handling of hazardous substances and materials.
(13) A description of, and procedures for maintaining, any traffic and wind direction indicators on the airport.
(14) A description of the procedures used for conducting self-inspections of the airport.
(15) Procedures and responsibilities for airport condition reporting as required by §139.339.
(16) Procedures for compliance with any other provisions of subpart D of this part, and any limitations, which the Administrator finds necessary in the public interest.

§ 139.215 Maintenance of airport certification specifications.

Each holder of a limited airport operating certificate shall—

(a) Keep its airport certification specifications current at all times;
(b) Maintain at least one complete and current copy of its approved airport certification specifications on the airport;
(c) Furnish the applicable portions of the approved airport certification specifications to the airport personnel responsible for their implementation;
(d) Make the copy required by paragraph (b) of this section available for inspection by the Administrator upon request; and
(e) Provide the Administrator with one complete and current copy required by paragraph (b) of this section.

§ 139.217 Amendment of airport certification manual or airport certification specifications.

(a) The Regional Airports Division Manager may amend any airport certification manual or any airport certification specifications approved under this part, either—

(1) Upon application by the certification holder; or
(2) On the Regional Airports Division Manager's own initiative if the Regional Airports Division Manager determines that safety in air transportation or air commerce and the public interest require the amendment.

(b) An applicant for an amendment to its airport certification manual or its airport certification specifications
shall file its application with the Regional Airports Division Manager at least 30 days before the proposed effective date of the amendment, unless a shorter filing period is allowed by that office.

(c) At any time within 30 days after receiving a notice of refusal to approve the application for amendment, the certificate holder may petition the Administrator to reconsider the refusal to amend.

(d) In the case of amendments initiated by the Regional Airports Division Manager, the office notifies the certificate holder of the proposed amendment, in writing, fixing a reasonable period (but not less than 7 days) within which the certificate holder may submit written information, views, and arguments on the amendment. After considering all relevant material presented, the Regional Airports Division Manager notifies the certificate holder of any amendment adopted or rescinds the notice. The amendment becomes effective not less than 30 days after the certificate holder receives notice of it, except that prior to the effective date the Administrator may petition the Administrator to reconsider the amendment, in which case its effective date is stayed pending a decision by the Administrator.

(e) Notwithstanding the provisions of paragraph (d) of this section, if the Regional Airports Division Manager finds that there is an emergency requiring immediate action with respect to safety in air transportation or air commerce that makes the procedures in this paragraph impractical or contrary to the public interest, the Regional Airports Division Manager may issue an amendment, effective without stay on the date the certificate holder receives notice of it. In such a case, the Regional Airports Division Manager incorporates the finding of the emergency, and a brief statement of the reasons for the finding, in the notice of the amendment. Within 30 days after the issuance of such an emergency amendment, the certificate holder may petition the Administrator to reconsider either the finding of an emergency amendment itself or both. This petition does not automatically stay the effectiveness of the emergency amendment.

[Doc. No. 24812, 52 FR 44282, Nov. 18, 1987, as amended by Amdt. 139-16, 54 FR 39295, Sept. 25, 1989]

Subpart D—Operations

§ 139.305 Paved areas.

(a) Each certificate holder shall maintain, and promptly repair the pavement of, each runway, taxiway, loading ramp, and parking area on the airport which is available for air carrier use as follows:

1. The pavement edges shall not exceed 3 inches difference in elevation between abutting pavement sections and between full strength pavement and abutting shoulders.

2. The pavement shall have no hole exceeding 3 inches in depth nor any hole the slope of which from any point in the hole to the nearest point at the lip of the hole is 45 degrees or greater as measured from the pavement surface plane, unless, in either case, the entire area of the hole can be covered by a 5-inch diameter circle.

3. The pavement shall be free of cracks and surface variations which could impair directional control of air carrier aircraft.

4. Except as provided in paragraph (b) of this section, mud, dirt, sand, loose aggregate, debris, foreign objects, rubber deposits, and other contaminants shall be removed promptly and as completely as practicable.

5. Except as provided in paragraph (b) of this section, any chemical solvent that is used to clean any pavement area shall be removed as soon as
§ 139.307 Unpaved areas.

(a) Each certificate holder shall maintain and promptly repair the surface of each gravel, turf, or other unpaved runway, taxiway, or loading ramp and parking area on the airport which is available for air carrier use as follows:

(1) No slope from the edge of the full-strength surfaces downward to the existing terrain shall be steeper than 2:1.

(2) The full-strength surfaces shall have adequate crown or grade to assure sufficient drainage to prevent ponding.

(3) The full-strength surfaces shall be adequately compacted and sufficiently stable to prevent rutting by aircraft, or the loosening or buildup of surface material which could impair directional control of aircraft or drainage.

(4) The full-strength surfaces must have no holes or depressions which exceed 3 inches in depth and are of a breadth capable of impairing directional control or causing damage to an aircraft.

(5) Debris and foreign objects shall be promptly removed from the surface.

(b) Standards and procedures for the maintenance and configuration of unpaved full-strength surfaces shall be included in the airport certification manual or the airport certification specifications, as appropriate, for compliance with this section.

§ 139.309 Safety areas.

(a) To the extent practicable, each certificate holder shall provide and maintain for each runway and taxiway which is available for air carrier use—

(1) If the runway or taxiway had a safety area on December 31, 1987, and if no reconstruction or significant expansion of the runway or taxiway was begun on or after January 1, 1988, a safety area of at least the dimensions that existed on December 31, 1987; or

(2) If construction, reconstruction, or significant expansion of the runway or taxiway began on or after January 1, 1988, a safety area which conforms to the dimensions acceptable to the Administrator at the time construction, reconstruction, or expansion began.

