

§ 121.419

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§ 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) Enough 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 DA/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—
 - (i) A general description;
 - (ii) Performance characteristics;
 - (iii) Engines and propellers;
 - (iv) Major components;
 - (v) Major airplane systems (i.e., flight controls, electrical, hydraulic); other systems as appropriate; principles of normal, abnormal, and emergency operations; appropriate procedures and limitations;
 - (vi) 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;
 - (vii) Operating limitations;

- (viii) Fuel consumption and cruise control;
- (ix) Flight planning;
- (x) Each normal and emergency procedure; and
- (xi) The approved Airplane Flight Manual.

(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.

[Doc. No. 9509, 35 FR 90, Jan. 3, 1970, as amended by Amdt. 121–199, 53 FR 37696, Sept. 27, 1988; Amdt. 121–250, 60 FR 65949, Dec. 20, 1995; Amdt. 121–333, 72 FR 31682, June 7, 2007]

§ 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.
- (3) Airplane performance.
- (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 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.

[Doc No. 9509, 35 FR 90, Jan. 3, 1970, as amended by Amdt. 121-250, 60 FR 65949, Dec. 20, 1995]

§ 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) General subjects—

(i) Use of communications systems including the characteristics of those systems and the appropriate normal and emergency procedures;

(ii) Meteorology, including various types of meteorological information and forecasts, interpretation of weather data (including forecasting of en route and terminal temperatures and other weather conditions), frontal systems, wind conditions, and use of actual and prognostic weather charts for various altitudes;

(iii) The NOTAM system;

(iv) Navigational aids and publications;

(v) Joint dispatcher-pilot responsibilities;

(vi) Characteristics of appropriate airports;

(vii) Prevailing weather phenomena and the available sources of weather information;

(viii) Air traffic control and instrument approach procedures; and

(ix) Approved dispatcher resource management (DRM) initial training.

(2) For each airplane—

(i) A general description of the airplane emphasizing operating and performance characteristics, navigation equipment, instrument approach and communication equipment, emergency equipment and procedures, and other subjects having a bearing on dispatcher duties and responsibilities;

(ii) Flight operation procedures including procedures specified in § 121.419(a)(2)(vi);

(iii) Weight and balance computations;

(iv) Basic airplane performance dispatch requirements and procedures;

(v) Flight planning including track selection, flight time analysis, and fuel requirements; and

(vi) Emergency procedures.

(3) Emergency procedures must be emphasized, including the alerting of proper governmental, company, and private agencies during emergencies to