

CHAPTER 3. FLIGHT ENGINEER CERTIFICATE AND CLASS RATINGS

SECTION 1. APPLICATION PHASE

221. APPLICABILITY. This chapter provides direction, guidance, and procedures for the conduct of flight engineer (FE) certifications, and the addition of class ratings to FE certificates. Inspectors and examiners should refer to the direction and guidance in chapter 1, which is general information and applies to FE certification. The material in chapter 1 is not repeated in this chapter.

223. ELIGIBILITY FOR THE FLIGHT ENGINEER WRITTEN (KNOWLEDGE) TEST. Test examiners administer aeronautical knowledge tests in written form or by computer. Since these tests can be administered by both means, they will be referred to as knowledge tests. Applicants who possess an unrestricted commercial pilot certificate and instrument rating issued by the Federal Aviation Administration (FAA) or an International Civil Aviation Organization (ICAO) member nation may take a knowledge examination without further demonstration of eligibility. Other applicants may not take the FE knowledge test without an inspector having first established their eligibility for the certificate. Applicants must meet all of the eligibility requirements except for age and flight training before being authorized to take an FE knowledge test or being issued an FAA Form 8060-7, "Airman's Authorization for Written Test." Inspectors should use the "Flight Engineer-Knowledge Test Authorization Job Aid" to complete this task (see figure 5.3.1.1.). This job aid is available on the district office Job Aid Disk. The requirements are specified in an abbreviated form on the job aid. A discussion of the eligibility requirements follows:

A. Each applicant for an initial FE certificate must pass the basic knowledge test and a class rating knowledge test. The following three class ratings are on the FE certificate: reciprocating, turbopropeller, and turbojet. The applicant may also take the combined basic and turbojet class rating tests.

B. An applicant for an additional class rating to be added to an FE certificate only needs to take the appropriate class rating knowledge test.

C. Federal Aviation Regulations (FAR) § 63.35(e) permits the principal operations inspector (POI) to authorize FAR Part 121 operators to administer knowledge tests for additional class ratings. Only flight crewmembers employed by the operator and enrolled in the operator's approved FAR Part 121 FE training curriculum, however, may be tested under this provision. In this case, the knowledge test is administered as part of the training program, and an authorization from an FAA inspector is not required for an applicant to take the test.

FYI: The provision of FAR § 63.35(e) does not apply to training programs approved solely under FAR Part 63, Appendix C, which have not also been approved under FAR Part 121.

D. Applicants must be able to read, write, and understand the English language. If there is doubt as to an applicant's ability to read, the inspector shall have the applicant read aloud a short paragraph from an appropriate source, such as an aircraft operating manual. If the inspector doubts the applicant's ability to write in English, the inspector shall read a short statement and have the applicant write it in English. If, on the basis of these tests, the inspector believes the applicant is unable to read, write, and understand the English language, the inspector shall not issue a knowledge test authorization. Instead, the inspector shall refer the matter to the inspector's immediate supervisor. The supervisor shall make a final determination of whether the applicant meets the English language requirement.

E. Applicants must meet one of the practical experience requirements of FAR § 63.37(b), subparagraphs 1 through 7. The practical experience requirements specified by FAR § 63.37(b) that must be accomplished before taking the knowledge test are as follows:

(1) FAR § 63.37(b)(1). The applicant must have accumulated 3 years of diversified practical experience in aircraft and engine maintenance. At least 1 year of this experience must have been on multien-

gine aircraft of 800 horsepower or greater, or the turbine engine equivalent.

(2) FAR § 63.37(b)(2). The applicant must have graduated from a 2-year aircraft and engine maintenance course, of which at least 6 months was devoted to the maintenance of aircraft of 800 horsepower, or greater, or the turbine engine equivalent.

(3) FAR § 63.37(b)(3). The applicant must hold a degree in aeronautical, electrical, or mechanical engineering and 6 months of practical experience in the maintenance of aircraft, 800 horsepower or greater, or the turbine equivalent of the class sought.

(4) FAR § 63.37(b)(4). The applicant must hold an unrestricted commercial pilot certificate and an instrument rating issued by an ICAO member nation.

(5) FAR § 63.37(b)(5). The applicant must have accumulated 200 hours of flight time as pilot-in-command (PIC) or second-in-command (SIC) performing the duties of PIC in a transport category aircraft or a military aircraft of equivalent weight and power, having at least two engines.