(b) Each certificate holder shall maintain its safety areas as follows:

(1) Each safety area shall be cleared and graded, and have no potentially hazardous ruts, humps, depressions, or other surface variations.

(2) Each safety area shall be drained by grading or storm sewers to prevent water accumulation.

(3) Each safety area shall be capable under dry conditions of supporting snow removal equipment, and aircraft rescue and firefighting equipment, and supporting the occasional passage of aircraft without causing major damage to the aircraft.

(4) No object may be located in any safety area, except for objects that need to be located in a safety area because of their function. These objects shall be constructed, to the extent practical, on frangibly mounted structures of the lowest practical height with the frangible point no higher than 3 inches above grade.

(c) FAA Advisory Circulars in the 150 series contain standards and procedures for the configuration and maintenance of safety areas acceptable to the Administrator.

§ 139.311 Marking and lighting.

(a) Each certificate holder shall provide and maintain at least the following marking systems for air carrier operations on the airport:

(1) Runway markings meeting the specifications for the approach with the lowest minimums authorized for each runway.

(2) Taxiway centerline and edge markings.

(3) Signs identifying taxiing routes on the movement area.
(4) Runway holding position markings and signs.

(5) ILS critical area markings and signs.

(b) Each certificate holder shall provide and maintain, when the airport is open during hours of darkness or during conditions below VFR minimums, at least the following lighting systems for air carrier operations on the airport:

(1) Runway lighting meeting the specifications for the approach with the lowest minimums authorized for each runway.

(2) One of the following taxiway lighting systems:

(i) Centerline lights.

(ii) Centerline reflectors.

(iii) Edge lights.

(iv) Edge reflectors.

(3) An airport beacon.

(4) Approach lighting meeting the specifications for the approach with the lowest minimums authorized for each runway, unless otherwise provided and maintained by the FAA or another agency.

(5) Obstruction marking and lighting, as appropriate, on each object within its authority which constitutes an obstruction under part 77 of this chapter. However, this lighting and marking is not required if it is determined to be unnecessary by an FAA aeronautical study.

(c) Each certificate holder shall properly maintain each marking or lighting system installed on the airport which is owned by the certificate holder. As used in this section, to "properly maintain" includes: To clean, replace, or repair any faded, missing, or nonfunctional item of lighting; to keep each item unobscured and clearly visible; and to ensure that each item provides an accurate reference to the user.

(d) Each certificate holder shall ensure that all lighting on the airport, including that for aprons, vehicle parking areas, roadways, fuel storage areas, and buildings, is adequately adjusted or shielded to prevent interference with air traffic control and aircraft operations.

(e) FAA Advisory Circulars in the 150 series contain standards and procedures for equipment, material, installation, and maintenance of light systems and marking listed in this section which are acceptable to the Administrator.

(f) Notwithstanding paragraph (a) of this section, a certificate holder is not required to provide the identified signs in paragraph (a)(3) of this section until January 1, 1995. Each certificate holder shall maintain each marking system that meets paragraph (a)(3) of this section.

§ 139.313 Snow and ice control.

(a) Each certificate holder whose airport is located where snow and icing conditions regularly occur shall prepare, maintain, and carry out a snow and ice control plan.

(b) The snow and ice control plan required by this section shall include instructions and procedures for—

(1) Prompt removal or control, as completely as practical, of snow, ice, and slush on each movement area;

(2) Positioning snow off of movement area surfaces so that all air carrier aircraft propellers, engine pods, rotors, and wingtips will clear any snowdrift and snowbank as the aircraft's landing gear traverses any full strength portion of the movement area;

(3) Selection and application of approved materials for snow and ice control to ensure that they adhere to snow and ice sufficiently to minimize engine ingestion;

(4) Timely commencement of snow and ice control operations; and

(5) Prompt notification, in accordance with §139.339, of all air carriers using the airport when any portion of the movement area normally available to them is less than satisfactorily cleared for safe operation by their aircraft.

(c) FAA Advisory Circulars in the 150 series contain standards for snow and ice control equipment, materials, and procedures for snow and ice control which are acceptable to the Administrator.
§ 139.315 Aircraft rescue and firefighting: Index determination.

(a) An Index is required by paragraph (c) of this section for each certificate holder. The Index is determined by a combination of—

(1) The length of air carrier aircraft expressed in groups; and

(2) Average daily departures of air carrier aircraft.

(b) For the purpose of Index determination, air carrier aircraft lengths are grouped as follows:

(1) Index A includes aircraft less than 90 feet in length.

(2) Index B includes aircraft at least 90 feet but less than 126 feet in length.

(3) Index C includes aircraft at least 126 feet but less than 159 feet in length.

(4) Index D includes aircraft at least 159 feet but less than 200 feet in length.

(5) Index E includes aircraft at least 200 feet in length.

(c) Except as provided in § 139.319(c), the Index required by § 139.319 is determined as follows:

(1) If there are five or more average daily departures of air carrier aircraft in a single Index group serving that airport, the longest Index group with an average of 5 or more daily departures is the Index required for the airport.

(2) If there are less than five average daily departures of air carrier aircraft in a single Index group serving that airport, the next lower Index from the longest Index group with air carrier aircraft in it is the Index required for the airport. The minimum designated Index shall be Index A.

