VOLUME 5 AIRMAN CERTIFICATION

CHAPTER 3 AIRLINE TRANSPORT PILOT (ATP) CERTIFICATION UNDER TITLE 14 CFR PART 121, 135, OR 91 SUBPART K

Section 4 Conduct of Flight Tests in an Airplane for ATP Applicants Engaged in Operations Under Part 121, 135, or 91 Subpart K

Source Basis:

- **Section 61.4, Qualification and Approval of Flight Simulators and Flight Training Devices.**
- **Section 61.33, Tests: General Procedure.**
- **Section 61.39, Prerequisites for Practical Tests.**
- **Section 61.43, Practical Tests: General Procedures.**
- **Section 61.45, Practical Tests: Required Aircraft and Equipment.**
- **Section 61.64, Use of a Flight Simulator and Flight Training Device.**
- **Section 61.71, Graduates of an Approved Training Program Other Than Under This Part: Special Rules.**
- **Section 61.151, Applicability.**
- **Section 61.153, Eligibility Requirements: General.**
- **Section 61.157, Flight Proficiency.**
- **Section 61.165, Additional Aircraft Category and Class Ratings.**
- **Section 121.441, Proficiency Checks.**

5-881 AIRPLANE TRAINING BEFORE AIRPLANE FLIGHT TESTS. Before conducting a flight test segment in an airplane, the inspector or examiner must review the applicant's training records or a statement from a company official to ensure that the required training has been completed. When the flight test is conducted in two segments, training on certain events must be accomplished in the airplane before the airplane segment of the flight test can be conducted. When training has been conducted in a Level 7 or lower flight training device (FTD), there will be certain events that have not been approved for flight training in that particular device. In this case, training on those events must be conducted in the airplane. When training is conducted in a Level A or B full flight simulator (FFS), the category of training determines which events the applicant must be trained in, in an airplane, before the airplane segment of the flight test is conducted. Applicants trained in a Level C or D FFS are not required to receive training in the airplane (see Volume 5, Chapter 3, Section 3).

5-882 ISSUANCE OF AN AIRLINE TRANSPORT PILOT (ATP) CERTIFICATE OR TYPE RATING TO A SECOND IN COMMAND (SIC). Air carriers employing SICs without an ATP Certificate or aircraft type rating may choose to provide the training and checking required for the issuance of the certificate or rating. Carriers wishing to conduct certification utilizing a recurrent training program may be required to submit a revision to their SIC recurrent training curriculum or continuing qualification curriculum for Advanced Qualification Programs (AQP) to accommodate the additional training and evaluation requirements. The revised curriculum(s) must include training on any tasks and maneuvers required for ATP certification for which the SIC has not previously received flight training, in new-hire, initial, transition, or

recurrent training, or indoctrination (AQP), qualification (AQP), or continuing qualification (AQP) training for that carrier. Air carriers may continue to use their approved recurrent/continuing qualification (AQP) training curriculum for SICs who already hold an ATP Certificate with airplane category and multiengine class rating or type rating.

5-883 SEAT AND DUTY POSITION CONSIDERATIONS. This paragraph outlines some considerations for training and qualification programs which lead to ATP certification and/or a type rating. The Principal Operations Inspector (POI) and Aircrew Program Manager (APM) are best suited to evaluate the certificate holder's environment, procedures, and operational requirements to ensure the approved flightcrew member training and qualification program functionally supports the proposed operation. Although the guidance below provides some flexibility, training efficiencies should not supersede the objective of providing the most applicable training for the duty position to which the flightcrew member will be assigned.

A. Duty Positions. Certificate holders can effectively train pilot crewmembers for a duty position without designating a specific time period for training in a particular seat position. The qualification and checking module in a traditional program or evaluation strategy in an AQP, in addition to the operating experience module, if applicable, will validate the training received.

B. Duty Position Considerations. Duty positions are defined by the knowledge and skills of specific job tasks. The pilot in command (PIC) and SIC duty position knowledge and skills may be demonstrated from either pilot seat. Training and qualification programs which include a qualification curriculum segment with a checking/evaluation module for the PIC duty position when the flightcrew member will be assigned the SIC duty position must also include a training module which trains to proficiency all the SIC duty position knowledge and skills not covered in the PIC curriculum, if any.

C. Seat-Dependent Maneuvers and Procedures. Additionally, certificate holders should be cognizant of unique aircraft configuration differences that may require seat-dependent maneuvers and procedures. Seat-dependent maneuvers and procedures are defined as maneuvers and procedures using controls that are accessible or operable from only one flightcrew member seat. Seat-dependent maneuvers and procedures may be identified by the airplane manufacturer, the certificate holder, or the Federal Aviation Administration (FAA). Inspectors and examiners should review the Flight Standardization Board (FSB) Report for the airplane type for any seat-dependent maneuvers and procedures identified during the FSB evaluation. Consequently, any certificate holder allowing pilot crewmembers to occupy either pilot seat must include a training module which trains to proficiency the identified seat-dependent maneuvers and procedures, if any. This module must also ensure the flightcrew member has sufficient time to develop the psychomotor acuity required to fly the aircraft from a seating position differing from the seat used in the checking/evaluation module.

