§ 145.223 FAA inspections.

(a) A certificated repair station must allow the FAA to inspect that repair station at any time to determine compliance with this chapter.

(b) A certificated repair station may not contract for the performance of a maintenance function on an article with a noncertificated person unless it provides in its contract with the noncertificated person that the FAA may make an inspection and observe the performance of the noncertificated person’s work on the article.

(c) A certificated repair station may not return to service any article on which a maintenance function was performed by a noncertificated person if the noncertificated person does not permit the FAA to make the inspection described in paragraph (b) of this section.

PART 147—AVIATION MAINTENANCE TECHNICIAN SCHOOLS

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APPENDIX A TO PART 147—CURRICULUM REQUIREMENTS

APPENDIX B TO PART 147—GENERAL CURRICULUM SUBJECTS

APPENDIX C TO PART 147—AIRFRAME CURRICULUM SUBJECTS

APPENDIX D TO PART 147—POWERPLANT CURRICULUM SUBJECTS

Federal Aviation Administration, DOT

SOURCE: Docket No. 1157, 27 FR 6669 July 13, 1962, unless otherwise noted.

Subpart A—General

§ 147.1 Applicability.

This part prescribes the requirements for issuing aviation maintenance technician school certificates and associated ratings and the general operating rules for the holders of those certificates and ratings.

§ 147.3 Certificate required.

No person may operate as a certified aviation maintenance technician school without, or in violation of, an aviation maintenance technician school certificate issued under this part.

§ 147.5 Application and issue.

(a) An application for a certificate and rating, or for an additional rating, under this part is made on a form and in a manner prescribed by the Administrator, and submitted with—

(1) A description of the proposed curriculum;

(2) A list of the facilities and materials to be used;

(3) A list of its instructors, including the kind of certificate and ratings held and the certificate numbers; and

(4) A statement of the maximum number of students it expects to teach at any one time.

(b) An applicant who meets the requirements of this part is entitled to an aviation maintenance technician school certificate and associated ratings prescribing such operations specifications and limitations as are necessary in the interests of safety.

§ 147.7 Duration of certificates.

(a) An aviation maintenance technician school certificate or rating is effective until it is surrendered, suspended, or revoked.

(b) The holder of a certificate that is surrendered, suspended, or revoked, shall return it to the Administrator.

Subpart B—Certification Requirements

§ 147.11 Ratings.

The following ratings are issued under this part:

(a) Airframe.

(b) Powerplant.

(c) Airframe and powerplant.

§ 147.13 Facilities, equipment, and material requirements.

An applicant for an aviation maintenance technician school certificate and rating, or for an additional rating, must have at least the facilities, equipment, and materials specified in §§147.15 to 147.19 that are appropriate to the rating he seeks.

§ 147.15 Space requirements.

An applicant for an aviation maintenance technician school certificate and rating, or for an additional rating, must have such of the following properly heated, lighted, and ventilated facilities as are appropriate to the rating he seeks and as the Administrator determines are appropriate for the maximum number of students expected to be taught at any time:

(a) An enclosed classroom suitable for teaching theory classes.

(b) Suitable facilities, either central or located in training areas, arranged to assure proper separation from the working space, for parts, tools, materials, and similar articles.

(c) Suitable area for application of finishing materials, including paint spraying.

(d) Suitable areas equipped with washtank and degreasing equipment with air pressure or other adequate cleaning equipment.

(e) Suitable facilities for running engines.

(f) Suitable area with adequate equipment, including benches, tables, and test equipment, to disassemble, service, and inspect.
§ 147.17 Instructional equipment requirements.

(a) An applicant for a mechanic school certificate and rating, or for an additional rating, must have such of the following instructional equipment as is appropriate to the rating he seeks:

(1) Various kinds of airframe structures, airframe systems and components, powerplants, and powerplant systems and components (including propellers), of a quantity and type suitable to complete the practical projects required by its approved curriculums.

(2) At least one aircraft of a type currently certificated by FAA for private or commercial operation, with powerplant, propeller, instruments, navigation and communications equipment, landing lights, and other equipment and accessories on which a maintenance technician might be required to work and with which the technician should be familiar.

(b) The equipment required by paragraph (a) of this section need not be in an airworthy condition. However, if it was damaged, it must have been repaired enough for complete assembly.