§ 139.317 Aircraft rescue and firefighting: Equipment and agents.

The following rescue and firefighting equipment and agents are the minimum required for the Indexes referred to in § 139.315:

(a) Index A: One vehicle carrying at least—

(1) 500 pounds of sodium-based dry chemical or halon 1211; or

(2) 450 pounds of potassium-based dry chemical and water with a commensurate quantity of AFFF for foam application.

(b) Index B: Either of the following:

(1) One vehicle carrying at least 500 pounds of sodium-based dry chemical or halon 1211, and 1,500 gallons of water, and the commensurate quantity of AFFF for foam production.

(2) Two vehicles—

(i) One vehicle carrying the extinguishing agents as specified in paragraph (a)(1) or (2) of this section; and

(ii) One vehicle carrying an amount of water and the commensurate quantity of AFFF so that the total quantity of water for foam production carried by both vehicles is at least 1,500 gallons.

(c) Index C: Either of the following:

(1) Three vehicles—

(i) One vehicle carrying the extinguishing agents as specified in paragraph (a)(1) or (2) of this section; and

(ii) Two vehicles carrying an amount of water and the commensurate quantity of AFFF so that the total quantity of water for foam production carried by all three vehicles is at least 3,000 gallons.

(d) Index D: Three vehicles—

(1) One vehicle carrying the extinguishing agents as specified in paragraph (a)(1) or (2) of this section; and

(2) Two vehicles carrying an amount of water and the commensurate quantity of AFFF so that the total quantity of water for foam production carried by all three vehicles is at least 4,000 gallons.

(e) Index E: Three vehicles—

(1) One vehicle carrying the extinguishing agents as specified in paragraph (a)(1) or (2) of this section; and

(2) Two vehicles carrying an amount of water and the commensurate quantity of AFFF so that the total quantity of water for foam production carried by all three vehicles is at least 6,000 gallons.

(f) Notwithstanding the provisions of paragraphs (a) through (e) of this section, any certificate holder whose vehicles met the requirements of this part for quantity and type of extinguishing
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agent on December 31, 1987, may comply with the Index requirements of this section by carrying extinguishing agents to the full capacity of those vehicles. Whenever any of those vehicles is replaced or rehabilitated, the capacity of the replacement or rehabilitated vehicle shall be sufficient to comply with the requirements of the required Index.

(g) Foam discharge capacity. Each aircraft rescue and firefighting vehicle used to comply with Index B, C, D, or E requirements with a capacity of at least 500 gallons of water for foam production shall be equipped with a turret. Vehicle turret discharge capacity shall be as follows:

(1) Each vehicle with a minimum rated vehicle water tank capacity of at least 500 gallons but less than 2,000 gallons shall have a turret discharge rate of at least 500 gallons per minute but not more than 1,000 gallons per minute.

(2) Each vehicle with a minimum rated vehicle water tank capacity of at least 2,000 gallons shall have a turret discharge rate of at least 600 gallons per minute but not more than 1,200 gallons per minute.

(3) Notwithstanding the requirements of paragraph (g) of this section, any certificate holder whose aircraft rescue and firefighting vehicles are not equipped with turrets or do not have the discharge capacity required in this section, but otherwise met the requirements of this part on December 31, 1987, need not comply with paragraph (g) of this section for a particular vehicle until that vehicle is replaced or rehabilitated.

(h) Dry chemical and halon 1211 discharge capacity. Each aircraft rescue and firefighting vehicle which is required to carry dry chemical or halon 1211 for compliance with the Index requirements of this section must meet one of the following minimum discharge rates for the equipment installed:

(1) Dry chemical or halon 1211 through a hand line, 5 pounds per second.

(2) Dry chemical or halon 1211 through a turret, 16 pounds per second.

(i) Extinguishing agent substitutions. The following extinguishing agent substitutions may be made:

(1) Protein or fluoroprotein foam concentrates may be substituted for AFFF. When either of these substitutions is selected, the volume of water to be carried for the substitute foam production shall be calculated by multiplying the volume of water required for AFFF by the factor 1.5.

(2) Sodium- or potassium-based dry chemical or halon 1211 may be substituted for AFFF. Up to 30 percent of the amount of water specified for AFFF production may be replaced by dry chemical or halon 1211. When this substitution is selected, 12.7 pounds of dry chemical or halon 1211 shall be substituted for each gallon of water used for AFFF foam production.

(3) Sodium- or potassium-based dry chemical or halon 1211 may be substituted for protein or fluoroprotein foam. When this substitution is selected, 8.4 pounds of dry chemical or halon 1211 shall be substituted for one gallon of water for protein or fluoroprotein foam production.

(4) AFFF may be substituted for dry chemical or halon 1211. For airports where meteorological conditions, such as consistently high winds and precipitation, would frequently prevent the effective use of dry chemical or halon 1211, up to 50 percent of these agents may be replaced by water for AFFF production. When this substitution is selected, one gallon of water for foam production with the commensurate quantity of AFFF shall be substituted for 12.7 pounds of dry chemical or halon 1211.

(5) Potassium-based dry chemical may be substituted for sodium-based dry chemical. Where 500 pounds of sodium-based dry chemical is specified, 450 pounds of potassium-based dry chemical may be substituted.

(6) Other extinguishing agent substitutions acceptable to the Administrator may be made in amounts that provide equivalent firefighting capability.

(j) In addition to the quantity of water required, each vehicle required
§ 139.319 Aircraft rescue and firefighting: Operational requirements.