5-884 PLANNING THE FLIGHT. Planning is essential to the efficient and effective conduct of an airplane flight test. When an instructor or a check pilot acts as the safety pilot (and PIC), the inspector must coordinate closely with the instructor or check pilot in the planning. Ideally, inspectors and examiners should plan to conduct the flight test at a location that provides for visual meteorological flight conditions, an uncongested air traffic environment, a non-noise-sensitive environment, and an airport with a number of Navigational Aids (NAVAID)

and runways that provide flexibility. Since these ideal conditions are usually not available, the flight test may have to be conducted under less-than-ideal circumstances. Inspectors and examiners are encouraged to coordinate with the air traffic control (ATC) facility serving the location selected for the flight test to ensure that the test can be conducted in an acceptable manner. If the flight test cannot be conducted under acceptable conditions, the inspector or examiner must reschedule the flight test at a time and location where more satisfactory conditions prevail.

5-885 EVENTS REQUIRED IN AN AIRPLANE FLIGHT TEST. There are three methods of conducting a flight test in an airplane: (1) a flight test conducted entirely in an airplane; (2) a two-segment flight test conducted in an FFS and an airplane; and (3) a two-segment flight test conducted in an FTD and an airplane.

A. Title 14 of the Code of Federal Regulations (14 CFR) Part 121. In accordance with 14 CFR part 61, § 61.157(f)(1)(i), a satisfactory part 121, § 121.441 proficiency check meets the flight test requirements for an ATP Certificate and type rating. Inspectors and examiners should see Volume 3, Chapter 19, Section 7, Paragraph 3-1279, Part 121 Pilot Proficiency Check, and Figure 3-80, Part 121 Pilot Proficiency Check, for direction and policy regarding a § 121.441 proficiency check, including the required events and allowable use of flight simulation training devices (FSTD).

B. Title 14 CFR Parts 135 and 91K. Inspectors and examiners are encouraged to use the job aids to plan the flight test. For example, if the certificate holder's aircraft operating manual does not allow circling approaches in less than visual flight rules (VFR) conditions, testing of the event is not required, and it may be marked off the job aid. Events not required for the class of airplane may also be marked off. For example, accuracy landings are not required in a multiengine airplane.

1) Entire Flight Test in an Airplane. When a certificate holder does not have access to an FFS or FTD, the flight test must be completed entirely in the airplane. Inspectors and examiners should use the checklist titled Part 135 or 91K ATP/Type Rating Single-Segment Flight Test Job Aid—FFS or Airplane (see Volume 5, Chapter 3, Section 3, Figure 5-113).

2) Airplane Segment of a Two-Segment Airplane and FFS Flight Test. Inspectors and examiners should use the checklist titled Part 135 or 91K ATP/Type Rating Two-Segment Flight Test Job Aid—FFS and Airplane (see Volume 5, Chapter 3, Section 3, Figure 5-114). The events are separated into FFS and airplane segments, according to which specific events must be evaluated in the airplane segment. This job aid should be used for all flight tests in which the first segment is conducted in a Level A or higher FFS.

3) Airplane Segment of a Two-Segment Airplane and FTD Flight Test. Inspectors and examiners should use the checklist titled Part 135 or 91K ATP/Type Rating Two-Segment Flight Test Job Aid—FTD and Airplane (see Volume 5, Chapter 3, Section 3, Figure 5-115). The events are separated into an FTD segment and an airplane segment. Any event in which the applicant is not tested in the FTD segment must be tested in the airplane. The inspector or examiner conducting the airplane segment of the flight test must determine the events in which the applicant was evaluated during the FTD segment. The job aid may be used to

transmit this information from the inspector or examiner conducting the FTD segment of the flight test to the inspector or examiner who conducts the airplane segment of the flight test. The job aid must be signed and dated by the inspector or examiner conducting the FTD segment of the test, and the events in which the applicant was not tested must be clearly marked.

5-886 PREFLIGHT BRIEFING. The inspector or examiner conducting the flight test should ensure that everyone participating in the flight test is adequately briefed.

A. Supporting Crewmembers. The individual conducting the flight test must brief the safety pilot and, if applicable, the Flight Engineer (FE) on the conduct of the flight. If a certificate holder's instructor or check pilot is the safety pilot, that individual must conduct the flight in accordance with the instructions given by the inspector. The safety pilot and, if applicable, the FE must provide normal crew coordination support, but must not be permitted to lead the applicant when the applicant is expected to take the initiative.

B. Applicant. Before beginning the flight test, the inspector or examiner must brief the applicant on the use of other crewmembers and aircraft equipment, including the autopilot. The applicant must perform the functions of the PIC. The applicant must be briefed to immediately relinquish control and assume SIC duties if a hazardous condition arises and the safety pilot takes control of the aircraft.

