

VOLUME 3 GENERAL TECHNICAL ADMINISTRATION**CHAPTER 19 TRAINING PROGRAMS AND AIRMAN QUALIFICATIONS****Section 6 Safety Assurance System: Flight Training Curriculum Segments**

3-1226 GENERAL. This section specifies the objectives of flight training. Both the structure and content of flight training curriculum segments are discussed. Also clarified are the differences between training objectives and qualification objectives. Flight training consists of certain required maneuvers and procedures which are referred to as “training events.” The training events, which must be included in flight training curriculum segments to satisfy the requirements of Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135, are specified in the maneuvers and procedures tables (see Tables 3-62 through 3-68). This section is related to Safety Assurance System (SAS) Subsystem 2.1, Training & Qualification.

3-1227 FLIGHT TRAINING OBJECTIVES. Flight training, as used in this section, means the conduct of training events in an aircraft or a flight simulation training device (FSTD) in accordance with an approved training curriculum. Flight training (except for wind shear training) may be conducted entirely in an aircraft. Flight training may also be conducted using a combination of an aircraft and an FSTD. In certain cases, flight training may be conducted entirely in a full flight simulator (FFS). In all cases, the primary objective of flight training is to provide an opportunity for flightcrew members to acquire the skills and knowledge necessary to perform to a desired standard. This opportunity provides for demonstration, instruction, and practice of the maneuvers and procedures (training events) pertinent to a particular aircraft and flightcrew member duty position. Successful completion of flight training is validated by appropriate testing and checking.

3-1228 QUALIFICATION OBJECTIVES. The objective of the qualification curriculum segment is to determine whether enough learning has occurred by comparing an individual’s performance in practical situations to established standards. A person meeting the qualification objectives satisfactorily completes the curriculum. A person failing to meet these objectives must be returned to training status. After additional training, that person must retake and satisfactorily complete at least the previously unsatisfactory portions of the qualification curriculum segment.

3-1229 FLIGHT TRAINING MODULES OR EVENT OUTLINES.

A. Curriculum Segment. A flight training curriculum segment may be outlined in a modular format or may be outlined as a series of events in which training must be accomplished. This curriculum segment must include as many training modules or events as necessary to provide appropriate training. Each training module or event outline should provide at least the following information:

- A descriptive title of the training module;
- A list of the training events that must be accomplished during flight training;
- Any specific conditions applicable to a particular training event, such as the weather minimums to be used; and
- Provisions for briefing before and after each training period.

B. Training Outline. The operator may submit an outline containing training modules representing blocks of training events or an outline listing all the elements and events to be accomplished during the flight training. Other forms of presenting the flight training curriculum segment may be acceptable. Regardless of the format used, inspectors should evaluate a proposed flight training curriculum by comparing it with the maneuvers and procedures tables in this section. During actual training, the order and rate of training event presentation may vary. An instructor may vary the events in a published curriculum segment, during any particular period, when a student's progress indicates it is necessary. However, a required event must not be omitted from the curriculum segment. A principal operations inspector (POI) may need to review the operator's flight training courseware, such as lesson plans or instructor guides, to assure that a plan exists in which all events will be appropriately accomplished. To further support that a plan exists, a POI may need to review the forms that will be used to record flight training. It is unnecessary for the POI to approve courseware or training record forms.

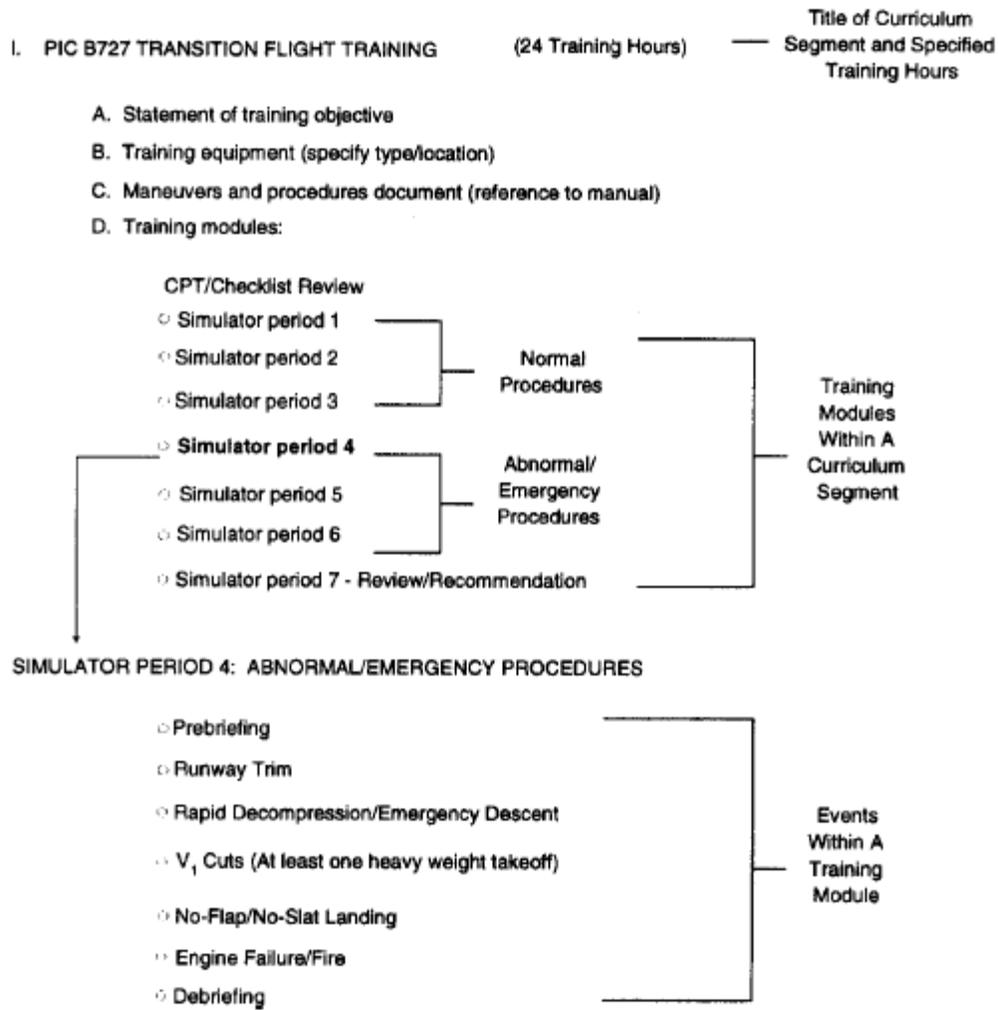
C. Aircraft Flight Manual (AFM). It is unnecessary to include detailed descriptions of how specific maneuvers or procedures will be accomplished in a flight training module outline or training event outline. However, detailed descriptions must be included in a Federal Aviation Administration (FAA)-approved AFM, the operator's aircraft operating manual, or a separate maneuvers and procedures document. Detailed descriptions or pictorial displays are required for certain normal, abnormal, and emergency maneuvers, procedures, and functions which are performed in flight training. POIs may require operators to provide extremely detailed training outlines in any of the following situations:

- When directed by the Air Transportation Division (AFS-200);
- When a new technology or procedure is addressed in the training module (examples include fly-by-wire aircraft control and helicopter instrument flight rules (IFR) flight slower than minimum speed (V_{MINI})); and
- When an operator has had approval of a curriculum segment withdrawn because of deficiencies, the POI may require any redeveloped flight curriculum segments to include highly detailed training module or training event outlines. (The level of detail should provide sufficient information for the POI to determine that previously identified deficiencies are corrected.)

D. Regulatory Compliance. To ensure regulatory compliance, the training module or training event outlines must contain at least the training events listed in the appropriate maneuvers and procedures tables in this section. The interrelationship of training modules and/or training events in a curriculum segment should provide for an orderly and practical progression of training. For example, taxiing may be listed as a training event in the first module of a flight training curriculum segment but does not have to be listed in subsequent training modules, even though training on the taxiing maneuver will occur throughout flight training. Training event modules should be developed so that training events are presented in a logical sequence. For example, missed approach training should be conducted in conjunction with approach training.

E. Interrelationship Example. The following example illustrates the interrelationship of a curriculum segment and training modules when a modular format is used:

Figure 3-78. Interrelationship of a Curriculum Segment and Training Modules—Modular Format



3-1230 TRAINING HOURS. Flight training curriculum segments must specify the training hours. The operator’s proposed number of training hours must realistically allow enough time for demonstration, instruction, and practice of the training events listed in the entire curriculum segment. A POI will not approve a proposed flight training curriculum segment unless the specified training hours realistically allow enough time to accomplish the required training events.

A. Programmed Hours—Part 121. Part 121, §§ 121.424 and 121.425 specify programmed hours of flight training for pilots and Flight Engineers (FE) enrolled in the initial new-hire and initial equipment categories of training. Table 3-58, Title 14 CFR Part 121 Regulatory Programmed Hours by Category of Training, lists the part 121 programmed hours.

1) In accordance with § 121.405(d), a POI may approve a reduction in the 14 CFR programmed hours requirements for initial new-hire and initial equipment categories of training.

When approving a reduction, a POI must consider the training aids, devices, methods, and procedures listed in the certificate holder's curriculum that increase the quality and effectiveness of the teaching-learning process.

2) Under § 121.418(c), a POI is authorized to approve a modification to the 14 CFR programmed hour requirements for initial new-hire and initial equipment categories of training for designated related aircraft. When approving a modification, the POI must determine that the training hours for the designated related aircraft are realistic based on the training methods and level of differences specified in the Flight Standardization Board (FSB) report. Unless reduced in accordance with § 121.405(d), the 14 CFR programmed hour requirements for initial new-hire and initial equipment categories of training apply to the base aircraft. (See Volume 3, Chapter 19, Section 12, for additional information regarding related aircraft designation and related aircraft differences training).

Table 3-58. Title 14 CFR Part 121 Regulatory Programmed Hours by Category of Training

		Initial New-Hire			Initial Equipment		
		PIC	SIC	FE	PIC	SIC	FE
14 CFR Part 121 Airplane Groups	Group I (Reciprocating)	10	6	6	10	6	6
	Group I (Turboprop)	15	7	7	15	7	7
	Group II (Turbojet)	20	10	10	20	10	10

B. Training Hours. Section 121.427(d)(1)(ii)(A) and (d)(2)(i) stipulates that programmed hours are not specified for pilot or FE recurrent flight training (RFT). However, if the flight training is conducted in an approved FFS, § 121.409(b)(1) requires at least 4 hours of training at the pilot controls for pilot-in-command (PIC) and second-in-command (SIC) training. Four hours of training are required regardless of whether the training is conducted on the events listed in part 121 appendix F or the training is conducted under an approved Line-Oriented Flight Training (LOFT) program.

C. Curriculum Segment Outlines. Part 121 does not specify programmed hours for the other categories of training. Part 135 does not specify programmed hours for any of the categories of training. The number of training hours must be specified, however, on all flight training curriculum segment outlines. Because of the various situations that can be encountered, it is difficult to provide guidance on acceptable training hours for flight training curriculum segments. POIs must thoroughly study an operator's proposals. Based on experience with the operator, past experiences with other operators, as well as their own training experiences, POIs must use reasonable judgment when determining whether the training can be adequately accomplished within the training hours specified by the curriculum segment.