(a) Except as provided in paragraph (c) of this section, each certificate holder shall provide on the airport, during air carrier operations at the airport, at least the rescue and firefighting capability specified for the Index required by §139.317.

(b) Increase in index. Except as provided in paragraph (c) of this section, if an increase in the average daily departures or the length of air carrier aircraft results in an increase in the Index required by paragraph (a) of this section, the certificate holder shall comply with the increased requirements.

(c) Reduction in rescue and firefighting. During air carrier operations with only aircraft shorter than the Index aircraft group required by paragraph (a) of this section, the certificate holder may reduce the rescue and firefighting to a lower level corresponding to the Index group of the longest air carrier aircraft being operated.

(d) Any reduction in the rescue and firefighting capability from the Index required by paragraph (a) of this section in accordance with paragraph (c) of this section shall be subject to the following conditions:

(1) Procedures for, and the persons having the authority to implement, the reductions must be included in the airport certification manual.

(2) A system and procedures for recall of the full aircraft rescue and firefighting capability must be included in the airport certification manual.

(3) The reductions may not be implemented unless notification to air carriers is provided in the Airport/Facility Directory or Notices to Airmen (NOTAM), as appropriate, and by direct notification of local air carriers.

(e) Vehicle communications. Each vehicle required under §139.317 shall be equipped with two-way voice radio communications which provides for contact with at least—

(1) Each other required emergency vehicle;

(2) The air traffic control tower, if it is located on the airport; and

(3) Other stations, as specified in the airport emergency plan.

(f) Vehicle marking and lighting. Each vehicle required under §139.317 shall—

(1) Have a flashing or rotating beacon; and

(2) Be painted or marked in colors to enhance contrast with the background environment and optimize daytime and nighttime visibility and identification.

(g) FAA Advisory Circulars in the 150 series contain standards for painting, marking and lighting vehicles used on airports which are acceptable to the Administrator.

(h) Vehicle readiness. Each vehicle required under §139.317 shall be maintained as follows:

(1) The vehicle and its systems shall be maintained so as to be operationally capable of performing the functions required by this subpart during all air carrier operations.

(2) If the airport is located in a geographical area subject to prolonged temperatures below 33 degrees Fahrenheit, the vehicles shall be provided with cover or other means to ensure equipment operation and discharge under freezing conditions.

(3) Any required vehicle which becomes inoperative to the extent that it cannot perform as required by §139.319(h)(1) shall be replaced immediately with equipment having at least equal capabilities. If replacement equipment is not available immediately, the certificate holder shall so notify the Regional Airports Division Manager and each air carrier using the airport in accordance with §139.339. If the required Index level of capability is not restored within 48 hours, the airport operator, unless otherwise authorized by the Administrator, shall limit air carrier operations on the airport to those compatible with the Index corresponding to the remaining operative rescue and firefighting equipment.
(i) Response requirements. (1) Each certificate holder, with the airport rescue and firefighting equipment required under this part and the number of trained personnel which will assure an effective operation, shall—
   (i) Respond to each emergency during periods of air carrier operations; and
   (ii) When requested by the Administrator, demonstrate compliance with the response requirements specified in this section.

(2) The response required by paragraph (i)(1)(ii) of this section shall achieve the following performance:
   (i) Within 3 minutes from the time of the alarm, at least one required airport rescue and firefighting vehicle shall reach the midpoint of the farthest runway serving air carrier aircraft from its assigned post, or reach any other specified point of comparable distance on the movement area which is available to air carriers, and begin application of foam, dry chemical, or halon 1211.

   (ii) Within 4 minutes from the time of alarm, all other required vehicles shall reach the point specified in paragraph (i)(2)(i) of this section from their assigned post and begin application of foam, dry chemical, or halon 1211.

(j) Personnel. Each certificate holder shall ensure the following:
   (1) All rescue and firefighting personnel are equipped in a manner acceptable to the Administrator with protective clothing and equipment needed to perform their duties.
   (2) All rescue and firefighting personnel are properly trained to perform their duties in a manner acceptable to the Administrator. The training curriculum shall include initial and recurrent instruction in at least the following areas:
      (i) Airport familiarization.
      (ii) Aircraft familiarization.
      (iii) Rescue and firefighting personnel safety.
      (iv) Emergency communications systems on the airport, including fire alarms.
      (v) Use of the fire hoses, nozzles, turrets, and other appliances required for compliance with this part.
      (vi) Application of the types of extinguishing agents required for compliance with this part.
      (vii) Emergency aircraft evacuation assistance.
      (viii) Firefighting operations.
      (ix) Adapting and using structural rescue and firefighting equipment for aircraft rescue and firefighting.
      (x) Aircraft cargo hazards.
      (xi) Familiarization with firefighters' duties under the airport emergency plan.

(3) All rescue and firefighting personnel participate in at least one live-fire drill every 12 months.

(4) After January 1, 1989, at least one of the required personnel on duty during air carrier operations has been trained and is current in basic emergency medical care. This training shall include 40 hours covering at least the following areas:
   (i) Bleeding.
   (ii) Cardiopulmonary resuscitation.
   (iii) Shock.
   (iv) Primary patient survey.
   (v) Injuries to the skull, spine, chest, and extremities.
   (vi) Internal injuries.
   (vii) Moving patients.
   (viii) Burns.
   (ix) Triage.

(5) Sufficient rescue and firefighting personnel are available during all air carrier operations to operate the vehicles, meet the response times, and meet the minimum agent discharge rates required by this part;

(6) Procedures and equipment are established and maintained for alerting rescue and firefighting personnel by siren, alarm, or other means acceptable to the Administrator, to any existing or impending emergency requiring their assistance.