(6) FAR § 63.37(b)(6). The applicant must have accumulated 100 hours of flight time as an FE in an aircraft requiring an FE or an aircraft having at least three engines, which has at least 800 horsepower or the equivalent in turbine-powered engines.

(7) FAR § 63.37(b)(7). Within the previous 90 days, the applicant must have completed the ground portion of an approved FAR Part 63, Appendix C, FE training course for the class rating for which the application has been made.

F. When an inspector has verified that the applicant meets the requirements, the applicant is entitled to take the knowledge test. If the applicant plans to take the knowledge test at a different location or at a later date, the inspector shall complete the FAA Form 8060-7. The inspector shall give the applicant the completed FAA Form 8060-7 with instructions to present it to the person conducting the test. The expiration date on the form will be 6 calendar months from the date the form is completed. If appropriate, the inspector should remind the applicant that proof of age will be required for issuance of the certificate.

225. ELIGIBILITY FOR THE ORAL TEST.

Before beginning the oral test, the inspector or examiner should obtain and use the "Flight Engineer Oral Test Job Aid" (see figure 5.3.2.1.). This job aid specifies the eligibility requirements in abbreviated form. Inspectors and examiners conducting oral tests may accept an applicant's Aeronautical Center (AC) Form 8080-2, "Airman Written Test Report," with a pass-

ing score on the basic or class rating tests as proof that the applicant has met one of the general experience requirements. A "Flight Engineer- Knowledge Test Authorization Job Aid" (figure 5.3.1.1.) signed by an FAA inspector may be accepted as proof of the specific method (FAR 63.37(b)) by which an applicant has qualified.

A. The applicant must present a current medical certificate of second class or higher.

B. The applicant must complete sections 1 through 6 of the FAA Form 8400-3, "Application for an Airman Certificate and/or Rating," and present it to the inspector or examiner (see figure 5.3.1.2.). An instruction sheet for the completion of this form can be obtained from the district office Job Aid Disk.

C. An applicant who has failed a test segment must provide a copy of the FAA Form 8060-5, "Notice of Disapproval of Application." An applicant who is unable to produce this notice of disapproval must repeat the entire test segment.

D. An applicant for an additional class rating must submit a valid AC Form 8080-2 for the appropriate additional class rating. An applicant may also submit proof of having satisfactorily passed a knowledge test given as part of an approved FAR Part 121 FE training curriculum for the class rating sought.

E. An applicant for an original FE certificate must submit a valid AC Form 8080-2 showing satisfactory results of the basic FE test and the appropriate class rating test. For an original issuance of an FE certificate with a turbojet rating, the applicant may present a report showing a passing grade on the combined test. Inspectors and examiners shall not accept expired knowledge test reports unless the applicant provides written evidence of continued eligibility (see paragraph 227). When satisfactory evidence is presented, the inspector or examiner shall enter the following statement on AC Form 8080-2: "The period of validity of this form has been extended in accordance with the provisions of FAR § 63.35(d)." The inspector or examiner shall sign and date the statement.

F. Applicants qualifying under the provisions of FAR 63.37(b), subparagraphs (1) through (4), must supply acceptable documentary evidence of completing 5 hours of flight training at the FE station in the airplane type in which the flight test is to be taken. Training in a flight simulator (SIM) or flight training device (FTD) may not be substituted for flight training in the airplane for applicants qualifying under these subparagraphs. The airman conducting the training must hold an FE certificate with appropriate class ratings and be qualified in the airplane.

NOTE: Inspectors and examiners should not confuse the provisions of FAR § 63.37(b)(7) or the Air Transport Association of America (ATA) exemption with this requirement.

G. An applicant qualifying under the provisions of FAR § 63.37(b)(7) must supply training records or a written statement showing completion of the ground training phase of the approved training program.

227. REQUIREMENTS TO EXTEND THE VALIDITY DATE OF AN AIRMAN KNOWLEDGE TEST. An applicant must meet one of two sets of requirements to be eligible for an extension of the validity date of the knowledge test.

A. *For Air Carrier Employees.* The following criteria apply to flight crewmembers and mechanics employed by a FAR Part 121 or FAR Part 135 operator. Employment by a FAR Part 135 on-demand operator does not qualify an applicant for an extension.

(1) FAR § 63.35 states that the applicant must have been employed as a flight crewmember or a mechanic by a FAR Part 121 operator or a FAR Part 135 commuter operator within the period ending 24 calendar months before the month of passing the knowledge test and must have become employed by a FAR Part 121 or FAR Part 135 commuter at the time of the flight test.