D. Pilot Concurrent Training. When flight training is conducted in an FSTD, it is acceptable and preferable for the flight training curriculum segment to be developed so that two pilots can be trained during a single flight training session. This includes the training of a PIC and SIC, two PICs, or two SICs at the same time. During this type of training, one pilot (pilot A)

manipulates the controls of the aircraft while the other pilot (pilot B) performs the duties of the pilot monitoring (PM) the aircraft. During the same training session, the pilots reverse roles. Pilot B manipulates the controls, and pilot A performs the duties of the PM. The duties of the PM are typically included in the operator's aircraft operating manuals and/or in the maneuvers and procedures document. These duties include normal, abnormal, and emergency duties (that are performed by the PM) and the crew participation activities (Crew Resource Management (CRM) concepts) used by the operator. Both pilots are receiving essential "crew concept" training throughout the training session. Therefore, the total training hours accomplished during the training session can be credited to each of the participating pilots. For example, if a PIC and an SIC participated in a 4-hour FFS session, both pilots would receive 4 hours of training credit. This method of crediting training hours is valid only when both student pilots manipulate the controls for approximately equal amounts of time. This method of crediting training hours is not valid when the instructor is providing instruction and is also occupying one of the pilot seats of the FSTD or aircraft.

E. LOFT Training Session. Both recurrent and qualification LOFT training sessions should be based on at least 4 hours of total crewmember training activity. When the guidance contained in the current edition of Advisory Circular (AC) 120-35, Line Operational Simulations: Line-Oriented Flight Training, Special Purpose Operational Training, Line Operational Evaluation, is followed, all crewmembers who participate in a LOFT training session are credited with 4 hours of training time, as follows:

1) Two Trainees. Appropriate crew composition is central to the LOFT training concept. Acceptable scheduling practices and crew substitution allowances differ in recurrent LOFT and qualification LOFT. Refer to AC 120-35 for specific differences. When the crew consists of two PIC trainees or two SIC trainees, both pilots should receive full credit (4 hours) provided the following conditions are met:

- The LOFT session conforms to the minimum 4-hour format described in AC 120-35,
- At least 2½ hours are spent in the LOFT scenario, and
- The pilots swap seats at approximately the midpoint in the LOFT flight segment.

2) One Trainee. When only one trainee participates in qualification LOFT, that trainee should receive full credit (4 hours) provided the following conditions are met:

- The LOFT session conforms to the minimum 4-hour format described in AC 120-35, and
- At least 2½ hours are spent in the LOFT scenario (including spot).

NOTE: A 2-hour qualification LOFT session for one pilot does not meet the training requirements of part 121 appendix H. A qualification LOFT program consists of at least a 4-hour course of training for each flightcrew.

F. National Norms.

1) Table 3-60, Flight Training Hours (National Norms) Two Pilots—FSTD, and Table 3-61, Flight Training Hours (National Norms) One Pilot—FSTD or When All Training is Conducted in an Aircraft, specify established national norms for flight training curriculum segments. These norms are based on the assumption that there is reasonable training support, such as proficient instructors and well-organized flight instructor guides. The national norms in Table 3-60 are for flight training when most or all of the training is being conducted in an FSTD and when two pilots are being trained at the pilot controls during the same training session (see subparagraph 3-1230D). The national norms in Table 3-61 are for flight training when only one pilot is being trained in an FSTD, or when flight training is conducted entirely in an aircraft.

2) National norms have not been established for related aircraft differences flight training curriculum segments. The training hours required for designated related aircraft will vary based on the training methods and level of differences specified in the FSB report. (See Volume 3, Chapter 19, Section 12, for additional information regarding related aircraft designation and related aircraft differences training.)

G. Adequacy of Training Hours. When determining the adequacy of flight training hours, a POI should use these national norms as a point from which other factors shall be weighed. There may be many reasons why the training hours need to be greater than the national norm. The operator may need to specify more hours because of the complexity of the aircraft or types of operation. The POI may need to require more hours because of inadequate training support. Conversely, training hours fewer than the national norm may be fully acceptable due to the use of highly sophisticated modern training methods, effective systems integration in aircraft ground training, less complex aircraft, or the conduct of a less complex type of operation. Some factors that would indicate a need for more training hours may be counterbalanced by other factors indicating that fewer training hours are necessary. The following diagram illustrates some of the factors that should be considered when determining the adequacy of flight training hours.

Table 3-59. Factors of Flight Training Hours

Special Operations		No Special Operations
New Entrant Operator		Basic Servo/Mechanical Instruments
Complex Pilot Operation of Aircraft Systems, Engines, Propellers		Pilot Experience with Similar Aircraft
Critical Aircraft Performance		Modern FSTDs
EFIS, FMS, Autoflight		Well-Organized Flight Instructor Guides
Dissimilar Flightcrew Experience Levels		Basic Navigation System
Low Visibility Capabilities		Simple Flight Handling Characteristics
Complex Navigation Systems		Effective System Integration Training
More than National Norm	National Norm	Less than National Norm

Table 3-60. Flight Training Hours (National Norms) Two Pilots—FSTD

	Family of Aircraft	CATEGORY OF TRAINING				
		Initial New-Hire	Initial Equipment	Transition	Upgrade	Recurrent
TRANSPORT AND COMMUTER CATEGORY AIRPLANE	Part 121 Group I (Reciprocating)	PIC – 24 SIC – 24 FE – 20	PIC – 20 SIC – 20 FE – 20	PIC – 20 SIC – 20 FE – 20	SIC TO PIC 8 FE TO SIC 20	PIC – 4 SIC – 4 FE – 4
	Part 121 Group I (Turboprop)	PIC – 24 SIC – 24 FE – 20	PIC – 20 SIC – 20 FE – 20	PIC – 20 SIC – 20 FE – 20	SIC TO PIC 8 FE TO SIC 20	PIC – 4 SIC – 4 FE – 4
	Part 121 Group II (Turbojet)	PIC – 28 SIC – 28 FE – 20	PIC – 24 SIC – 24 FE – 20	PIC – 24 SIC – 24 FE – 20	SIC TO PIC 8 FE TO SIC 28	PIC – 4 SIC – 4 FE – 4
	Part 135 Transport and Commuter Category	PIC – 24 SIC – 24	PIC – 20 SIC – 20	PIC – 20 SIC – 20	SIC TO PIC 8	PIC – 4 SIC – 4
MULTIENGINE AIRPLANE	Part 135 IFR/VFR	PIC – 16 SIC – 16	PIC – 12 SIC – 12	PIC – 8 SIC – 8	SIC TO PIC 4	PIC – 2 SIC – 2
	Part 135 VFR Only	PIC – 4 SIC – 4	PIC – 4 SIC – 4	PIC – 4 SIC – 4	SIC TO PIC 4	PIC – 1 SIC – 1
SINGLE-ENGINE AIRPLANE	Part 135 IFR/VFR	PIC – 8 SIC – 8	PIC – 4 SIC – 4	PIC – 4 SIC – 4	SIC TO PIC 2	PIC – 2 SIC – 2
	Part 135 VFR Only	PIC – 4 SIC – 4	PIC – 4 SIC – 4	PIC – 4 SIC – 2	SIC TO PIC 2	PIC – 1 SIC – 1
HELICOPTER	IFR/VFR	PIC – 16 SIC – 16	PIC – 12 SIC – 12	PIC – 8 SIC – 8	SIC TO PIC 4	PIC – 2 SIC – 2
	VFR Only	PIC – 4 SIC – 4	PIC – 4 SIC – 4	PIC – 4 SIC – 4	SIC TO PIC 4	PIC – 1 SIC – 1

Table 3-61. Flight Training Hours (National Norms) One Pilot—FSTD or When All Training is Conducted in an Aircraft

	Family of Aircraft	CATEGORY OF TRAINING				
		Initial New-Hire	Initial Equipment	Transition	Upgrade	Recurrent
TRANSPORT AND COMMUTER CATEGORY AIRPLANE	Part 121 Group I (Reciprocating)	PIC – 14 SIC – 14 FE – 12	PIC – 14 SIC – 14 FE – 12	PIC – 12 SIC – 12 FE – 12	SIC TO PIC 6 FE TO SIC 14	PIC – 4 SIC – 4 FE – 4
	Part 121 Group I (Turboprop)	PIC – 15 SIC – 15 FE – 12	PIC – 15 SIC – 15 FE – 12	PIC – 12 SIC – 12 FE – 12	SIC TO PIC 6 FE TO SIC 15	PIC – 4 SIC – 4 FE – 4
	Part 121 Group II (Turbojet)	PIC – 20 SIC – 16 FE – 12	PIC – 20 SIC – 16 FE – 12	PIC – 12 SIC – 12 FE – 12	SIC TO PIC 6 FE TO SIC 16	PIC – 4 SIC – 4 FE – 4
	Part 135 Transport and Commuter Category	PIC – 12 SIC – 12	PIC – 10 SIC – 10	PIC – 8 SIC – 8	SIC TO PIC 6	PIC – 4 SIC – 4
MULTIENGINE AIRPLANE	Part 135 IFR/VFR	PIC – 8 SIC – 8	PIC – 6 SIC – 6	PIC – 6 SIC – 6	SIC TO PIC 4	PIC – 3 SIC – 3
	Part 135 VFR Only	PIC – 4 SIC – 4	PIC – 3 SIC – 3	PIC – 3 SIC – 3	SIC TO PIC 2	PIC – 2 SIC – 2
SINGLE-ENGINE AIRPLANE	Part 135 IFR/VFR	PIC – 6 SIC – 6	PIC – 4 SIC – 4	PIC – 4 SIC – 4	SIC TO PIC 4	PIC – 3 SIC – 3
	Part 135 VFR Only	PIC – 3 SIC – 2	PIC – 2 SIC – 1	PIC – 2 SIC – 1	SIC TO PIC 1	PIC – 1 SIC – 1
HELICOPTER	IFR/VFR	PIC – 10 SIC – 10	PIC – 8 SIC – 8	PIC – 6 SIC – 6	SIC TO PIC 4	PIC – 4 SIC – 4
	VFR Only	PIC – 4 SIC – 4	PIC – 3 SIC – 3	PIC – 3 SIC – 3	SIC TO PIC 2	PIC – 2 SIC – 2

3-1231 COURSE COMPLETION REQUIREMENTS.

A. Failure to Meet Requirements. Ordinarily, a flightcrew member completes a flight training curriculum segment by successfully accomplishing each training event and the specified number of training hours. Flightcrew members are then required to successfully meet the requirements specified in the qualification curriculum segment (see Volume 3, Chapter 19, Section 7, for the qualification curriculum segment requirements). If a person fails to meet any of the qualification requirements because of a lack in flight proficiency, that person must be returned to training status. After retraining, an instructor recommendation is required for reaccomplishing the unsatisfactory qualification requirement.

B. Exceptions to Requirements. A flightcrew member may successfully complete a flight training curriculum segment without completing the specified number of training hours, provided all of the following conditions are met:

1) The crewmember successfully completes all of the training events required by the curriculum segment.