(k) Emergency access roads. Each certificate holder shall ensure that roads which are designated for use as emergency access roads for aircraft rescue and firefighting vehicles are maintained in a condition that will support those vehicles during all-weather conditions.
§ 139.321 Handling and storing of hazardous substances and materials.

(a) Each certificate holder which acts as a cargo handling agent shall establish and maintain procedures for the protection of persons and property on the airport during the handling and storing of any material regulated by the Hazardous Materials Regulations (49 CFR part 171, et seq.), that is, or is intended to be, transported by air. These procedures shall provide for at least the following:

1. Designated personnel to receive and handle hazardous substances and materials.
2. Assurance from the shipper that the cargo can be handled safely, including any special handling procedures required for safety.
3. Special areas for storage of hazardous materials while on the airport.

(b) Each certificate holder shall establish and maintain standards acceptable to the Administrator for protecting against fire and explosions in storing, dispensing, and otherwise handling fuel, lubricants, and oxygen (other than articles and materials that are, or are intended to be, aircraft cargo) on the airport. These standards shall cover facilities, procedures, and personnel training and shall address at least the following:

1. Grounding and bonding.
2. Public protection.
3. Control of access to storage areas.
4. Fire safety in fuel farm and storage areas.
5. Fire safety in mobile fuelers, fueling pits, and fueling cabinets.
6. After January 1, 1989, training of fueling personnel in fire safety in accordance with paragraph (e) of this section.
7. The fire code of the public body having jurisdiction over the airport.

(c) Each certificate holder shall, as a fueling agent, comply with and, except as provided in paragraph (h) of this section, require all other fueling agents operating on the airport to comply with the standards established under paragraph (b) of this section and shall perform reasonable surveillance of all fueling activities on the airport with respect to those standards.

(d) Each certificate holder shall inspect the physical facilities of each airport tenant fueling agent at least once every 3 months for compliance with paragraph (b) of this section and maintain a record of that inspection for at least 12 months. The certificate holder may use an independent organization to perform this inspection if—

1. It is acceptable by the Administrator; and
2. It prepares a record of its inspection sufficiently detailed to assure the certificate holder and the FAA that the inspection is adequate.

(e) The training required in paragraph (b)(6) of this section shall include at least the following:

1. At least one supervisor with each fueling agent shall have completed an aviation fuel training course in fire safety which is acceptable to the Administrator.
2. All other employees who fuel aircraft, accept fuel shipments, or otherwise handle fuel shall receive at least on-the-job training in fire safety from the supervisor trained in accordance with paragraph (e)(1) of this section.

(f) Each certificate holder shall obtain certification once a year from each airport tenant fueling agent that the training required by paragraph (e) of this section has been accomplished.

(g) Unless otherwise authorized by the Administrator, each certificate holder shall require each tenant fueling agent to take immediate corrective action whenever the certificate holder becomes aware of noncompliance with a standard required by paragraph (b) of this section. The certificate holder shall notify the appropriate FAA Regional Airports Division Manager immediately when noncompliance is discovered and corrective action cannot be accomplished within a reasonable period of time.

(h) A certificate holder need not require an air carrier operating under part 121 or part 135 of this chapter to comply with the standards required by this section.

(i) FAA Advisory Circulars in the 150 Series contain standards and procedures for the handling and storage of hazardous substances and materials.
§ 139.323 Traffic and wind direction indicators.

Each certificate holder shall provide the following on its airport:

(a) A wind cone that provides surface wind direction information visually to pilots. For each airport in a Class B airspace area, supplemental wind cones must be installed at each runway end or at least one point visible to the pilot while on final approach and prior to takeoff. If the airport is open for air carrier operations during hours of darkness, the wind direction indicators must be lighted.

(b) For airports serving any air carrier operation when there is no control tower operating, a segmented circle around one wind cone and a landing strip and traffic pattern indicator for each runway with a right-hand traffic pattern.

§ 139.325 Airport emergency plan.

(a) Each certificate holder shall develop and maintain an airport emergency plan designed to minimize the possibility and extent of personal injury and property damage on the airport in an emergency. The plan must include—

1. Procedures for prompt response to all of the emergencies listed in paragraph (b) of this section, including a communications network; and

2. Sufficient detail to provide adequate guidance to each person who must implement it.

(b) The plan required by this section must contain instructions for response to—

1. Aircraft incidents and accidents;
2. Bomb incidents, including designated parking areas for the aircraft involved;
3. Structural fires;
4. Natural disaster;
5. Radiological incidents;

6. Sabotage, hijack incidents, and other unlawful interference with operations;
7. Failure of power for movement area lighting; and

8. Water rescue situations.

(c) The plan required by this section must address or include—

1. To the extent practicable, provisions for medical services including transportation and medical assistance for the maximum number of persons that can be carried on the largest air carrier aircraft that the airport reasonably can be expected to serve;

2. The name, location, telephone number, and emergency capability of each hospital and other medical facility, and the business address and telephone number of medical personnel on the airport or in the communities it serves, agreeing to provide medical assistance or transportation;

3. The name, location, and telephone number of each rescue squad, ambulance service, military installation, and government agency on the airport or in the communities it serves, that agrees to provide medical assistance or transportation;

4. An inventory of surface vehicles and aircraft that the facilities, agencies, and personnel included in the plan under paragraphs (c)(2) and (c)(3) of this section will provide to transport injured and deceased persons to locations on the airport and in the communities it serves;

5. Each hangar or other building on the airport or in the communities it serves that will be used to accommodate uninjured, injured, and deceased persons;

6. Crowd control, specifying the name and location of each safety or security agency that agrees to provide assistance for the control of crowds in the event of an emergency on the airport; and

7. The removal of disabled aircraft including to the extent practical the name, location and telephone numbers of agencies with aircraft removal responsibilities or capabilities.

