§ 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.

EFFECTIVE DATE NOTE: By Amdt. 121–366, 78 FR 67839, Nov. 12, 2013, §121.418 was amended by revising the section heading; redesignating paragraphs (a) introductory text, (a)(1), (a)(2), (a)(3) and the undesignated paragraph, as paragraphs (a)(1), (a)(1)(i), (a)(1)(ii), (a)(1)(iii), and (a)(2) respectively; adding a subject heading to paragraph (a); and adding paragraphs (b) and (c), effective Mar. 12, 2014. For the convenience of the user, the revised and added text is set forth as follows:

§ 121.418 Differences training and related aircraft differences training.

(a) Differences training.

* * * * *

(b) Related aircraft differences training. (1) In order to seek approval of related aircraft differences training for flightcrew members, a certificate holder must submit a request for related aircraft designation to the Administrator, and obtain approval of that request.

(2) If the Administrator determines under paragraph (b)(1) of this section that a certificate holder is operating related aircraft, the certificate holder may submit to the Administrator a request for approval of a training program that includes related aircraft differences training.

(3) A request for approval of a training program that includes related aircraft differences training must include at least the following:

(i) Each appropriate subject required for the ground training for the related aircraft.

(ii) Each appropriate maneuver or procedure required for the flight training and crewmember emergency training for the related aircraft.

(iii) The number of programmed hours of ground training, flight training and crewmember emergency training necessary based on review of the related aircraft and the duty position.

(c) Approved related aircraft differences training. Approved related aircraft differences training for flightcrew members may be included in initial, transition, upgrade and recurrent training for the base aircraft. If the certificate holder’s approved training program includes related aircraft differences training in accordance with paragraph (b) of this section, the training required by §§121.419, 121.424, 121.425, and 121.427, as applicable to flightcrew members, may be modified for the related aircraft.

§ 121.419 Pilots and flight engineers: Initial, transition, and upgrade ground training.

(a) Except as provided in paragraph (b) of this section, 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:

(i) General subjects—

(a) Dispatch or flight release procedures;

(b) Principles and methods for determining weight and balance, and runway limitations for takeoff and landing;

(c) Enough meteorology to insure a practical knowledge of weather phenomena, including the principles of frontal systems, icing, fog, thunderstorms, and high altitude weather situations;

(d) Air traffic control systems, procedures, and phraseology;
Federal Aviation Administration, DOT

§ 121.419

(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 competence.

(2) For each airplane type—
(i) A general description;
(ii) Performance characteristics;
(iii) Engines and propellers;
(iv) Major components;
(v) Major airplane systems (e.g., 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

(b) Initial ground training for pilots who have completed the airline transport pilot certification training program in §61.156 must include instruction in 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.

(d) Initial ground training for pilots who have completed the airline transport pilot certification training program in §61.156 must consist of at least the following programmed hours of instruction in the required subjects specified in paragraph (b) of this section and in §121.415(a) unless reduced under §121.405:

(1) Group I airplanes—
(i) Reciprocating powered, 54 hours; and
(ii) Turbopropeller powered, 70 hours.
(2) Group II airplanes, 110 hours.


EFFECTIVE DATE NOTE: By Amdt. 121–366, 78 FR 67839, Nov. 12, 2013, §121.419 was amended by revising paragraph (a)(1)(ix); in paragraph (a)(2)(x), removing “and” following the semicolon; redesignating paragraph (a)(2)(xi) as (a)(2)(xiii); and adding new paragraph (a)(2)(xii) and(e), effective Mar. 12, 2014. For the convenience of the user, the revised and added text is set forth as follows:

§121.419 Pilots and flight engineers: Initial, transition, and upgrade ground training.

(a) * * *
(1) * * *
(1x) Other instructions as necessary to ensure pilot and flight engineer competence.
(2) * * *
(x) For pilots, stall prevention and recovery in clean configuration, takeoff and maneuvering configuration, and landing configuration.
(xii) For pilots, upset prevention and recovery; and
§ 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 paragraphs (c) and (d) of this section:

(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 crew members, 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) General subjects—
   (i) Use of communications systems including the characteristics of those