(2) Applicants who are flight crewmembers must have completed initial new-hire training, initial equipment training, or, if appropriate, transition training.

(3) Applicants who are flight crewmembers must be participating in a training program that includes a recurrent training curriculum in accordance with FAR Part 121 or FAR Part 135.

(4) Applicants who are mechanics must meet the currency requirements of FAR Part 65.

(5) Applicants must be currently employed by a FAR Part 121 operator or a FAR Part 135 commuter operator. However, applicants do not need to have been continuously employed by a qualified operator between the time they passed the knowledge test and the time they apply to take the oral and flight tests.

B. *For Military Applicants.* The following criteria apply to applicants who apply for extensions on the basis of participation in a training program of a scheduled military transport service.

(1) Applicants must have participated in an FE or maintenance training program at the time of passing the knowledge test or must have begun a military

training program within 24 calendar months after passing the knowledge test.

(2) Applicants must be currently participating in a military FE or maintenance training program.

229. ELIGIBILITY FOR THE FLIGHT TEST.

Before beginning the flight test, the inspector or examiner should obtain and use the "Flight Engineer Flight Test Job Aid" (see figure 5.3.2.2.). An applicant must present training records, logbooks, or a written statement from a company official that shows that FE flight training was accomplished.

A. *Graduates of Approved FAR Part 63, Appendix C, FE Training Curriculums.* Applicants who are graduates of these curriculums must have completed the flight training specified by the approved curriculum.

(1) All applicants meeting the experience requirement of FAR § 63.37(b)(7), except those holding commercial pilot certificates or higher with instrument ratings, must have completed a minimum of 5 hours of flight training at the FE station in the airplane type that will be used for the flight test.

(2) Applicants meeting the experience requirement of FAR § 63.37(b)(7) and who hold a commercial pilot certificate (or higher) with an instrument rating may complete the entire flight training requirement in a SIM. The training must be conducted with a full crew complement. The SIM does not need to have an operational visual system.

FYI: FAR Part 121 initial and transition FE training programs do not automatically qualify as FAR Part 63, Appendix C, training programs. Unless the FAR Part 121 operator has obtained approval for its training program under FAR Part 63, applicants must qualify under the provisions of FAR § 63.37(b)(1) through (6).

B. *Other Applicants.*

(1) An applicant who is qualifying for the certificate under the provisions of FAR § 63.37(b), subparagraphs (1) through (4), is required to have acquired a minimum of 5 hours of flight training in the type of airplane to be used in the flight test.

FYI: An applicant meeting the experience requirements of FAR § 63.37, subparagraphs (1) through (4), must have acquired 5 hours of flight training in an airplane, even though the normal procedures segment of the flight test is to be conducted in a SIM under the Air

Transport Association of America (ATA) exemption.

(2) An applicant who is qualifying for the certificate under the provisions of FAR § 63.37(b), subparagraphs (5) or (6), is not required to complete flight training before the flight test.

FYI: FAR § 121.432 does not allow training to be conducted during revenue service.

231. TIME LIMITS FOR THE TESTING PROCESS. The flight test must be completed within 60 days of the oral test. If the flight test is accomplished with a combination of SIM and airplane segments, the airplane segment must be completed within 30 days of the completion of the SIM segment. If the oral test and SIM tests have been completed and the airplane segment of the test is delayed, the oral may be repeated (out of sequence) to avoid exceeding the 60-day limit to complete all test requirements.

232. RETESTING APPLICANTS WITH PASSING SCORES. An applicant who holds an airman test report with a passing score may take another knowledge test for that same class rating 30 days after the last test was taken but not before. Eligibility to retake the test is established by presenting the test administrator with the last airman test report. The test administrator will retain these test results. The score of the last test taken is the official score.

233. ENDORSEMENT OF FLIGHT ENGINEER APPLICANTS RETESTING WITHIN 30 DAYS OF FAILURE.

A. FAR § 63.41 states that an applicant for an FE certificate who fails a knowledge or practical test for that certificate may apply for retesting after 30 days after the date the applicant failed that test; or after the applicant “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.” FAR 63.41 does not address who may endorse an FE applicant’s AC Form 8080-2 or FAA Form 8400-3 for the purpose of providing a statement attesting that the applicant has received instruction in the subjects failed, and is competent to pass the test. This paragraph provides guidance to help clarify the ambiguity concerning the endorser and the method of endorsement.