(c) Airframes, powerplants, propellers, appliances, and components thereof, on which instruction is to be given, and from which practical working experience is to be gained, must be so diversified as to show the different methods of construction, assembly, inspection, and operation when installed in an aircraft for use. There must be enough units so that not more than eight students will work on any one unit at a time.

(d) If the aircraft used for instructional purposes does not have retractable landing gear and wing flaps, the school must provide training aids, or operational mock-ups of them.

§ 147.19 Materials, special tools, and shop equipment requirements.

An applicant for an aviation maintenance technician school certificate and rating, or for an additional rating, must have an adequate supply of material, special tools, and such of the shop equipment as are appropriate to the approved curriculum of the school and are used in constructing and maintaining aircraft, to assure that each student will be properly instructed. The special tools and shop equipment must be in satisfactory working condition for the purpose for which they are to be used.

§ 147.21 General curriculum requirements.

(a) An applicant for an aviation maintenance technician school certificate and rating, or for an additional rating, must have an approved curriculum that is designed to qualify his students to perform the duties of a mechanic for a particular rating or ratings.

(b) The curriculum must offer at least the following number of hours of instruction for the rating shown, and the instruction unit hour shall not be less than 50 minutes in length—

(1) Airframe—1,150 hours (400 general plus 750 airframe).

(2) Powerplant—1,150 hours (400 general plus 750 powerplant).

(3) Combined airframe and powerplant—1,900 hours (400 general plus 750 airframe and 750 powerplant).

(c) The curriculum must cover the subjects and items prescribed in appendices B, C, or D, as applicable. Each item must be taught to at least the indicated level of proficiency, as defined in appendix A.

(d) The curriculum must show—
Subpart C—Operating Rules

§ 147.31 Attendance and enrollment, tests, and credit for prior instruction or experience.

(a) A certificated aviation maintenance technician school may not require any student to attend classes of instruction more than 8 hours in any day or more than 6 days or 40 hours in any 7-day period.

(b) Each school shall give an appropriate test to each student who completes a unit of instruction as shown in that school's approved curriculum.

(c) A school may not graduate a student unless he has completed all of the appropriate curriculum requirements. However, the school may credit a student with instruction or previous experience as follows:

(1) A school may credit a student with instruction satisfactorily completed at—
   (i) An accredited university, college, junior college;
   (ii) An accredited vocational, technical, trade or high school;
   (iii) A military technical school;
   (iv) A certificated aviation maintenance technician school.

(2) A school may determine the amount of credit to be allowed—
   (i) By an entrance test equal to one given to the students who complete a comparable required curriculum subject at the crediting school;
   (ii) By an evaluation of an authenticated transcript from the student's former school; or
   (iii) In the case of an applicant from a military school, only on the basis of an entrance test.

(3) A school may credit a student with previous aviation maintenance experience comparable to required curriculum subjects. It must determine the amount of credit to be allowed by documents verifying that experience, and by giving the student a test equal to the one given to students who complete the comparable required curriculum subject at the school.

(4) A school may credit a student seeking an additional rating with previous satisfactory completion of the general portion of an AMTS curriculum.

§ 147.23 Instructor requirements.

An applicant for an aviation maintenance technician school certificate and rating, or for an additional rating, must provide the number of instructors holding appropriate mechanic certificates and ratings that the Administrator determines necessary to provide adequate instruction and supervision of the students, including at least one such instructor for each 25 students in each shop class. However, the applicant may provide specialized instructors, who are not certificated mechanics, to teach mathematics, physics, basic electronics, basic hydraulics, drawing, and similar subjects. The applicant is required to maintain a list of the names and qualifications of specialized instructors, and upon request, provide a copy of the list to the FAA.

[Amtd. 147-5, 57 FR 28959, June 29, 1992]
§ 147.33 Records.

(a) Each certificated aviation maintenance technician school shall keep a current record of each student enrolled, showing—

(1) His attendance, tests, and grades received on the subjects required by this part;
(2) The instruction credited to him under §147.31(c), if any; and
(3) The authenticated transcript of his grades from that school.

It shall retain the record for at least two years after the end of the student’s enrollment, and shall make each record available for inspection by the Administrator during that period.

(b) Each school shall keep a current progress chart or individual progress record for each of its students, showing the practical projects or laboratory work completed, or to be completed, by the student in each subject.

[Doc. No. 1157, 27 FR 6669, July 13, 1962]

§ 147.35 Transcripts and graduation certificates.

