

(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;

(13) Crew resource management to include crew communication and coordination; and

(14) After July 31, 2014, for airplane category multiengine class rating or airplane type rating, the content of the airline transport pilot certification training program in §61.156.

(d) An applicant who successfully completes the knowledge test for an airline transport pilot certificate prior

to August 1, 2014, must successfully complete the practical test within 24 months from the month in which the knowledge test was successfully completed. An applicant who passes the knowledge test prior to August 1, 2014, but fails to successfully complete the airplane category with a multiengine class rating practical test within 24 months must complete the airline transport pilot certification training program specified in §61.156 and retake the knowledge test prior to applying for the airplane category with a multiengine class rating practical test.

[Doc. No. 25910, 62 FR 16298, Apr. 4, 1997, as amended by Amdt. 61-130, 78 FR 42374, July 15, 2013; Docket FAA-2010-0100, Amdt. 61-130C, 81 FR 2, Jan. 4, 2016]

**§61.156 Training requirements: Airplane category—multiengine class rating or airplane type rating concurrently with airline transport pilot certificate.**

After July 31, 2014, a person who applies for the knowledge test for an airline transport pilot certificate with an airplane category multiengine class rating must present a graduation certificate from an authorized training provider under part 121, 135, 141, or 142 of this chapter certifying the applicant has completed the following training in a course approved by the Administrator.

(a) *Academic training.* The applicant for the knowledge test must receive at least 30 hours of classroom instruction that includes the following:

(1) At least 8 hours of instruction on aerodynamics including high altitude operations;

(2) At least 2 hours of instruction on meteorology, including adverse weather phenomena and weather detection systems; and

(3) At least 14 hours of instruction on air carrier operations, including the following areas:

(i) Physiology;

(ii) Communications;

(iii) Checklist philosophy;

(iv) Operational control;

(v) Minimum equipment list/configuration deviation list;

(vi) Ground operations;

(vii) Turbine engines;

(viii) Transport category aircraft performance;