2) An instructor recommends the flight test be conducted before completion of the specified number of training hours. The recommendation must be suitably documented.

3) The flightcrew member satisfactorily completes the qualification curriculum segment requirements. If a flightcrew member fails to meet the qualification curriculum segment requirements because of a lack of flight proficiency, he or she must be required to complete all the training hours specified in the flight training curriculum segment. The crewmember must then be recommended by an instructor before being rechecked on the failed qualification requirements.

3-1232 EVALUATION OF FLIGHT TRAINING CURRICULUM SEGMENT

OUTLINES FOR INITIAL APPROVAL. When evaluating a flight training proposal for initial approval, an inspector must determine that the proposed curriculum segment meets the following requirements:

A. Maneuvers and Procedures Table. The training events must be consistent with the maneuvers and procedures tables applicable to the specific category of training. An inspector must select the appropriate maneuvers and procedures table and make a side-by-side comparison of the table and the proposed flight training curriculum segment. The required training events and the appropriate level FSTD or aircraft to be used must be in the proposal. Omission of any required training event or inappropriate use of an FSTD is sufficient reason to deny initial approval.

B. Realistic Training Hours. The specified training hours are realistic, as discussed in paragraph 3-1230.

C. Examining Courseware. The training emphasizes specific areas applicable to the category of training. Since flight training curriculum outlines are not usually constructed in a manner that allows for a determination that appropriate areas are emphasized, an inspector must examine courseware (such as flight instructor guides and LOFT scenarios) to determine if appropriate areas will be emphasized and if the operator is capable of developing acceptable courseware. In the paragraphs preceding the applicable maneuvers and procedures tables in this section, training emphasis considerations for each category of flight training are discussed.

3-1233 EVALUATING THE OPERATOR'S MANEUVERS AND PROCEDURES

DOCUMENT. The operator must provide a maneuvers and procedures document for approval by the FAA. An inspector must determine that this document provides detailed descriptions or pictorial displays for the normal, abnormal, and emergency maneuvers, including the procedures and functions that will be performed in flight training. Instructor guides or lesson plans which support the maneuvers and procedures document should specify the conditions (such as weather, aircraft weight, and other parameters) to be applied during training on a maneuver or procedure. The conditions specified in these guides or lesson plans should be equivalent to the types of operations authorized by the operations specifications (OpSpecs), such as low visibility takeoffs or the use of Category (CAT) I Approach or CAT II Approach minimums. FAA policy requires

detailed descriptions (or pictorial displays) of at least those training events identified with the symbol “M” in the appropriate maneuvers and procedures tables. Maneuvers and procedures documents must be evaluated in sufficient detail to ensure the following requirements are met:

A. FSB Recommendations. The descriptions of applicable maneuvers or procedures must conform to recommendations made in the FSB report when appropriate.

B. Flight Manual. The description of each maneuver or procedure must conform to the operating limitations and procedures in the FAA-approved AFM/Rotorcraft Flight Manual (RFM) or the operator’s aircraft operating manual.

C. Procedural Instructions. The description of each maneuver or procedure must conform to the certificate holder’s procedural instructions for flight deck checks, altitude awareness, required callouts, crew coordination, and CRM.

D. Specify Procedures. The description of each maneuver or procedure must specify the operator’s procedures, such as altitudes, configuration airspeeds, and other parameters.

3-1234 AIRCRAFT FAMILIES. The four families of aircraft used in part 121 and part 135 operations are described in Volume 3, Chapter 19, Section 1, paragraph 3-1073. The flight training requirements for flightcrew members differ significantly between each family. Within each family, the flight training requirements are similar, even though individual aircraft may differ significantly in construction and appearance. The maneuvers and procedures tables have been tailored to account for similar flightcrew member knowledge, skill, and ability requirements common to aircraft of a particular family and specific to different kinds of operations within a family.

A. Transport and Commuter Category Airplane Family. Airplanes in this family are similar in operational characteristics. Flightcrew members of airplanes in this family are required to have similar knowledge, skills, and abilities regardless of the applicable operating regulation (part 121 or part 135). The maneuvers and procedures tables containing required training events for flightcrew members operating airplanes in this family are in paragraphs 3-1245 through 3-1248 (see Tables 3-62 through 3-65).

B. Multiengine General Purpose Airplane Family. Flightcrew members of airplanes in this family are required to have similar knowledge, skills, and abilities when operating under part 135. The flight training events required for flightcrew members operating airplanes in this family are identified in the maneuvers and procedures table in paragraph 3-1249 (see Table 3-66, Flight Training PIC/SIC Training (All Training Categories)—Multiengine General Purpose Airplanes).

C. Single-Engine Airplane Family. Flightcrew members of airplanes in this family are required to have similar knowledge, skills, and abilities to be operated under part 135. The flight training events required for the operation of single-engine airplanes are identified in the maneuvers and procedures table in paragraph 3-1250 (see Table 3-67, Flight Training PIC/SIC Flight Training (All Training Categories)—Single-Engine Airplanes).

D. Helicopter Family. Flightcrew members operating helicopters under part 135 are required to have similar knowledge, skills, and abilities. The flight training events required for flightcrew members operating helicopters are identified in the maneuvers and procedures table (see Table 3-68, Flight Training PIC/SIC Flight Training (All Training Categories)—Helicopter (under development)).

3-1235 FSTD. Flight training equipment consists of flight training devices (FTD), FFSs, and the aircraft. The approved use of each item of flight training equipment is listed in the maneuvers and procedures tables. These FTDs and FFSs are the only types of flight training equipment (other than aircraft) which may be approved for use in an FAA-approved flight training program. Before any level 4 or 5 FTD can be used, it must be evaluated by the POI to determine that it meets the prescribed requirements for the appropriate level of FTD. Before a level 6 or higher FTD or any level FFS can be used, it must be evaluated and qualified by the National Simulator Program (NSP) and approved by the operator's POI. The following paragraphs describe the FSTDs applicable to parts 121 and 135 flight training. Title 14 CFR part 60 specifies the qualification, maintenance, and evaluation requirements for FSTDs. For previously qualified FSTDs, as permitted by part 60, § 60.17, the current edition of AC 120-40, Airplane Simulator Qualification; AC 120-45, Airplane Flight Training Device Qualification; AC 121-14, Aircraft Simulator Evaluation and Approval; or AC 120-63, Helicopter Simulator Qualification, provides the qualification policy and criteria. The functional descriptions in the following paragraphs provide only a brief overview. Therefore, part 60 and the appropriate ACs, if applicable, are the only authorized source documents and must be used for evaluation and approval of FSTDs.

NOTE: Levels 1 through 3 FTDs may not be used in part 121 or part 135 training programs.

3-1236 LEVEL 4 FTD.

A. Purpose. To permit learning, development, and the practice of skills and flight deck procedures necessary for understanding and operating the integrated systems of a specific aircraft.

B. Functional Description. A level 4 FTD has the following characteristics and components:

- A replica of the flight deck panels, switches, controls, and instruments, in proper relationship, to represent the aircraft for which training is to be accomplished;
- Systems indications which respond appropriately to switches and controls which are required to be installed for the training or checking to be accomplished; and
- Air/ground logic (however, simulated aerodynamic capabilities are not required).

3-1237 LEVEL 5 FTD.

A. Purpose. To permit learning, development, and the practice of skills, flight deck procedures, and Instrument Flight Procedures (IFP) necessary for understanding and operating the integrated systems of a specific aircraft in typical flight operations in real time.

B. Functional Description. A level 5 FTD has the following characteristics and components:

- A replica of the flight deck panels, switches, controls, and instruments, in proper relationship, to represent the aircraft for which training is to be accomplished;
- Systems indications which respond appropriately to switches and controls which are required to be installed for the training or checking to be accomplished;
- Simulated aerodynamic capabilities representative of the aircraft group or class;
- Functional flight and navigational controls, displays, and instrumentation; and
- Control forces and control travel of sufficient precision for manually flying an instrument approach.

3-1238 LEVEL 6 FTD.

A. Purpose. To permit learning, development, and the practice of skills in flight deck procedures, IFPs, certain symmetrical maneuvers, and flight characteristics necessary for operating the integrated systems of a specific aircraft in typical flight operations.

B. Functional Description. A level 6 FTD has the following characteristics and components:

- Systems indications which respond appropriately to switches and controls which are required to be installed;
- A replica of the flight deck of the aircraft for which training is to be accomplished;
- Simulated aerodynamic capabilities which closely represent the specific aircraft in ground and flight operations;
- Functional flight and navigational controls, displays, and instrumentation;
- Control forces and control travel which correspond to the aircraft; and
- Instructor controls.

3-1239 LEVEL A FFS.

A. Purpose. To permit development and practice of the necessary skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level A FFSs may be used for specified pilot recency-of-experience requirements and specified flight operational task training requirements in transition, upgrade, recurrent, and requalification training under parts 121 and 135. It may also be used for initial new-hire and initial equipment training on specified events.

B. Functional Description. Level A FFSs have the following characteristics and components:

- Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program;
- Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated;

- A full-scale replica of the flight deck of the aircraft being simulated;
- Correct simulation of the aerodynamic characteristics of the aircraft being simulated;
- Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter;
- Control forces and travel which correspond to the aircraft;
- Instructor controls and seat;
- At least a night visual system with the minimum of a 45-degree horizontal by 30-degree vertical field of view (FOV) for each pilot station; and
- A motion system with at least 3 degrees of freedom.

3-1240 LEVEL B FFS.

A. Purpose. To permit development and practice of the necessary skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level B FFSs may be used for pilot recency-of-experience requirements and for specified flight operational task training requirements in transition, upgrade, recurrent, and requalification training under parts 121 and 135. It may also be used for initial new-hire and initial equipment training on specified events. Level B FFSs may also be used to accomplish night takeoffs and landings, and for landings in a proficiency check.

B. Functional Description. Level B FFSs have the following characteristics and components:

- Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program;
- Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated;
- A full-scale replica of the flight deck of the aircraft being simulated;
- Correct simulation of the aerodynamic (including ground effect) and ground dynamic characteristics of the aircraft being simulated;
- Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter;
- Control forces and travel which correspond to the aircraft;
- Instructor controls and seat;
- At least a night visual system with a minimum of a 45-degree horizontal by 30-degree vertical FOV for each pilot station; and
- A motion system with at least 3 degrees of freedom.

3-1241 LEVEL C FFS.

A. Purpose. To permit development and practice of the necessary skills for accomplishing flight operational tasks to a prescribed standard of airman competency in a specific aircraft and duty position. Level C FFSs may be used for pilot recency-of-experience requirements and for specified flight operational task training in transition, upgrade, recurrent, and requalification training under parts 121 and 135. It may also be used for initial new-hire and

initial equipment training for all events. All training events may be conducted in a level C FFS for persons who have previously qualified as PIC or SIC with that operator.

B. Functional Description. Level C FFSs have at least the following characteristics and components:

- Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program;
- Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated;
- A full-scale replica of the flight deck of the aircraft being simulated;
- Correct simulation of the aerodynamic (including ground effect) and ground dynamic characteristics of the aircraft being simulated;
- Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter;
- Control forces, dynamics, and travel which correspond to the aircraft;
- Instructor controls and seat;
- At least a night and dusk visual system with a minimum of a 75-degree horizontal by 30-degree vertical FOV for each pilot station; and
- A motion system with at least 6 degrees of freedom.