(a) Upon request, each certificated aviation maintenance technician school shall provide a transcript of the student’s grades to each student who is graduated from that school or who leaves it before being graduated. An official of the school shall authenticate the transcript. The transcript must state the curriculum in which the student was enrolled, whether the student satisfactorily completed that curriculum, and the final grades the student received.

(b) Each school shall give a graduation certificate or certificate of completion to each student that it graduates. An official of the school shall authenticate the certificate. The certificate must show the date of graduation and the approved curriculum title.

§ 147.38a Quality of instruction.

Each certificated aviation maintenance technician school shall provide instruction of such quality that, of its graduates of a curriculum for each rating who apply for a mechanic certificate or additional rating within 60 days after they are graduated, the percentage of those passing the applicable FAA written tests on their first attempt during any period of 24 calendar months is at least the percentage figured as follows:

(a) For a school graduating fewer than 51 students during that period—the national passing norm minus the number 20.
(b) For a school graduating at least 51, but fewer than 201, students during that period—the national passing norm minus the number 15.
(c) For a school graduating more than 200 students during that period—the national passing norm minus the number 10.

As used in this section, “national passing norm” is the number representing the percentage of all graduates (of a curriculum for a particular rating) of all certificated aviation maintenance technician schools who apply for a mechanic certificate or additional rating within 60 days after they are graduated and pass the applicable FAA written tests on their first attempt during the period of 24 calendar months described in this section.


§ 147.39 Display of certificate.

Each holder of an aviation maintenance technician school certificate and ratings shall display them at a place in the school that is normally accessible to the public and is not obscured. The certificate must be available for inspection by the Administrator.

§ 147.41 Change of location.

The holder of an aviation maintenance technician school certificate may not make any change in the school’s location unless the change is approved in advance. If the holder desires to change the location he shall notify the Administrator, in writing, at least 30 days before the date the change is contemplated. If he changes its location without approval, the certificate is revoked.

§ 147.43 Inspection.

The Administrator may, at any time, inspect an aviation maintenance technician school to determine its compliance with this part. Such an inspection is normally made once each six months to determine if the school continues to meet the requirements under which it was originally certificated. After such an inspection is made, the school is notified, in writing, of any deficiencies found during the inspection. Other informal inspections may be made from time to time.

§ 147.45 Advertising.

(a) A certificated aviation maintenance technician school may not make any statement relating to itself that is false or is designed to mislead any person considering enrollment therein.
(b) Whenever an aviation maintenance technician school indicates in advertising that it is a certificated school, it shall clearly distinguish between its approved courses and those that are not approved.

APPENDIX A TO PART 147—CURRICULUM REQUIREMENTS

This appendix defines terms used in appendices B, C, and D of this part, and describes the levels of proficiency at which items under each subject in each curriculum must be taught, as outlined in appendices B, C, and D.

(a) Definitions. As used in appendices B, C, and D:
(1) Inspect means to examine by sight and touch.
(2) Check means to verify proper operation.
(3) Troubleshoot means to analyze and identify malfunctions.
(4) Service means to perform functions that assure continued operation.
(5) Repair means to correct a defective condition. Repair of an airframe or powerplant system includes component replacement and adjustment, but not component repair.
(6) Overhaul means to disassemble, inspect, repair as necessary, and check.
(b) Teaching levels. (i) Level 1 requires:
(1) Knowledge of general principles, but no practical application.
(ii) No development of manipulative skill.
(iii) Instruction by lecture, demonstration, and discussion.
Teaching level

E. MATERIALS AND PROCESSES
(1) 14. Identify and select appropriate nondestructive testing methods.
(2) 15. Perform dye penetrant, eddy current, ultrasonic, and magnetic particle inspections.
(3) 16. Perform basic heat-treating processes.
(3) 17. Identify and select aircraft hardware and materials.
(3) 18. Inspect and check welds.
(3) 19. Perform precision measurements.

F. GROUND OPERATION AND SERVICING
(2) 20. Start, ground operate, move, service, and secure aircraft and identify typical ground operation hazards.
(2) 21. Identify and select fuels.

G. CLEANING AND CORROSION CONTROL
(3) 22. Identify and select cleaning materials.
(3) 23. Inspect, identify, remove, and treat aircraft corrosion and perform aircraft cleaning.