C. Safety Pilot. The safety pilot must conduct a briefing on procedures to be used. The safety pilot briefing must cover, but is not limited to, the following:

- Transfer of aircraft control,
- Touch-and-go procedures,
- Procedures for simulating an inoperative engine,
- Simulated abnormal and emergency procedures,
- Response to an actual emergency, and
- Use of vision restriction devices.

5-887 CREW QUALIFICATIONS. The crew, with the exception of the applicant, must be qualified and current. The safety pilot must have completed the certificate holder's approved instructor or check pilot training and qualification and be familiar with the procedures for blocking the controls against incorrect applicant responses.

5-888 VISION RESTRICTION DEVICES. For instrument flight maneuvers, a vision restriction device acceptable to the inspector must be provided by the certificate holder or applicant. The device must not limit the vision of the safety pilot or other crewmembers, including the inspector. An inspector or examiner may not accept pillows, charts taped to windows, or other vision restriction devices that could jeopardize flight safety.

5-889 CONDUCT OF THE FLIGHT TEST IN AN AIRPLANE. Standard procedures, as specified in the certificate holder's aircraft operating manual, must be followed in the performance of all maneuvers. All emergencies and abnormalities conducted in an airplane must be simulated. An engine may be shut down and restarted in flight, provided the minimum altitude specified in the certificate holder's aircraft operating manual is observed. Before a

problem is introduced, the safety pilot must announce to the crew that a simulated problem is being introduced.

A. Introducing Problems. Procedures for introducing simulated, abnormal, and emergency problems must be in accordance with the certificate holder's aircraft operating manual, training manual, and other appropriate certificate holder directives. Safety pilots may introduce problems by sounding a warning horn, a fire bell, or by illuminating a warning light, provided the warning can be produced with a test switch that does not activate a system. Circuit breakers will not be opened to introduce problems. When the emergency or abnormal checklist required by a simulated problem specifies that a circuit breaker be opened, the circuit breaker will only be opened if the action cannot be simulated, and the effect of opening the circuit breaker is to enhance safety. For example, it is permissible to disable the ground proximity warning, according to the checklist, on a no-flap approach because the warning would continue to sound throughout the approach. It would not be permissible, however, to pull a circuit breaker on an electrically driven hydraulic pump that could be turned off by a switch. Deactivated systems must be fully reactivated immediately after the need for deactivation has been met. For example, in some airplanes a hydraulic system must be depressurized before an alternate landing gear extension can be performed. In this case, the hydraulic system should be repressurized immediately after the landing gear is extended. It is appropriate to use streamers or other devices as reminders that systems have been deactivated.

B. Realistic Problems. On flight tests conducted entirely in an airplane, inspectors and examiners must not limit the problems given to applicants to the required engine failures only. Problems should be realistic. The selection of such problems in an airplane is more limited than in an FFS, due to both safety and operational limitations. However, certain problems can be practically and safely conducted in an airplane. Examples include a simulated instrument failure that leads to the selection of alternate switching, a simulated hydraulic failure requiring a diversion to a takeoff alternate, or a simulated electrical fault requiring alternate landing gear or flap extension.

C. Actual Malfunction. Should an actual malfunction occur while an emergency is being simulated, the flight test must be immediately suspended, all systems restored to normal, and the problem resolved before the flight test is restarted. If a throttle has been retarded when an actual malfunction occurs, the safety pilot must immediately restore engine thrust to normal on all engines.

5-890 SAFETY. Safety is the specific responsibility of the safety pilot. The safety pilot must ensure that a testing event is not allowed to deteriorate to the point where flying safety is compromised. The safety pilot must take early and positive measures to prevent hazardous situations from arising. If the safety pilot takes control of the airplane due to no fault of the applicant, or before it was clear whether the applicant could or could not have recovered successfully, the event must be repeated. However, if the safety pilot believes there is a need to instruct, give directions, or take control of the airplane due to the lack of proficiency of an applicant, the event and the entire flight test must be considered unsatisfactory.

5-891 MODIFICATION OF EVENTS. Inspectors and examiners are authorized by § 61.157 to modify events when the performance characteristics of an airplane used for a flight test make

an event unsafe or unpractical. For example, the airplane certification regulations for light twin-engine airplanes may not require that the airplane be capable of climbing with a failed engine. In such airplanes, an engine-out missed approach may not be possible, or may be unsafe. Inspectors and examiners may also modify events to accomplish a flight test when weather, ATC, or traffic requirements make accomplishing a specific event in the conventional manner impossible. For example, if traffic flow prevents flying the published missed approach procedure, the inspector or examiner may (in visual conditions and with ATC concurrence) construct an alternate procedure. The authority to modify events does not extend to modifying aircraft operating procedures.

5-892 DEBRIEFING. The inspector or examiner shall inform the applicant of the results of the flight test and conduct a debriefing (see Volume 5, Chapter 1, Section 3).

RESERVED. Paragraphs 5-893 through 5-905.