3-1242 LEVEL D FFS.

A. Purpose. To permit development and practice of the necessary skills for accomplishing flight operational tasks to a prescribed standard of airman competency in a specific aircraft and duty position. Level D FFSs may be used for parts 121 and 135 pilot recency-of-experience requirements and for all flight operational task training, except for static aircraft training.

B. Functional Description. Level D FFSs have the following characteristics and components:

- Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program;
- Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated;
- A full-scale replica of the flight deck of the aircraft being simulated;
- Correct simulation of the aerodynamic (including ground effect) and ground dynamic characteristics of the aircraft being simulated;
- Correct simulation of selected environmentally affected aerodynamic and ground dynamic characteristics of the aircraft being simulated considering the full range of its flight envelope in all approved configurations;
- Correct and realistic simulation of the effects of environmental conditions which the aircraft might encounter;
- Control forces, dynamics, and travel which correspond to the aircraft;
- Instructor controls and seat;

- A daylight, dusk, and night visual system with the minimum of a 75-degree horizontal by 30-degree vertical FOV for each pilot station; and
- A motion system with at least 6 degrees of freedom.

3-1243 MANEUVERS AND PROCEDURES TABLES.

A. Compliance. The events which must be accomplished during flight training are listed in the maneuvers and procedures tables in this section. The requirements of parts 121 and 135 are included in these tables. These tables can be used as a single-source document in the development and evaluation of flight training curriculum segment proposals. Compliance with the provisions of these tables automatically ensures that all requirements of both parts 121 and 135 are met. These tables also contain the acceptable flight training equipment (FSTD or aircraft) which may be used for any training event. An “X” indicates that the specified FSTD has been qualified for that event without further consideration or approval. An “A” indicates that a lower-level FSTD may be used for procedural training if that device has the necessary systems representations and functions for training on the event. These systems representations and functions exceed the basic requirements for that level FSTD; therefore, an “A” indicates that the FSTD must be evaluated and approved for each particular event. Any maneuver or procedure permitted in a specific level of FSTD may also be conducted in a higher level of FSTD or the aircraft itself (provided the event can safely be accomplished in the aircraft). Certain training events within the tables are preceded with a box ([]). If the operator is authorized (or required) to conduct these maneuvers by OpSpecs (e.g., a circling approach), a POI should check the appropriate box to indicate these events must be included in the training curriculum. Certain optional training events indicated by a pound sign (#) in the maneuvers and procedures tables are not specifically required by the regulations or OpSpecs. Many of these optional training events, however, are often included in an operator’s flight training curriculums and should be conducted in a properly qualified FSTD.

NOTE: See paragraph 3-1233 for description of maneuvers marked with the letter M.

B. Wind Shear Training. Wind shear training is a training event in each table. The tables indicate that wind shear training may only be performed in an FFS. Operators who do not use an FFS may perform their wind shear/microburst training in accordance with the guidelines in the FAA Windshear Training Aid.

C. Ice-Contaminated Tailplane Stall (ICTS). Verify training includes AFM limitations and procedures for operating in icing conditions, if available. For airplanes that are not susceptible to ICTS, verify tailplane stall recovery is not included. For airplanes that have not been evaluated for ICTS, verify training includes manufacturer recommendations regarding operations in icing conditions, if available. Contact the Small Airplane Directorate Standards Office (ACE-110) for a list of airplanes susceptible to ICTS.

D. Requirements Paragraph. Preceding each maneuver and procedure table is a paragraph which states the required maneuvers and procedures for each flightcrew member and provides guidance on specific areas of emphasis which should be included in the training.

3-1244 PIC/SIC INITIAL NEW-HIRE AND INITIAL EQUIPMENT FLIGHT TRAINING—TRANSPORT AND COMMUTER CATEGORY AIRPLANES.

A. Required Maneuvers and Procedures. Training in the maneuvers and procedures in Table 3-62, Flight Training PIC/SIC Initial New-Hire and Initial Equipment Flight Training—Transport and Commuter Category Airplanes, must be conducted for satisfactory completion of initial new-hire and initial equipment flight training.

- 1) PICs must complete training in each training event in this table.
- 2) SICs must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary aircraft controls but should emphasize duties of the PM:
 - Approach and landing with pitch mistrim,
 - Approach and landing with 50 percent loss of power,
 - Approach and landing with flap/slat malfunction, and
 - Steep turns.

B. Training Emphasis Considerations. A POI should ensure that the operator's flight training emphasizes appropriate areas for these categories of training:

- 1) For initial new-hire training, emphasis should be on specific company procedures and procedures for the particular aircraft.
- 2) For initial equipment training, emphasis should be on company procedures specific to the aircraft.

Table 3-62. Flight Training PIC/SIC Initial New-Hire and Initial Equipment Flight Training—Transport and Commuter Category Airplanes (Front Side)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
PREPARATION	Visual Inspection (For aircraft with FE, use of pictorial display authorized)									X
	Prestart Procedures	A	A	X		X	X	X	X	X
	Performance Limitations	X	X	X		X	X	X	X	X
SURFACE OPERATION	Pushback			X		X	X	X	X	X
	<input type="checkbox"/> Powerback Taxi							X	X	X
	Starting	A	A	X		X	X	X	X	X
	Taxi/Runway Operations							X	X	X
	Pretakeoff Checks	A	A	X		X	X	X	X	X
TAKEOFF	Normal M							X	X	X
	Crosswind							X	X	X
	Rejected M			X		X	X	X	X	X
	Power Failure V ₁ M					X	X	X	X	X
	Powerplant Failure During Second Segment #					X	X	X	X	X
	<input type="checkbox"/> Lower than Standard Minimum					X	X	X	X	X
CLIMB	Normal			X		X	X	X	X	X
	One Engine Inoperative During Climb to En Route Altitude #					X	X	X	X	X
EN ROUTE	Steep Turns PIC			X		X	X	X	X	X
	Stall Prevention (Approaches to Stalls): M (Takeoff Config.) (En Route Config.) (Landing Config.) X* The approved recovery procedure must be initiated at the first indication of an impending stall (buffet, stick shaker, aural warning).			X*		X	X	X	X	X
	Inflight Powerplant Shutdown	A	A	X		X	X	X	X	X
	Inflight Powerplant Restart		A	X		X	X	X	X	X
	High-Speed Handling Characteristics					X	X	X	X	X
DESCENT	Normal			X		X	X	X	X	X
	Maximum Rate					X	X	X	X	X

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
APPROACHES	VFR Procedures M Visual Approach							X	X	X
	With 50 percent loss of power on one-side PIC M (2 engines inoperative on 3-engine airplanes) A* (May be accomplished in levels A or B provided one-engine-inoperative training is conducted in level C or D, or the aircraft)					A*	A*	X	X	X
	With Slat/Flap Malfunction PIC M					X	X	X	X	X
	IFR Precision Approaches M ILS/Normal							X	X	X
	ILS/One Engine Inoperative							X	X	X
	<input type="checkbox"/> PAR/Normal					X	X	X	X	X
	<input type="checkbox"/> PAR/One Engine Inoperative #					X	X	X	X	X
	IFR Nonprecision Approaches M NDB/Normal			A*		X	X	X	X	X
	VOR/Normal A* At least one Nonprecision approach must be accomplished in a FFS or the aircraft			A*		X	X	X	X	X
	Nonprecision Approach One Engine Inoperative #		A	X		X	X	X	X	X
	<input type="checkbox"/> LOC Backcourse Procedures		A	X		X	X	X	X	X
	<input type="checkbox"/> SDF/LDA Procedures		A	X		X	X	X	X	X
	<input type="checkbox"/> ASR Procedures		A	X		X	X	X	X	X
	<input type="checkbox"/> RNAV Procedures		A	X		X	X	X	X	X
<input type="checkbox"/> LORAN C Procedures		A	X		X	X	X	X	X	

Table 3-62. Flight Training PIC/SIC Initial New-Hire and Initial Equipment Flight Training—Transport and Commuter Category Airplanes (Back Side)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
APPROACHES (Cont'd)	[] Circling Approach M (FFS must be qualified for training/checking on the circling maneuver)							X	X	X
	Missing Approaches M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	With Powerplant Failure					X	X	X	X	X
	NOTE: At least one MAP must be a complete approved procedure. At least one MAP must be with a powerplant failure									
LANDINGS	Normal							X	X	X
	With Pitch Mistrim PIC							X	X	X
	From Precision Instrument Approach							X	X	X
	From Precision Instrument Approach With Most Critical Engine Inoperative							X	X	X
	With 50 percent loss of power on one side PIC (2 engines inoperative on 3-engine airplanes) A* (May be accomplished in Levels A or B, provided one-engine-inoperative training is conducted in level C or D, or the aircraft.)					A*	A*	X	X	X
	With Flap/Slat Malfunction					X	X	X	X	X
	Crosswind							X	X	X
	With Manual Reversion/Degraded Control Augmentation					X	X	X	X	X
AFTER LANDING	Parking #							X	X	X
	Emergency Evacuation #			X		X	X	X	X	X
OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE	Holding			X		X	X	X	X	X
	Ice Accumulation on Airframe #					X	X	X	X	X
	Air Hazard Avoidance #					A	A	X	X	X
	Wind Shear/Microburst #					X	X	X	X	

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Normal - Abnormal - Alternate	Pneumatic/Pressurization	A	A	X		X	X	X	X	X
	Air Conditioning	A	A	X		X	X	X	X	X
	Fuel and Oil	A	A	X		X	X	X	X	X
	Electrical	A	A	X		X	X	X	X	X
	Hydraulic	A	A	X		X	X	X	X	X
	Flight Controls	A	A	X		X	X	X	X	X
	Anti-Icing and Deicing Systems			X		X	X	X	X	X
	Autopilot (AP)		A	X		X	X	X	X	X
	Flight Management Guidance Systems and/or Automatic or Other Approach & Landing Aids		A	X		X	X	X	X	X
	Stall Warning Devices, Stall Avoidance Devices, and Stability Augmentation Systems			X		X	X	X	X	X
	Airborne Weather Radar	A	A	X		X	X	X	X	X
	Flight Instrument System Malfunction		A	X		X	X	X	X	X
	Communications Equipment	A	A	X		X	X	X	X	X
Navigation Systems	A	A	X		X	X	X	X	X	
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Emergency	Aircraft Fires	A	A	X		X	X	X	X	X
	Smoke Control	A	A	X		X	X	X	X	X
	Powerplant Malfunctions	A	A	X		X	X	X	X	X
	Fuel Jettison	A	A	X		X	X	X	X	X
	Electrical, Hydraulic, Pneumatic Systems	A	A	X		X	X	X	X	X
	Flight Control Systems Malfunction	A	A	X		X	X	X	X	X
	Landing Gear and Flap Systems Malfunction	A	A	X		X	X	X	X	X

3-1245 PIC/SIC TRANSITION AND UPGRADE FLIGHT TRAINING—TRANSPORT AND COMMUTER CATEGORY AIRPLANES.