(d) The plan required by this section must provide for—

1. The marshalling, transportation, and care of ambulatory injured and uninjured accident survivors;
§ 139.327  
(2) The removal of disabled aircraft;  
(3) Emergency alarm systems; and  
(4) Coordination of airport and control tower functions relating to emergency actions.  
(e) The plan required by this section shall contain procedures for notifying the facilities, agencies, and personnel who have responsibilities under the plan of the location of an aircraft accident, the number of persons involved in that accident, or any other information necessary to carry out their responsibilities, as soon as that information is available.  
(f) The plan required by this section shall contain provisions, to the extent practicable, for the rescue of aircraft accident victims from significant bodies of water or marsh lands adjacent to the airport which are crossed by the approach and departure flight paths of air carriers. A body of water or marsh land is significant if the area exceeds one-quarter square mile and cannot be traversed by conventional land rescue vehicles. To the extent practicable, the plan shall provide for rescue vehicles with a combined capacity for handling the maximum number of persons that can be carried on board the largest air carrier aircraft that the airport reasonably can be expected to serve.  
(g) Each certificate holder shall—  
(1) Coordinate its plan with law enforcement agencies, rescue and fire fighting agencies, medical personnel and organizations, the principal tenants at the airport, and all other persons who have responsibilities under the plan;  
(2) To the extent practicable, provide for participation by all facilities, agencies, and personnel specified in paragraph (g)(1) of this section in the development of the plan;  
(3) Ensure that all airport personnel having duties and responsibilities under the plan are familiar with their assignments and are properly trained;  
(4) At least once every 12 months, review the plan with all of the parties with whom the plan is coordinated as specified in paragraph (g)(1) of this section, to ensure that all parties know their responsibilities and that all of the information in the plan is current; and  
(5) Hold a full-scale airport emergency plan exercise at least once every 3 years.  
(h) FAA Advisory Circulars in the 150 Series contain standards and procedures for the development of an airport emergency plan which are acceptable to the Administrator.  
§ 139.327  Self-inspection program.  
(a) Each certificate holder shall inspect the airport to assure compliance with this subpart—  
(1) Daily, except as otherwise required by the airport certification manual or airport certification specifications;  
(2) When required by any unusual condition such as construction activities or meteorological conditions that may affect safe air carrier operations; and  
(3) Immediately after an accident or incident.  
(b) Each certificate holder shall provide the following:  
(1) Equipment for use in conducting safety inspections of the airport;  
(2) Procedures, facilities, and equipment for reliable and rapid dissemination of information between airport personnel and its air carriers;  
(3) Procedures to ensure that qualified inspection personnel perform the inspections; and  
(4) A reporting system to ensure prompt correction of unsafe airport conditions noted during the inspection.  
(c) Each certificate holder shall prepare and keep for at least 6 months, and make available for inspection by the Administrator on request, a record of each inspection prescribed by this section, showing the conditions found and all corrective actions taken.  
(d) FAA Advisory Circulars in the 150 series contain standards and procedures for the conduct of airport self-inspections which are acceptable to the Administrator.  
§ 139.329  Ground vehicles.  
Each certificate holder shall—
(a) Limit access to movement areas and safety areas only to those ground vehicles necessary for airport operations;

(b) Establish and implement procedures for the safe and orderly access to, and operation on, the movement area and safety areas by ground vehicles, including provisions identifying the consequences of noncompliance with the procedures by an employee, tenant, or contractor;

(c) When an air traffic control tower is in operation, ensure that each ground vehicle operating on the movement area is controlled by one of the following:

(1) Two-way radio communications between each vehicle and the tower,

(2) An escort vehicle with two-way radio communications with the tower to accompany any vehicle without a radio, or

(3) Measures acceptable to the Administrator for controlling vehicles, such as signs, signals, or guards, when it is not operationally practical to have two-way radio communications with the vehicle or an escort vehicle;

(d) When an air traffic control tower is not in operation, provide adequate procedures to control ground vehicles on the movement area through prearranged signs or signals;

(e) Ensure that each employee, tenant, or contractor who operates a ground vehicle on any portion of the airport is familiar with the airport’s procedures for the operation of ground vehicles and the consequences of noncompliance; and

(f) On request by the Administrator, make available for inspection any record of accidents or incidents on the movement areas involving air carrier aircraft and/or ground vehicles.

[Doc. No. 24812, 52 FR 44282, Nov. 18, 1987, as amended by Amdt. 139-17, 55 FR 48214, Nov. 19, 1990]

§ 139.337 Wildlife hazard management.

(a) Each certificate holder shall provide for the conduct of an ecological study, acceptable to the Administrator, when any of the following events occurs on or near the airport:

(1) An air carrier aircraft experiences a multiple bird strike or engine ingestion.

(2) An air carrier aircraft experiences a damaging collision with wildlife other than birds.

(3) Wildlife of a size or in numbers capable of causing an event described in paragraph (a)(1) or (2) of this section is observed to have access to any airport flight pattern or movement area.

(b) The study required in paragraph (a) of this section shall contain at least the following:

(1) Analysis of the event which prompted the study.