B. *Endorser Eligibility.* The following lists contain those persons, other than aviation safety inspec-

tors (ASI), eligible to provide the appropriate endorsement for an FE applicant to retake either the knowledge test or practical test within 30 days of failure.

(1) *Knowledge Test:*

- A certificated FE with an appropriate class rating
- A U.S. Armed Forces FE instructor or standardization/evaluation FE for that airplane class
- An instructor employed by a training facility approved under FAR § 63.43.

(2) *Practical Test:*

- A certificated FE with an appropriate type rating who is current and qualified in accordance with FAR § 91.529(b), 121.453(a) or 125.265(b)
- A U.S. Armed Forces FE instructor or standardization/evaluation FE who is current and qualified in the appropriate airplane type

C. *Verification of Endorser’s Eligibility.* Before retaking the knowledge or practical test, the FE applicant must present verification of the endorser’s eligibility. When the endorser is a U.S. Armed Forces FE instructor or standardization/evaluation FE for a specific airplane class or type, the endorser must provide the applicant (for either FAA Form 8400-3 or AC Form 8080-2) with copies of flight logs, military qualification forms, or a statement from the military supervisor, documenting the endorser’s eligibility. The applicant must present this documentation before retaking the knowledge test; however, this documentation does not have to be attached to the form. If the endorser is an instructor employed by a training facility approved under FAR § 63.43, that endorser must provide the applicant with a statement from the approved training facility. The statement must contain certification of the endorser’s position as an instructor at that training facility. The applicant must present this statement of the endorser’s position before retaking the practical test; however, the statement does not have to be attached to the form.

D. *Endorser Completion of Statement on the Airman Test Report and FAA Form 8400-3.* The applicant’s endorser must fill out either the applicant’s AC Form 8080-2 (for the knowledge test) or FAA Form 8400-3 (for the practical test) as follows:

(1) *Completion of Statement on Airman Test Report.*

(a) An FAA-certificated FE shall complete the statement on the test report by entering his or her

last name and first initial, Flight Engineer Certificate number, class rating, and signature; for example, "Brown, J., FE2069084, Reciprocating."

(b) A U.S. Armed Forces standardization/evaluation FE or FE instructor for the specific airplane class shall complete the form by signing and then listing the branch of service and type of designation in lieu of a certificate number; for example, "Brown, J., U.S.A.F., FE Instructor."

(c) Instructors employed by a training facility approved under FAR § 63.43 shall complete the form

by signing and then listing the approved training facility name and position title; for example, "Brown, J., UAL, FE Instructor."

(2) *Completion of FAA Form 8400-3.* A U.S. Armed Forces standardization/evaluation FE or FE instructor for the specific airplane type shall complete Block 7 by signing and then listing the branch of service and type of designation in lieu of a certificate number; for example, "John Brown, U.S.A.F., FE Instructor, C-141 (L-300)."

234.-238. RESERVED.

**FIGURE 5.3.1.1
FLIGHT ENGINEER
KNOWLEDGE TEST AUTHORIZATION JOB AID**

APPLICANT NAME: _____

INSPECTOR SIGNATURE: _____

DISTRICT OFFICE: _____

REQUIREMENTS TO TAKE KNOWLEDGE EXAMINATION

A. Read, write, and understand English

B. Age: 19 years

Note: A current medical certificate is not required.

EXPERIENCE REQUIREMENT. The applicant must provide written proof of meeting one of the subparagraphs of FAR § 63.37(b):

(Circle applicable number)

1. 3 years diversified maintenance experience, 1 year of which must be on multiengine aircraft of 800 HP
2. Graduate of 2-year maintenance course, 6 months of which must have been on multiengine aircraft of 800 HP or greater
3. A degree in aeronautical, electrical, or mechanical engineering and 6 months maintenance experience on multi-engine aircraft of 800 HP or greater
4. Holds a commercial pilot certificate and an instrument rating
5. Pilot-in-command experience: 200 hours PIC or SIC performing PIC duties in transport category airplanes or equivalent multiengine military airplanes
6. Engineer time: 100 hours in airplanes requiring an engineer or having three engines of at least 800 HP or the equivalent turbine power
7. Within the previous 90 days, completion of ground portion of approved FE training program.

ELIGIBILITY ESTABLISHED

Complete and issue FAA Form 8060-7, "Airman's Authorization for written Test."

Complete PTRS, Code 1576.

Give job aid to applicant if any number (1) through (6) is circled. Have applicant present the job aid to each inspector or examiner.