A. Required Maneuvers and Procedures. Training in the maneuvers and procedures in Table 3-63, Flight Training PIC/SIC Transition and Upgrade Flight Training—Transport and Commuter Category Airplanes, must be conducted for satisfactory completion of transition or upgrade flight training.

1) **PIC Transition Training.** PICs must complete training in each training event in this table.

2) SIC Transition Training. SICs must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary flight controls but should emphasize the duties of the PM:

- Approach and landing with pitch mistrim,
- Approach and landing with 50 percent loss of power,
- Approach and landing with flap/slat malfunction, and
- Steep turns.

3) PIC Upgrade Training. An SIC upgrading to PIC must complete training in each training event in this table (including those marked “PIC”).

4) SIC Upgrade Training. FEs upgrading to SIC must complete training in each training event in Table 3-63. FEs upgrading to SIC are not required to manipulate the primary flight controls for the following events, but should receive training which emphasizes duties of the PM. The training events are as follows:

- Approach and landing with pitch mistrim,
- Approach and landing with 50 percent loss of power,
- Approach and landing with flap/slat malfunction, and
- Steep turns.

B. Training Emphasis Considerations. POIs should ensure that the operator’s transition and upgrade training emphasizes the appropriate areas for these categories of training:

1) For transition training, emphasis should be on the handling characteristics and the maneuvers and procedures pertinent to the specific aircraft type.

2) For upgrade training, emphasis should be on the specific duties and responsibilities pertinent to the flightcrew member position. Additionally, in the case of an FE upgrading to SIC, maneuver-emphasis training (particularly in approaches and landings) should be included.

**Table 3-63. Flight Training PIC/SIC Transition and Upgrade Flight Training—
Transport and Commuter Category Airplanes (Front Side)**

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
PREPARATION	Visual Inspection (For aircraft with FE, use of pictorial display authorized)									X
	Prestart Procedures	A	A	X		X	X	X	X	X
	Performance Limitations	X	X	X		X	X	X	X	X
SURFACE OPERATION	Pushback			X		X	X	X	X	X
	[] Powerback Taxi							X	X	X
	Starting	A	A	X		X	X	X	X	X
	Taxi							X	X	X
	Pretakeoff Checks	A	A	X		X	X	X	X	X
TAKEOFF	Normal M							X	X	X
	Crosswind							X	X	X
	Rejected M			X		X	X	X	X	X
	Power Failure V1 M					X	X	X	X	X
	Powerplant Failure During Second Segment #					X	X	X	X	X
	[] Lower than Standard Minimum					X	X	X	X	X
CLIMB	Normal			X		X	X	X	X	X
	One Engine Inoperative During Climb to En Route Altitude #					X	X	X	X	X
EN ROUTE	Steep Turns PIC			X		X	X	X	X	X
	Stall Prevention (Approaches to Stalls): M (Takeoff Config.) (En Route Config.) (Landing Config.) X* The approved recovery procedure must be initiated at the first indication of an impending stall (buffet, stick shaker, aural warning).			X*		X	X	X	X	X
	Inflight Powerplant Shutdown	A	A	X		X	X	X	X	X
	Inflight Powerplant Restart		A	X		X	X	X	X	X
	High-Speed Handling Characteristics					X	X	X	X	X
DESCENT	Normal			X		X	X	X	X	X
	Maximum Rate					X	X	X	X	X
APPROACHES	VFR Procedures M Visual Approach							X	X	X

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	With 50 percent Loss of Power on One side PIC M (2 engines inoperative on 3-engine airplanes)					X	X	X	X	X
	With Slat/Flap Malfunction PIC M					X	X	X	X	X
	IFR Precision Approaches M ILS/Normal							X	X	X
	ILS/One Engine Inoperative					X	X	X	X	X
	[] PAR/Normal			X		X	X	X	X	X
	[] PAR/One Engine Inoperative #					X	X	X	X	X
	IFR Nonprecision Approaches M NDB/Normal			A*		X	X	X	X	X
	VOR/Normal A* At least one Nonprecision approach must be accomplished in a FFS or the aircraft			A*		X	X	X	X	X
	Nonprecision Approach One-Engine Inoperative #					X	X	X	X	X
	[] LOC Backcourse Procedures		A	X		X	X	X	X	X
	[] SDF/LDA Procedures		A	X		X	X	X	X	X
	[] ASR Procedures		A	X		X	X	X	X	X
	[] RNAV Procedures		A	X		X	X	X	X	X
	[] LORAN C Procedures		A	X		X	X	X	X	X

Table 3-63. Flight Training PIC/SIC Transition and Upgrade Flight Training—Transport and Commuter Category Airplanes (Back Side)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
APPROACHES (Cont'd)	Missing Approaches M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	With Powerplant Failure					X	X	X	X	X
	NOTE: At least one MAP must be a complete approved procedure. At least one MAP must be with a powerplant failure									
LANDINGS	Normal							X	X	X
	With Pitch Mistrim PIC					X	X	X	X	X
	From Precision Instrument Approach							X	X	X
	From Precision Instrument Approach With Most Critical Engine Inoperative							X	X	X
	With 50 percent Loss of Power on One Side PIC (2 engines inoperative on 3-engine airplanes)					X	X	X	X	X
	With Flap/Slat Malfunction					X	X	X	X	X
	Crosswind							X	X	X
	With Manual Reversion/Degraded Control Augmentation					X	X	X	X	X
AFTER LANDING	Parking #							X	X	X
	Emergency Evacuation #			X		X	X	X	X	X
OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE	Holding			X		X	X	X	X	X
	Ice Accumulation on Airframe #			X		X	X	X	X	X
	Air Hazard Avoidance #					A	X	X	X	X
	Wind Shear/Microburst #					X	X	X	X	
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Normal - Abnormal - Alternate	Pneumatic/Pressurization	A	A	X		X	X	X	X	X
	Air Conditioning	A	A	X		X	X	X	X	X
	Fuel and Oil	A	A	X		X	X	X	X	X
	Electrical	A	A	X		X	X	X	X	X
	Hydraulic	A	A	X		X	X	X	X	X
	Flight Controls	A	A	X		X	X	X	X	X
	Anti-Icing and Deicing Systems			X		X	X	X	X	X
	Autopilot		A	X		X	X	X	X	X

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	Flight Management Guidance Systems and/or Automatic or Other Approach and Landing Aids		A	X		X	X	X	X	X
	Stall Warning Devices, Stall Avoidance Devices, and Stability Augmentation Systems			X		X	X	X	X	X
	Airborne Weather Radar	A	A	X		X	X	X	X	X
	Flight Instrument System Malfunction		A	X		X	X	X	X	X
	Communications Equipment	A	A	X		X	X	X	X	X
	Navigation Systems	A	A	X		X	X	X	X	X
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Emergency	Aircraft Fires	A	A	X		X	X	X	X	X
	Smoke Control	A	A	X		X	X	X	X	X
	Powerplant Malfunctions	A	A	X		X	X	X	X	X
	Fuel Jettison	A	A	X		X	X	X	X	X
	Electrical, Hydraulic, Pneumatic Systems	A	A	X		X	X	X	X	X
	Flight Control Systems Malfunction	A	A	X		X	X	X	X	X
	Landing Gear and Flap Systems Malfunction	A	A	X		X	X	X	X	X

3-1246 PIC/SIC RFT—TRANSPORT AND COMMUTER CATEGORY AIRPLANES.

A. Required Maneuvers and Procedures. Training in the maneuvers and procedures in Table 3-64, Flight Training PIC/SIC Recurrent and Requalification Flight Training—Transport and Commuter Category Airplanes, in accordance with the following paragraphs, must be conducted for the satisfactory completion of RFT.

1) Part 135 RFT. Part 135 RFT must be conducted periodically, at least once every 12 months, for both PICs and SICs. Part 135, § 135.351(c) specifies that RFT for pilots must include at least “flight training in the maneuvers or procedures in this subpart, except that satisfactory completion of the check required by § 135.293” (the competency check) “may be substituted for recurrent flight training.” The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate, for the operations authorized, and appropriate to the category, class, and type of aircraft involved. The instrument proficiency check (IPC), as specified in § 135.293(c), may be substituted for the competency check. Additionally, there are no provisions in part 135 that allow recurrent training to substitute for required checks or tests. There are no training appendices in part 135 containing lists of the required maneuvers and procedures for flight training or checking. Training on the events in the applicable tables in this section meets the part 135 competency and IPC requirements and, therefore, the RFT requirements.

NOTE: When training or evaluating the ability of a pilot to control an aircraft on instruments and to navigate without reference to outside cues, the inspector, check pilot, or instructor must restrict the pilot's vision to the aircraft's instrument panel. This can only be ensured with the use of an appropriate view-limiting device. When an FSTD is not available for training or checking, the dilemma is how to safely perform these maneuvers under the "see and be seen" requirements of visual meteorological conditions (VMC) flight and still be able to accurately assess the pilot's ability to control and navigate an aircraft without reference to outside cues. On one hand, the use of a view-limiting device must not restrict the ability of the check pilot or other observers to safely clear the area and conduct outside vigilance during all maneuvers. On the other hand, the check pilot must be certain that the pilot is not using any outside references. In final analysis, the check or training should not be conducted if the requirements of safety and test integrity cannot be met (see Volume 5, Chapter 3, Section 4, paragraph 5-887).

2) Part 121 RFT. Part 121 RFT is training that must be conducted for PICs once every 6 months and for SICs once every 12 months, and must include training on the maneuvers and procedures listed in part 121 appendix F. Levels B, C, and D FFSs qualify for "training and checking to proficiency" on all the maneuvers and procedures required for RFT by part 121. RFT can always be conducted in an airplane. A proficiency check (§ 121.441) may be substituted for RFT.

3) Part 121 Level A RFT. Level A RFT is conducted in a level A FFS. Level A RFT is referenced in several different ways in part 121. The following are examples: "A course of training in an airplane simulator" (§ 121.409(b)); "flight training program approved by the Administrator" (§ 121.427(d)(1)(ii)); and "the approved simulator course of training" (§§ 121.433(c)(2) and 121.441(a)). For the purpose of standardization and mutual understanding, the term "level A recurrent flight training" or "level A RFT" should be used in reference to this type of training when it is conducted entirely in a level A FFS. Level A FFSs are not qualified to be used for "training to proficiency" on certain maneuvers listed in appendix F (such as takeoffs and landings). However, level A FFSs can be used for training and practice on the procedures used to accomplish these maneuvers. These maneuvers are annotated by a "C" in the RFT maneuvers and procedures table (Table 3-64). Level A RFT may be substituted for alternate periods of RFT (required by § 121.433(c)(2)) or for alternate proficiency checks (required by § 121.441(e)), provided the person being trained is evaluated by a check pilot during the subsequent proficiency check (for PICs, once each 12 months; for SICs once each 24 months). The proficiency check may be conducted in a level A FFS, provided the person being checked is evaluated during the conduct of two landings on the line (or other check) by a check pilot (or, for SICs, by a line PIC). The entire proficiency check (without the landings on the line requirement) may be conducted in a level B, C, or D FFS.