(2) Identification of the species, numbers, locations, local movements, and lighting is not required if it is determined to be unnecessary by an FAA aeronautical study.

§ 139.333 Protection of navaids.

Each certificate holder shall—

(a) Prevent the construction of facilities on its airport that, as determined by the Administrator, would derogate the operation of an electronic or visual navaid and air traffic control facilities on the airport;

(b) Protect, or if the owner is other than the certificate holder, assist in protecting, all navaids on its airport against vandalism and theft; and

(c) Prevent, insofar as it is within the airport's authority, interruption of visual and electronic signals of navaids.

§ 139.335 Public protection.

(a) Each certificate holder shall provide—

(1) Safeguards acceptable to the Administrator to prevent inadvertent entry to the movement area by unauthorized persons or vehicles; and

(2) Reasonable protection of persons and property from aircraft blast.

(b) Fencing meeting the requirements of part 107 of this chapter in areas subject to that part is acceptable for meeting the requirements of paragraph (a)(1) of this section.
§ 139.339 Airport condition reporting.

(a) Each certificate holder shall provide for the collection and dissemination of airport condition information to air carriers.

(b) In complying with paragraph (a) of this section, the certificate holder shall utilize the NOTAM system and, as appropriate, other systems and procedures acceptable to the Administrator.

(c) In complying with paragraph (a) of this section, the certificate holder shall provide information on the following airport conditions which may affect the safe operations of air carriers:

(1) Construction or maintenance activity on movement areas, safety areas, or loading ramps and parking areas.

(2) Surface irregularities on movement areas or loading ramps and parking areas.

§ 139.339 Airport condition reporting.

(a) Each certificate holder shall provide for the collection and dissemination of airport condition information to air carriers.

(b) In complying with paragraph (a) of this section, the certificate holder shall utilize the NOTAM system and, as appropriate, other systems and procedures acceptable to the Administrator.

(c) In complying with paragraph (a) of this section, the certificate holder shall provide information on the following airport conditions which may affect the safe operations of air carriers:

(1) Construction or maintenance activity on movement areas, safety areas, or loading ramps and parking areas.

(2) Surface irregularities on movement areas or loading ramps and parking areas.

(d) When the Administrator determines that a wildlife hazard management plan is needed, the certificate holder shall formulate and implement a plan using the ecological study as a basis. The plan shall:

(1) Be submitted to, and approved by, the Administrator prior to implementation; and

(2) Provide measures to alleviate or eliminate wildlife hazards to air carrier operations.

(e) The plan shall include at least the following:

(1) The persons who have authority and responsibility for implementing the plan.

(2) Priorities for needed habitat modification and changes in land use identified in the ecological study, with target dates for completion.

(3) Requirements for and, where applicable, copies of local, state, and Federal wildlife control permits.

(4) Identification of resources to be provided by the certificate holder for implementation of the plan.

(5) Procedures to be followed during air carrier operations, including at least:

(i) Assignment of personnel responsibilities for implementing the procedures;

(ii) Conduct of physical inspections of the movement area and other areas critical to wildlife hazard management sufficiently in advance of air carrier operations to allow time for wildlife controls to be effective;

(iii) Wildlife control measures; and

(iv) Communication between the wildlife control personnel and any air traffic control tower in operation at the airport.

(f) Periodic evaluation and review of the wildlife hazard management plan for—

(i) Effectiveness in dealing with the wildlife hazard; and

(ii) Indications that the existence of the wildlife hazard, as previously described in the ecological study, should be reevaluated.

(g) A training program to provide airport personnel with the knowledge and skills needed to carry out the wildlife hazard management plan required by paragraph (d) of this section.

(h) FAA Advisory Circulars in the 150 series contain standards and procedures for wildlife hazard management at airports which are acceptable to the Administrator.
§ 139.341 Identifying, marking, and reporting construction and other unserviceable areas.

(a) Each certificate holder shall—

(i) Each construction area and unserviceable area which is on or adjacent to any movement area or any other area of the airport on which air carrier aircraft may be operated;

(ii) Each item of construction equipment and each construction roadway, which may affect the safe movement of aircraft on the airport; and

(iii) Any area adjacent to a navaid that, if traversed, could cause derogation of the signal or the failure of the navaid, and

(b) FAA Advisory Circulars in the 150 series contain standards and procedures for identifying and marking construction areas which are acceptable to the Administrator.

§ 139.343 Noncomplying conditions.

Unless otherwise authorized by the Administrator, whenever the requirements of subpart D of this part cannot be met to the extent that uncorrected unsafe conditions exist on the airport, the certificate holder shall limit air carrier operations to those portions of the airport not rendered unsafe by those conditions.
FINDING AIDS

A list of CFR titles, subtitles, chapters, subchapters and parts and an alphabetical list of agencies publishing in the CFR are included in the CFR Index and Finding Aids volume to the Code of Federal Regulations which is published separately and revised annually.

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Material Approved for Incorporation by Reference
(Revised as of January 1, 1999)

The Director of the Federal Register has approved under 5 U.S.C. 552(a) and 1 CFR Part 51 the incorporation by reference of the following publications. This list contains only those incorporations by reference effective as of the revision date of this volume. Incorporations by reference found within a regulation are effective upon the effective date of that regulation. For more information on incorporation by reference, see the preliminary pages of this volume.