H. MATHEMATICS
(3) 24. Extract roots and raise numbers to a given power.
(3) 25. Determine areas and volumes of various geometrical shapes.
(3) 26. Solve ratio, proportion, and percentage problems.
(3) 27. Perform algebraic operations involving addition, subtraction, multiplication, and division of positive and negative numbers.

I. MAINTENANCE FORMS AND RECORDS
(3) 28. Write descriptions of work performed including aircraft discrepancies and corrective actions using typical aircraft maintenance records.
(3) 29. Complete required maintenance forms, records, and inspection reports.

J. BASIC PHYSICS
(2) 30. Use and understand the principles of simple machines, sound, fluid, and heat dynamics; basic aerodynamics; aircraft structures; and theory of flight.

K. MAINTENANCE PUBLICATIONS
(3) 31. Demonstrate ability to read, comprehend, and apply information contained in FAA and manufacturers’ aircraft maintenance specifications, data sheets, manuals, publications, and related Federal Aviation Regulations, Airworthiness Directives, and Advisory material.
(3) 32. Read technical data.

L. MECHANIC PRIVILEGES AND LIMITATIONS
(3) 33. Exercise mechanic privileges within the limitations prescribed by part 65 of this chapter.

APPENDIX C TO PART 147—AIRFRAME CURRICULUM SUBJECTS

This appendix lists the subjects required in at least 750 hours of each airframe curriculum, in addition to at least 400 hours in general curriculum subjects.
The number in parentheses before each item listed under each subject heading indicates the level of proficiency at which that item must be taught.

I. AIRFRAME STRUCTURES

Teaching level

A. WOOD STRUCTURES
(1) 1. Service and repair wood structures.
(1) 2. Identify wood defects.
(1) 3. Inspect wood structures.
B. AIRCRAFT COVERING
(1) 4. Select and apply fabric and fiberglass covering materials.
(1) 5. Inspect, test, and repair fabric and fiberglass.
C. AIRCRAFT FINISHES
(1) 6. Apply trim, letters, and touchup paint.
(2) 7. Identify and select aircraft finishing materials.
(2) 8. Apply finishing materials.
(2) 9. Inspect finishes and identify defects.
D. SHEET METAL AND NON-METALLIC STRUCTURES
(2) 10. Select, install, and remove special fasteners for metallic, bonded, and composite structures.
(2) 11. Inspect bonded structures.
(2) 12. Inspect, test, and repair fiberglass, plastics, honeycomb, composite, and laminated primary and secondary structures.
(2) 13. Inspect, check, service, and repair windows, doors, and interior furnishings.
(3) 15. Install conventional rivets.
(3) 16. Form, lay out, and bend sheet metal.
E. WELDING
(1) 17. Weld magnesium and titanium.
(1) 18. Solder stainless steel.
(1) 19. Fabricate tubular structures.
(2) 20. Solder, braze, gas-weld, and arc-weld steel.
(1) 21. Weld aluminum and stainless steel.
F. ASSEMBLY AND RIGGING
(1) 22. Rig rotary-wing aircraft.
(2) 23. Rig fixed-wing aircraft.
(2) 24. Check alignment of structures.
(3) 25. Assemble aircraft components, including flight control surfaces.
(3) 27. Jack aircraft.
G. AIRCRAFT INSPECTION
(3) 28. Perform airframe conformity and airworthiness inspections.

II. AIRFRAME SYSTEMS AND COMPONENTS

Teaching level

A. AIRCRAFT LANDING GEAR SYSTEMS
(3) 29. Inspect, check, service, and repair landing gear, retraction systems, shock struts, brakes, wheels, tires, and steering systems.
B. HYDRAULIC AND PNEUMATIC POWER SYSTEMS
(2) 30. Repair hydraulic and pneumatic power systems components.
(3) 31. Identify and select hydraulic fluids.
II. AIRFRAME SYSTEMS AND COMPONENTS—Continued

Teaching level

I. ICE AND RAIN CONTROL SYSTEMS
(2) 53. Inspect, check, troubleshoot, service, and repair airframe ice and rain control systems.

J. FIRE PROTECTION SYSTEMS
(1) 54. Inspect, check, and service smoke and carbon monoxide detection systems.
(3) 55. Inspect, check, service, troubleshoot, and repair aircraft fire detection and extinguishing systems.


APPENDIX D TO PART 147—POWERPLANT CURRICULUM SUBJECTS

This appendix lists the subjects required in at least 750 hours of each powerplant curriculum, in addition to at least 400 hours in general curriculum subjects.