B. Training Emphasis Considerations. Operators should develop RFT and level A RFT curriculum segments which serve to maximize training on certain maneuvers and procedures. A pilot's competency to function in his assigned duty position is evaluated during an annual proficiency check (or a competency check). During that check, at least the events required by part 121 appendix F (for part 121 operators) and any of the events required for the original issuance of the particular pilot certificate involved (for part 135 operators) must be

accomplished. The RFT curriculum outline should address all the required training events listed in Table 3-64. However, during RFT or level A RFT, specific training on every event is unnecessary unless it is needed for maintaining pilot proficiency on particular events. It is national direction and guidance that, during periods of RFT or level A RFT, training emphasis should be on those events or other maneuvers or procedures not normally encountered during routine line operations, such as abnormal or emergency procedure training or wind shear training. Additionally, training on new or revised maneuvers or procedures, new equipment, or other similar areas is ideally suited for periods of RFT or level A RFT. Time should be allotted to conduct training in maneuvers or procedures the pilot wishes to practice, or in certain operational areas in which deficiencies have surfaced during proficiency or line checks, indicating a need for additional training.

NOTE: Even though all of the maneuvers and procedures may not be accomplished during RFT or level A RFT, the RFT curriculum segment outline should address all of the required training events listed in Table 3-64.

Table 3-64. Flight Training PIC/SIC Recurrent and Requalification Flight Training—Transport and Commuter Category Airplanes (Front Side)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
PREPARATION	Visual Inspection (Use of pictorial display authorized)									X
	Pretaxi Procedures		X	X		X	X	X	X	X
	Performance Limitations	A	A	X		X	X	X	X	X
SURFACE OPERATION	Pushback	A	A	X		X	X	X	X	X
	[] Powerback Taxi					X	X	X	X	X
	Starting			X		X	X	X	X	X
	Taxi					C	C	X	X	X
	Pretakeoff Checks	A	A	X		X	X	X	X	X
TAKEOFF	Normal M					C	C	X	X	X
	Crosswind					C	C	X	X	X
	Rejected M			X		X	X	X	X	X
	Power Failure V1 M					X	X	X	X	X
	Powerplant Failure During Second Segment #					X	X	X	X	X
	[] Lower than Standard Minimum					X	X	X	X	X
CLIMB	Normal			X		X	X	X	X	X
	One Engine Inoperative During Climb to En Route Altitude #					X	X	X	X	X
EN ROUTE	Steep Turns PIC			X		X	X	X	X	X

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	Stall Prevention (Approaches to Stalls): M (Takeoff Config.) (En Route Config.) (Landing Config.) X* The approved recovery procedure must be initiated at the first indication of an impending stall (buffet, stick shaker, aural warning).			X*		X	X	X	X	X
	Inflight Powerplant Shutdown	A	A	X		X	X	X	X	X
	Inflight Powerplant Restart		A	X		X	X	X	X	X
	High-Speed Handling Characteristics					X	X	X	X	X
DESCENT	Normal			X		X	X	X	X	X
	Maximum Rate			X		X	X	X	X	X
APPROACHES	VFR Procedures M Visual Approach					C	X	X	X	X
	With 50 percent Loss of Power on One side PIC M (2 engines inoperative on 3-engine airplanes)					X	X	X	X	X
	With Slat/Flap Malfunction PIC M					X	X	X	X	X
	IFR Precision Approaches M ILS/Normal					X	X	X	X	X
	ILS/One Engine Inoperative [] PAR/Normal			X		X	X	X	X	X
	[] PAR/One Engine Inoperative #					X	X	X	X	X
	IFR Nonprecision Approaches M NDB/Normal			A*		X	X	X	X	X
	VOR/Normal A* At least one Nonprecision approach must be accomplished in a FFS or the aircraft			A*		X	X	X	X	X
	Nonprecision Approach One-Engine Inoperative #					X	X	X	X	X
	[] LOC Backcourse Procedures		A	X		X	X	X	X	X
[] SDF/LDA Procedures		A	X		X	X	X	X	X	

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	<input type="checkbox"/> ASR Procedures		A	X		X	X	X	X	X
	<input type="checkbox"/> RNAV Procedures		A	X		X	X	X	X	X
	<input type="checkbox"/> LORAN C Procedures		A	X		X	X	X	X	X
	<input type="checkbox"/> Circling Approach M (FFS must be qualified for training/checking on the circling maneuver)					X	X	X	X	X

Table 3-64. Flight Training PIC/SIC Recurrent and Requalification Flight Training—Transport and Commuter Category Airplanes (Back Side)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
APPROACHES (Cont'd)	Missing Approaches M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	With Powerplant Failure					X	X	X	X	X
LANDINGS	Normal					C	X	X	X	X
	With Pitch Mistrim PIC					C	X	X	X	X
	From Precision Instrument Approach					X	X	X	X	X
	From Precision Instrument Approach With Most Critical Engine Inoperative					X	X	X	X	X
	With 50 percent Loss of Power on One Side PIC (2 engines inoperative on 3-engine airplanes)					X	X	X	X	X
	Crosswind					A	X	X	X	X
AFTER LANDING	Parking #					X	X	X	X	X
	Emergency Evacuation #			X		X	X	X	X	X
OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE	Holding			X		X	X	X	X	X
	Ice Accumulation on Airframe #					X	X	X	X	X
	Air Hazard Avoidance #					A	X	X	X	X
	Wind Shear/Microburst #					X	X	X	X	

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Normal - Abnormal - Alternate	Pneumatic/Pressurization	A	A	X		X	X	X	X	X
	Air Conditioning	A	A	X		X	X	X	X	X
	Fuel and Oil	A	A	X		X	X	X	X	X
	Electrical	A	A	X		X	X	X	X	X
	Hydraulic	A	A	X		X	X	X	X	X
	Flight Controls	A	A	X		X	X	X	X	X
	Anti-Icing and Deicing Systems			X		X	X	X	X	X
	Autopilot			X		X	X	X	X	X
	Flight Management Guidance Systems and/or Automatic or Other Approach and Landing Aids		A	X		X	X	X	X	X
	Stall Warning Devices, Stall Avoidance Devices, and Stability Augmentation Systems			X		X	X	X	X	X
	Airborne Weather Radar	A	A	X		X	X	X	X	X
	Flight Instrument System Malfunction	A	A	X		X	X	X	X	X
	Communications Equipment	A	A	X		X	X	X	X	X
Navigation Systems	A	A	X		X	X	X	X	X	
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Emergency	Aircraft Fires	A	A	X		X	X	X	X	X
	Smoke Control	A	A	X		X	X	X	X	X
	Powerplant Malfunctions	A	A	X		X	X	X	X	X
	Fuel Jettison	A	A	X		X	X	X	X	X
	Electrical, Hydraulic, Pneumatic Systems	A	A	X		X	X	X	X	X
	Flight Control Systems Malfunction	A	A	X		X	X	X	X	X
	Landing Gear and Flap Systems Malfunction	A	A	X		X	X	X	X	X

3-1247 PIC/SIC RELATED AIRCRAFT DIFFERENCES FLIGHT TRAINING— TRANSPORT CATEGORY AIRPLANES.

A. Required Maneuvers and Procedures. Under § 121.418(c), a POI is authorized to approve a modification to the flight training maneuver and procedure requirements of § 121.424 for designated related aircraft. The flight training must be conducted in the aircraft or minimum level of FSTD, as specified in the FSB report for each maneuver and procedure. See Volume 3, Chapter 19, Section 12, for additional information regarding related aircraft designation and related aircraft differences training.

3-1248 FE INITIAL EQUIPMENT, INITIAL NEW-HIRE, INITIAL EQUIPMENT, TRANSITION, AND RFT—TRANSPORT CATEGORY AIRPLANES.

A. Training Required for Initial Issuance of an FE Certificate. All applicants for an FE certificate with the initial class rating must satisfy one of the seven aeronautical experience and/or training requirements specified in 14 CFR part 63, § 63.37.

1) Section 63.37(b)(1), (2), (3), and (4) require, in addition to other specific requirements, that an applicant receive 5 hours of flight training in the duties of an FE. This training must be accomplished in an airplane in flight. There are no provisions for the substitution of FSTDs for any part of these 5 hours of flight training. These 5 hours of flight training may not be acquired during revenue operations conducted under part 121.

2) Section 63.37(b)(5), (6), and (7) are alternative methods for satisfying the aeronautical experience and/or training requirements of part 63. An applicant who meets the aeronautical experience requirements in subparagraph (b)(5) or (b)(6) is eligible for an initial FE certification check without any flight training (including the 5-hour airplane training requirement). Section 63.37(b)(7) allows the successful completion of an approved FE ground and flight course of instruction, as provided in part 63 appendix C, to satisfy the aeronautical experience requirements. If a student for initial issuance of an FE certificate uses the training received from a part 121 operator to meet the aeronautical experience requirements of § 63.37, that operator's FE training course must be approved under §§ 63.43, 121.419, and 121.425.

NOTE: When an operator's FE training curriculum meets the requirements of this order and is approved under part 121, it also meets the requirements of part 63. The operator may obtain approval of that curriculum under § 63.43 by submitting a letter requesting approval in accordance with the provisions of that regulation. A POI must approve or deny the request by letter.

3) Training under part 63 appendix C includes at least 10 hours of flight instruction. Appendix C is the only section in part 63 that permits the use of FSTDs. In accordance with part 63 appendix C (a)(3)(iv), an operator may reduce the flight training requirement to 5 hours of actual airplane time by substituting time in FSTDs for a total of at least 10 hours of flight training. It is important, however, to note that FFSs may be substituted on a two-to-one basis, and FTDs on a three-to-one basis, for actual airplane time. For example, for an operator to be permitted a reduction to 5 hours of airplane training, that operator must provide at least 10 hours of FFS time (two-to-one) or 15 hours of FTD time (three-to-one), or any other combination thereof which, when added to the 5 hours of airplane training, meets the 10-hour appendix C flight training requirement.

4) Part 63 appendix C (a)(iv)(b) permits an FE student holding at least a commercial pilot certificate with an instrument rating to substitute either FFS time or a combination of FSTD time for up to the full 10 hours of required airplane flight time. The two-to-one and three-to-one provisions still apply with an additional restriction that a maximum of 15 hours FTD time may be substituted. For example, an operator may substitute 20 hours of FFS time (2:1 = 10 hours of airplane flight training) for the total 10-hour appendix C airplane flight training requirement. Another example is an operator may substitute 10 hours of FFS time (2:1 = 5 hours of airplane

flight training) plus a maximum of 15 hours of FTD time (3:1 = 5 hours of airplane flight training for meeting the total 10-hour appendix C airplane flight training requirement. The purpose of the 15-hour FTD limitation is to ensure a certain amount of the flight training will include a full crew complement. It is important to note that substitution of FSTDs for airplane training is only permitted under a part 63 appendix C program (as discussed in subparagraphs A3) and 4) above). This provision should not be confused with § 63.37(b)(4), which permits a student holding a commercial pilot certificate with an instrument rating and who has received at least 5 hours of airplane flight training (no FSTD substitution permitted) to qualify for an FE check. Therefore, if an applicant with a commercial pilot certificate and instrument rating attends a part 63 appendix C school, the applicant can use § 63.37(b)(7) to satisfy the experience requirement and can take advantage of the FSTD substitution provisions.