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American Society for Testing and Materials
100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, Telephone (610) 832-9585, FAX (610) 832-9555
ASTM F792-82 Design and use of Ionizing Radiation Equipment for the Detection of Items Prohibited in Controlled Access Areas. 108.17; 129.26

Federal Aviation Administration, Department of Transportation
Document Inspection Facility, APA-220, 800 Independence Avenue, SW, Washington, DC 20591 (202) 267-3484
FAA Order 7400.9D, Airspace Designations and Reporting Points, dated August 17, 1995 and effective September 16, 1996 through September 15, 1997 (Copies may be inspected in Docket No. 27054 at the Federal Aviation Administration, Office of the Chief Counsel, AGC-10, Room 915G, 800 Independence Avenue, SW, Washington, DC 20591).
FAA Order 7400.9E, Airspace Designations and Reporting Points, dated September 10, 1997 and effective September 16, 1997 through September 15, 1998 (Copies may be inspected in Docket 29030 at the Federal Aviation Administration, Office of the Chief Counsel, AGC-200, Room 915G, 800 Independence Avenue, SW, Washington, DC 20591).
FAA Order 7400.9F, Airspace Designations and Reporting Points, dated September 10, 1998 and effective September 16, 1998 through September 15, 1999 (Copies may be inspected in Docket 29334 at the Federal Aviation Administration, Office of the Chief Counsel, AGC-200, Room 915G, 800 Independence Avenue, SW, Washington, DC 20591).

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Technical Standard Orders: Technical Standard Orders:
TSO-C10b, Aircraft Altimeter, Pressure, Activated, Sensitive Type (Sept. 1, 1959) TSO-C10b, Aircraft Altimeter, Pressure, Activated, Sensitive Type (Sept. 1, 1959) 91.36; 127.103
TSO-C88, Automatic Pressure Altitude Digitizer Equipment (Feb. 10, 1967) TSO-C91, Emergency Locator Transmitters (Oct. 21, 1971) 91.36; 127.103 91.52; 121.339; 121.353; 135.167
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International Civil Aviation Organization

International Civil Aviation Organization
Attention: Distribution Officer, P.O. Box 400, Succursale: Place de l’Aviation Internationale, 1000 Sherbrooke St. West, Montreal, Quebec, Canada, H3A 2R2

P & W Aircraft Co.
400 E. Main St., East Hartford, CT 06108
Engineering Change No. 19770 ............................................................... Part 91, SFAR 27, Sec. 14(b)
SB 2417 ...................................................................................................... Part 91, SFAR 27, Sec. 14(b)
SB 2531 ...................................................................................................... Part 91, SFAR 27, Sec. 14(b)

Radio Technical Commission for Aeronautics (RTCA)
2000 K St., NW., Washington, D.C. 20006
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At 54 FR 34291, Aug. 18, 1989, part 91 was amended, effective Aug. 18, 1990. The following tables show the relationship between the former sections and the new sections in the part.

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Redesignation Table 2

At 56 FR 65651, Dec. 17, 1991, part 71, subpart M was added by redesignating sections from old part 75.

The following tables show the relationship between the former sections and the new sections in the subpart.

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To identify where existing regulations for part 71 are relocated in the rule to be effective September 16, 1993, or if the regulations will be relocated in FAA Order 7400.9, the following cross reference lists are provided:

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List of CFR Sections Affected

All changes in this volume of the Code of Federal Regulations which were made by documents published in the Federal Register since January 1, 1986, are enumerated in the following list. Entries indicate the nature of the changes effected. Page numbers refer to Federal Register pages. The user should consult the entries for chapters and parts as well as sections for revisions.


1986

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61.67 Amended; eff. 1-6-87 ..... 40703
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61.113 Revised; eff. 1-6-87 ..... 40704
61.125 (b) (3) and (4) amended; (b)(5) added; eff. 1-6-87 ..... 40704
61.127 (b)(7) amended; (b) (5) and (b) revised; (b)(9) added; eff. 1-6-87 ..... 40704
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Technical correction: 35234

Introductory text and (a) through (d) redesignated as (a) introductory text and (1) through (4); new (b) added. | 9636 |

Technical correction: 9636

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Corrected: 924, 1884, 1997, 2891, 3618, 4529, 6001, 7699, 8255, 8346, 8347, 9912, 9940, 11118, 11991, 12401, 14603, 14604, 14607, 14608, 14609, 15396, 20447, 20684, 30380, 38316, 35130, 35309, 36162, 37066, 37943, 38467, 40643, 40951, 41323, 41599, 42665, 45109, 46511, 46881, 47091, 47155, 51283, 52591, 53747, 53802, 54350, 55329, 55532, 55942, 56125, 56551, 57588, 58296, 58628, 59702, 59706, 62396, 63139, 63140, 63977, 64179, 65976, 66244, 66425, 66755, 68676, 69190, 70324, 71217, 71219

Regulation at 63 FR 4163 delayed to 3-26-98. 7698
Regulation at 63 FR 39236 eff. date delayed. 43623
Added; eff 9-16-98 through 9-15-99. 50140
Eff. 1-28-99...54351, 55329—55332, 55531, 55532, 55649, 55650, 55786, 55787, 55800, 55829, 55830, 56060—56062, 64411, 64615, 64860—64867, 66980, 67172, 67224, 68391
Eff. 3-25-99...63141, 64181, 64182, 66681, 66983, 68174, 70326, 70328, 70329, 70331, 72154—72156
Eff. 5-20-99...70327, 70332
71.5 Amended; eff. 9-16-98 through 9-15-99. 50140
71.31 Amended; eff. 9-16-98 through 9-15-99. 50140