The number in parentheses before each item listed under each subject heading indicates the level of proficiency at which that item must be taught.

I. POWERPLANT THEORY AND MAINTENANCE

Teaching level

A. RECIPROCATING ENGINES
(1) 1. Inspect and repair a radial engine.
(2) 2. Overhaul reciprocating engine.
(3) 3. Inspect, check, service, and repair reciprocating engines and engine installations.
(4) 4. Inspect, troubleshoot, and remove reciprocating engines.

B. TURBINE ENGINES
(2) 5. Overhaul turbine engine.
(3) 6. Inspect, check, service, and repair turbine engines and turbine engine installations.
(3) 7. Install, troubleshoot, and remove turbine engines.

C. ENGINE INSPECTION
(3) 8. Perform powerplant conformity and air worthiness inspections.

II. POWERPLANT SYSTEMS AND COMPONENTS

Teaching level

A. ENGINE INSTRUMENT SYSTEMS
(2) 9. Troubleshoot, service, and repair electrical and mechanical fluid rate-of-flow indicating systems.
(3) 10. Inspect, check, service, and repair electrical and mechanical engine temperature, pressure, and r.p.m. indicating systems.

B. ENGINE FIRE PROTECTION SYSTEMS
(3) 11. Inspect, check, service, troubleshoot, and repair engine fire detection and extinguishing systems.

C. ENGINE ELECTRICAL SYSTEMS
(2) 12. Repair engine electrical system components.
(3) 13. Install, check, and service engine electrical wiring, controls, switches, indicators, and protective devices.

D. LUBRICATION SYSTEMS
(2) 14. Identify and select lubricants.
(3) 15. Repair engine lubrication system components.
(3) 16. Inspect, check, service, troubleshoot, and repair engine lubrication systems.

E. IGNITION AND STARTING SYSTEMS
(2) 17. Overhaul magneto and ignition harness.
(2) 18. Inspect, service, troubleshoot, and repair reciprocating and turbine engine ignition systems and components.
(3) 19.a. Inspect, service, and troubleshoot turbine engine electrical starting systems.
(1) 19.b. Inspect, service, and troubleshoot turbine engine pneumatic starting systems.

F. FUEL METERING SYSTEMS
(1) 20. Troubleshoot and adjust turbine engine fuel metering systems and electronic engine fuel controls.
(2) 21. Overhaul carburetor.
(2) 22. Repair engine fuel metering system components.
(3) 23. Inspect, check, service, troubleshoot, and repair reciprocating and turbine engine fuel metering systems.

G. ENGINE FUEL SYSTEMS
(2) 24. Repair engine fuel system components.
(2) 25. Inspect, check, service, troubleshoot, and repair engine fuel systems.

H. INDUCTION AND ENGINE AIRFLOW SYSTEMS
(2) 26. Inspect, check, troubleshoot, service, and repair engine ice and rain control systems.
(1) 27. Inspect, check, service, troubleshoot and repair heat exchangers, superchargers, and turbine engine airflow and temperature control systems.
(3) 28. Inspect, check, service, and repair carburetor air intake and induction manifolds.

I. ENGINE COOLING SYSTEMS
(2) 29. Repair engine cooling system components.
(3) 30. Inspect, check, troubleshoot, service, and repair engine cooling systems.

J. ENGINE EXHAUST AND REVERSER SYSTEMS
(2) 31. Repair engine exhaust system components.
(3) 32.a. Inspect, check, troubleshoot, service, and repair engine exhaust systems.
(1) 32.b. Troubleshoot and repair engine thrust reverser systems and related components.

K. PROPELLERS
(1) 33. Inspect, check, service, and repair propeller synchronizing and ice control systems.
(2) 34. Identify and select propeller lubricants.
(3) 35. Balance propellers.
(2) 36. Repair propeller control system components.
(3) 37. Inspect, check, service, and repair fixed-pitch, constant-speed, and feathering propellers, and propeller governing systems.
(3) 38. Install, troubleshoot, and remove propellers.
(3) 39. Repair aluminum alloy propeller blades.
II. POWERPLANT SYSTEMS AND COMPONENTS—Continued

L. UNDUCTED FANS

(1) 40. Inspect and troubleshoot unducted fan systems and components.

M. AUXILIARY POWER UNITS

(1) 41. Inspect, check, service, and troubleshoot turbine-driven auxiliary power units.