B. FE Transition Flight Training. An FE employed by a part 121 operator who transitions from one airplane to another must complete a transition flight training curriculum segment approved under part 121. This training is not approved or conducted within the context of part 63. The use of FSTDs or aircraft for accomplishing training events must be proposed by the operator and approved by the POI.

NOTE: FE applicants who qualify under the Airlines for America (A4A) exemption number 4901 may receive the normal procedures portion of the initial certification check in a “flight engineer simulator.” An FE simulator, as defined in that exemption, is the equivalent of a level 6 FTD or higher, or any level FFS. The definition does not require motion for visual systems. This exemption permits compliance with § 63.39(b)(2), which requires the “normal” procedures portion of the certification check to be accomplished in the FE simulator rather than in an actual aircraft. For further explanation, see Volume 5, Chapter 4, Section 2, paragraph 5-1009.

C. Required Maneuvers and Procedures. Training in the maneuvers and procedures in Table 3-65, Flight Training FE Initial Equipment, Initial New-Hire, Transition, and Recurrent Flight Training, must be conducted for satisfactory completion of initial new-hire, initial equipment, and transition or recurrent training for previously certificated FEs and for the initial certification of FEs. Training for these maneuvers and procedures must include training in normal, abnormal, alternate, and emergency procedures, as appropriate.

D. Training Emphasis Considerations. A POI should ensure that the operator’s FE flight training emphasizes the appropriate areas for these categories of training:

- 1) For initial new-hire training, emphasis should be on areas involving crew concept, duties, responsibilities, systems integration concepts, and company procedures.
- 2) For transition and initial equipment training, emphasis should be on the systems and procedures that pertain to the specific aircraft type.
- 3) For recurrent training, emphasis should be on new or revised maneuvers or procedures that are pertinent to line operations.

Table 3-65. Flight Training FE Initial Equipment, Initial New-Hire, Transition, and Recurrent Flight Training

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
PREPARATION	Airplane Preflight • Logbook Procedures • Safety Checks (PICTORIAL DISPLAY) • Cabin/Interior • Exterior Walkaround M • Servicing/Deicing • Use of Oxygen	X	X	X		X	X	X	X	X
GROUND OPERATIONS	Performance Data • T/O LND Data • Airport Analysis • Weight and Balance (W&B)	X	X	X		X	X	X	X	X
	Use of Checklist • Panel Setup	X	X	X		X	X	X	X	X
	Starting • External PWR • External Air • APU	X	X	X		X	X	X	X	X
	Communications • Station Procedures • ACARS	X	X	X		X	X	X	X	X
	Taxi	X	X	X		X	X	X	X	X
TAKEOFF	Powerplant Control		X	X		X	X	X	X	X
	Flaps/Landing Gear		X	X		X	X	X	X	X
	Fuel Management	X	X	X		X	X	X	X	X
	Other Systems Operation	X	X	X		X	X	X	X	X
	Aircraft Performance	X	X	X		X	X	X	X	X
	Checklist Completion	X	X	X		X	X	X	X	X
CLIMB	Powerplant Control		X	X		X	X	X	X	X
	Fuel Management	X	X	X		X	X	X	X	X
	Pressurization		X	X		X	X	X	X	X
	Electrical System	X	X	X		X	X	X	X	X
	Air Conditioning		X	X		X	X	X	X	X
	Flight Controls	X	X	X		X	X	X	X	X
	Other Systems	X	X	X		X	X	X	X	X
EN ROUTE	Powerplant Operation		X	X		X	X	X	X	X
	Fuel Management	X	X	X		X	X	X	X	X
	Performance Management		X	X		X	X	X	X	X
	High Altitude Performance		X	X		X	X	X	X	X
	Other Systems Operation	X	X	X		X	X	X	X	X
DESCENT	Powerplant Operation		X	X		X	X	X	X	X

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	Other Systems Operations	X	X	X		X	X	X	X	X
	Performance Management	X	X	X		X	X	X	X	X
APPROACH	Landing Data	X	X	X		X	X	X	X	X
	Landing Gear Operation	X	X	X		X	X	X	X	X
	Flap/Slat/Spoiler Operation		X	X		X	X	X	X	X
	Approach Monitoring M		X	X		X	X	X	X	X
LANDINGS	Powerplant Operation		X	X		X	X	X	X	X
	Aircraft Configuration		X	X		X	X	X	X	X
	System Operation	X	X	X		X	X	X	X	X
	Emergency Evacuation			X		X	X	X	X	X
PROCEDURES DURING ANY GROUND OR AIRBORNE PHASE - Normal - Abnormal - Alternate - Emergency	Flight Deck Equipment			X		X	X	X	X	X
	Flap/Slats/Gear		X	X		X	X	X	X	X
	Powerplant		X	X		X	X	X	X	X
	Pressurization		X	X		X	X	X	X	X
	Pneumatic	X	X	X		X	X	X	X	X
	Air Conditioning	X	X	X		X	X	X	X	X
	Fuel and Oil	X	X	X		X	X	X	X	X
	Electrical	X	X	X		X	X	X	X	X
	Hydraulic	X	X	X		X	X	X	X	X
	Flight Controls		X	X		X	X	X	X	X
	Anti-Icing and Deicing		X	X		X	X	X	X	X

3-1249 PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES)—MULTIENGINE GENERAL PURPOSE AIRPLANES.

A. Required Maneuvers and Procedures. Training in the maneuvers and procedures Table 3-66, Flight Training PIC/SIC Training (All Training Categories)—Multiengine General Purpose Airplanes, must be conducted for satisfactory completion of each category of flight training. Those training events annotated with an “SEA” symbol are only required for those operators engaged in seaplane operations.

- 1) PICs must complete training in each training event in this table.
- 2) SICs must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary aircraft controls but should emphasize duties of the PM:

- Approach and landing with pitch mistrim,
- Approach and landing with 50 percent loss of power on one side,
- Approach and landing with flap/slat malfunction, and
- Steep turns.

B. Training Emphasis Considerations. A POI should ensure that the operator’s flight training emphasizes the appropriate areas for these categories of training:

- For initial new-hire training, emphasis should be on specific company procedures.
- For transition training, emphasis should be on the handling characteristics and the maneuvers and procedures pertinent to the specific aircraft type.
- For upgrade training, emphasis should be on the specific duties and responsibilities pertinent to the PIC position.
- For recurrent training, emphasis should be on new or revised maneuvers or procedures pertinent to line operations.

C. Part 135 RFT. RFT must be conducted periodically for both PICs and SICs, at least once every 12 months. Section 135.351(c) specifies that RFT for pilots must include at least “...flight training in the maneuvers or procedures in this subpart, except that satisfactory completion of the check required by § 135.293” (the competency check) “may be substituted for recurrent flight training.” The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate, for the operations authorized, and appropriate for the category, class, and type of aircraft involved. The IPC, as specified in § 135.293(c), may be substituted for the competency check. Additionally, there are no provisions in part 135 which allow RFT to substitute for required checks or tests. There are no training appendices in part 135 containing lists of the required maneuvers and procedures for flight training or checking. Training on the events in the applicable tables in this section, however, does meet the part 135 competency and IPC requirements and, therefore, the RFT requirements.

Table 3-66. Flight Training PIC/SIC Training (All Training Categories)—Multiengine General Purpose Airplanes

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
PREPARATION	Visual Inspection									X
	Pretaxi Procedures		X	X		X	X	X	X	X
	Performance Limitations	X	X	X		X	X	X	X	X
SURFACE OPERATION	Flight Deck Management			X		X	X	X	X	X
	Securing Cargo									X
	Starting	X	X	X		X	X	X	X	X
	Taxi	X				X	X	X	X	X
	[] Powerback Taxi						X	X	X	X
	Steep Turns SEA									X
	Sailing SEA									X
	Pretakeoff Checks			X		X	X	X	X	X
TAKEOFF	Normal M						X	X	X	X
	Crosswind						X	X	X	X
	Short/Soft Field M								X	X
	Glassy/Rough Water SEA								X	X
	VMC Demonstration and Recovery					X	X	X	X	X

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	Powerplant Failure Below VMC (Rejected)			X		X	X	X	X	X
	Powerplant Failure After VMC					X	X	X	X	X
	[] Lower than Standard Minimum					X	X	X	X	X
CLIMB	Normal			X		X	X	X	X	X
	One Engine Inoperative #					X	X	X	X	X
EN ROUTE	Steep Turns			X		X	X	X	X	X
	Stall Prevention (Approaches to Stalls): M (Takeoff Config.) (En Route Config.) (Landing Config.) X* Only if stall warning/stall avoidance provides first stall indication			X*		X	X	X	X	X
	Powerplant Shutdown and Restart			X		X	X	X	X	X
	Slow Speed Handling Characteristics			X		X	X	X	X	X
	With a Powerplant Inoperative			X		X	X	X	X	X
DESCENT	Normal			X		X	X	X	X	X
	Maximum Rate			X		X	X	X	X	X
APPROACHES	VFR Procedures M Normal						X	X	X	X
	With 50 percent Loss of Power on One side PIC M					X	X	X	X	X
	With Slat/Flap Malfunction PIC M					X	X	X	X	X
	IFR Precision Approaches M ILS/Normal						X	X	X	X
	ILS/One-Engine Inoperative						X	X	X	X
	[] PAR/Normal						X	X	X	X
	[] PAR/One-Engine Inoperative #						X	X	X	X
	IFR Nonprecision Approaches M NDB/Normal			A*		X	X	X	X	X
VOR/Normal A* At least one Nonprecision approach must be accomplished in a FFS or the aircraft			A*		X	X	X	X	X	

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	Nonprecision Approach One-Engine Inoperative #					X	X	X	X	X
	[] LOC Backcourse Procedures		A	X		X	X	X	X	X
	[] SDF/LDA Procedures		A	X		X	X	X	X	X
	[] ASR Procedures		A	X		X	X	X	X	X
	[] RNAV Procedures		A	X		X	X	X	X	X
	[] LORAN C Procedures		A	X		X	X	X	X	X
	[] Circling Approach M (FFS must be qualified for training/checking on the circling maneuver)							X	X	X
	Missing Approaches M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	NOTE: At least one MAP must be a complete approved procedure.									
	With Powerplant Failure					X	X	X	X	X
LANDINGS	Normal							X	X	X
	With Pitch Mistrim PIC					X	X	X	X	X
	From Precision Instrument Approach					X	X	X	X	X
	From Precision Instrument Approach With Most Critical Engine Inoperative					X	X	X	X	X
	With 50 percent Loss of Power on One Side PIC					X	X	X	X	X
	Crosswind							X	X	X
	Short/Soft Field							X	X	X
	Glassy/Rough Water SEA							X	X	X
With Manual Reversion/Degraded Control Augmentation					X	X	X	X	X	
AFTER LANDING	Docking, Mooring and Ramping SEA								X	X
	Parking #						X	X	X	X
	Emergency Evacuation #			X		X	X	X	X	X
OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE	Holding			X		X	X	X	X	X
	Ice Accumulation on Airframe #					X	X	X	X	X
	Air Hazard Avoidance #					A	A	X	X	X
	Wind Shear/Microburst #					X	X	X	X	
	Pneumatic/Pressurization	A	A	X		X	X	X	X	X

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Normal - Abnormal - Alternate	Air Conditioning	A	A	X		X	X	X	X	X
	Fuel and Oil	A	A	X		X	X	X	X	X
	Electrical	A	A	X		X	X	X	X	X
	Hydraulic	A		X		X	X	X	X	X
	Flight Controls	A		X		X	X	X	X	X
	Anti-Icing and Deicing Systems			X		X	X	X	X	X
	Autopilot		A	X		X	X	X	X	X
	Flight Management Guidance Systems and/or Automatic or Other Approach and Landing Aids		A	X		X	X	X	X	X
	Stall Warning Devices, Stall Avoidance Devices, and Stability Augmentation Systems			X		X	X	X	X	X
	Airborne Weather Radar	A	A	X		X	X	X	X	X
	Flight Instrument System Malfunction		A	X		X	X	X	X	X
	Communications Equipment	A	A	X		X	X	X	X	X
	Navigation Systems	A	A	X		X	X	X	X	X
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Emergency	Aircraft Fires	A	A	X		X	X	X	X	X
	Smoke Control	A	A	X		X	X	X	X	X
	Powerplant Failure/Fire	A	A	X		X	X	X	X	X
	Electrical, Hydraulic, Pneumatic Systems	A	A	X		X	X	X	X	X
	Flight Control Systems Malfunction	A	A	X		X	X	X	X	X
	Landing Gear and Flap Systems Malfunction	A	A	X		X	X	X	X	X
	Air Hazard Avoidance #					X	X	X	X	X
	Wind Shear/Microburst M					X	X	X	X	X

3-1250 PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES)—SINGLE-ENGINE AIRPLANES.

A. Required Maneuvers and Procedures. Training in the maneuvers and procedures in Table 3-67, Flight Training PIC/SIC Flight Training (All Training Categories)—Single-Engine Airplanes, must be conducted for satisfactory completion of each category of flight training. Those training events annotated with an “SEA” symbol are only required for operators engaged in seaplane operations.

- 1) PICs must complete training in each training event in this table.

2) SICs must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary aircraft controls but should emphasize duties of the PM:

- Approach and landing with pitch mistrim, and
- Steep turns.

B. Training Emphasis Considerations. A POI should ensure that the operator’s flight training emphasizes the appropriate areas for these categories of training:

- For initial new-hire training, emphasis should be on specific company procedures;
- For transition training, emphasis should be on the handling characteristics and the maneuvers and procedures pertinent to the specific aircraft type;
- For upgrade training, emphasis should be on the specific duties and responsibilities pertinent to the PIC position; and
- For recurrent training, emphasis should be on new or required maneuvers or procedures pertinent to line operations.

C. Part 135 RFT. RFT must be conducted periodically for both PICs and SICs, at least once every 12 months. Section 135.351(c) specifies that RFT for pilots must include at least “...flight training in the maneuvers or procedures in this subpart, except that satisfactory completion of the check required by § 135.293” (the competency check) “may be substituted for recurrent flight training.” The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate, for the operations authorized, and appropriate to the category, class, and type of aircraft involved. The IPC, as specified in § 135.293(c), may be substituted for the competency check. Additionally, there are no provisions in part 135 which allow RFT to substitute for required checks or tests. There are no training appendices in part 135 containing lists of the required maneuvers and procedures for flight training or checking. Training on the events in the applicable tables in this section, however, does meet the part 135 competency and IPC requirements and, therefore, the RFT requirements.

**Table 3-67. Flight Training PIC/SIC Flight Training (All Training Categories)—
Single-Engine Airplanes**

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
PREPARATION	Visual Inspection									X
	Pretaxi Procedures		X	X		X	X	X	X	X
	Performance Limitations	X	X	X		X	X	X	X	X
SURFACE OPERATION	Flight Deck Management			X		X	X	X	X	X
	Securing Cargo									X
	Starting	X	X	X		X	X	X	X	X
	Taxi					X	X	X	X	X
	[] Powerback Taxi						X	X	X	X

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	Steep Turns SEA									X
	Sailing SEA									X
	Pretakeoff Checks			X		X	X	X	X	X
TAKEOFF	Normal M						X	X	X	X
	Crosswind						X	X	X	X
	Rejected M			X		X	X	X	X	X
	Short/Soft Field M								X	X
	Glassy/Rough Water SEA								X	X
CLIMB	Normal			X		X	X	X	X	X
	One-engine Inoperative #					X	X	X	X	X
EN ROUTE	Steep Turns			X		X	X	X	X	X
	Stall Prevention (Approaches to Stalls): M (Takeoff Config.) (En Route Config.) (Landing Config.) X* Only if stall warning/stall avoidance provides first stall indication			X*		X	X	X	X	X
	Powerplant Shutdown and Restart			X		X	X	X	X	
	Slow Speed Handling Characteristics			X		X	X	X	X	X
DESCENT	Normal			X		X	X	X	X	X
	Maximum Rate			X		X	X	X	X	X
APPROACHES	VFR Procedures M Normal Approach						X	X	X	X
	Accuracy						X	X	X	X
	IFR Precision Approaches M ILS						X	X	X	X
	[] PAR						X	X	X	X
	IFR Nonprecision Approaches M NDB			A*		X	X	X	X	X
	VOR/Normal A* At least one Nonprecision approach must be accomplished in a FFS or the aircraft			A*		X	X	X	X	X
	[] LOC Backcourse Procedures		A	X		X	X	X	X	X
	[] SDF/LDA Procedures		A	X		X	X	X	X	X
	[] TACAN Procedures		A	X		X	X	X	X	X
	[] ASR Procedures		A	X		X	X	X	X	X
[] RNAV Procedures		A	X		X	X	X	X	X	

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	<input type="checkbox"/> LORAN C Procedures		A	X		X	X	X	X	X
	<input type="checkbox"/> Circling Approach M (FFS must be qualified for training/checking on the circling maneuver)							X	X	X
	MISSED APPROACHES M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	NOTE: At least one MAP must be a complete approved procedure.									
LANDINGS	Normal							X	X	X
	Spot							X	X	X
	With Simulated Powerplant Failure							X	X	X
	With Pitch Mistrim PIC					X	X	X	X	X
	From Precision Instrument Approach							X	X	X
	Crosswind							X	X	X
	Short/Soft Field								X	X
	Glassy/Rough Water SEA								X	X
AFTER LANDING	Docking, Mooring and Ramping SEA								X	X
	Parking #						X	X	X	X
	Emergency Evacuation #			X		X	X	X	X	X
OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE	Holding			X		X	X	X	X	X
	Ice Accumulation on Airframe #					X	X	X	X	X
	Air Hazard Avoidance #					X	X	X	X	X
	Wind Shear/Microburst #					X	X	X	X	
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Normal - Abnormal - Alternate	Pneumatic/Pressurization	A	A	X		X	X	X	X	X
	Air Conditioning	A	A	X		X	X	X	X	X
	Fuel and Oil	A	A	X		X	X	X	X	X
	Electrical	A	A	X		X	X	X	X	X
	Hydraulic	A	A	X		X	X	X	X	X
	Flight Controls	A	A	X		X	X	X	X	X
	Anti-Icing and Deicing Systems			X		X	X	X	X	X
	Autopilot		A	X		X	X	X	X	X
Flight Management Guidance Systems and/or Automatic or Other Approach and Landing Aids		A	X		X	X	X	X	X	

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	Stall Warning Devices, Stall Avoidance Devices			X		X	X	X	X	X
	Airborne Weather Radar	A	A	X		X	X	X	X	X
	Flight Instrument System Malfunction		A	X		X	X	X	X	X
	Communications Equipment	A	A	X		X	X	X	X	X
	Navigation Systems	A	A	X		X	X	X	X	X
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Emergency	Aircraft Fires	A	A	X		X	X	X	X	X
	Smoke Control	A	A	X		X	X	X	X	X
	Powerplant Malfunctions	A	A	X		X	X	X	X	X
	Electrical, Hydraulic, Pneumatic Systems	A	A	X		X	X	X	X	X
	Flight Control Systems Malfunction	A	A	X		X	X	X	X	X
	Landing Gear and Flap Systems Malfunction	A	A	X		X	X	X	X	X

3-1251 PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES)— HELICOPTERS.

A. Required Maneuvers and Procedures. Training in the maneuvers and procedures in Table 3-68 must be conducted for satisfactory completion of each category of flight training. Those training events annotated with an “SEA” symbol are required only for an operator engaged in water operations.

- 1) PICs must complete training in each training event in this table.
- 2) SICs must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary aircraft controls but should emphasize the duties of the PM:
 - Category “A” vertical and/or edge takeoffs and landings, and
 - Approach and landing with anti-torque malfunctions.

NOTE: The levels of FSTDs to be used for the training events listed in Table 3-68 are currently under development.

B. Training Emphasis Considerations. A POI should ensure that the operator’s flight training emphasizes the appropriate areas for these categories of training:

- For initial new-hire training, emphasis should be on specific company procedures;
- For transition training, emphasis should be on the handling characteristics and the maneuvers and procedures pertinent to the specific aircraft type;

- For upgrade training, emphasis should be on the specific duties and responsibilities pertinent to the PIC position;
- For recurrent training, emphasis should be on new or revised maneuvers or procedures pertinent to line operations;
- For all helicopter pilot training programs, emphasis should be applied to avoidance and recovery from inadvertent instrument meteorological conditions (IIMC) encounters, the loss of adequate surface or horizontal reference in visual flight rules (VFR) conditions, the application of the operator's controlled flight into terrain (CFIT) avoidance program, and avoidance of whiteout, brownout, and flat-light; and
- For all training programs, emphasis on operations in various environments, such as mountainous areas, deserts, overwater, and in desolate areas.

C. Part 135 RFT. RFT must be conducted periodically for both PICs and SICs, at least once every 12 months. Section 135.351(c) specifies that RFT for pilots must include at least "...flight training in the maneuvers or procedures in this subpart, except that satisfactory completion of the check required by § 135.293" (the competency check) "may be substituted for recurrent flight training." The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate, for the operations authorized, and appropriate to the category, class, and type of aircraft involved. The IPC, as specified in § 135.293(c), may be substituted for the competency check. Additionally, there are no provisions in part 135 listing the required maneuvers and procedures for flight training or checking. Training on the events in the applicable tables in this section, however, does meet the part 135 competency and IPC requirements and, therefore, the RFT requirements.

D. Helicopter FSTD Usage. The criteria for the use of helicopter FSTDs are currently under development. Several helicopter FSTDs have been individually approved using interim criteria. These FSTDs may continue to be used in part 135 training and checking activities in accordance with specific approvals currently in effect.

3-1252 INADVERTENT INSTRUMENT METEOROLOGICAL CONDITIONS (IIMC) TRAINING AND CHECKING. All helicopter pilots operating under part 135 must be trained and checked on procedures for the avoidance and recovery from IIMC. Inspectors will evaluate the certificate holder's operational procedures for recovery from IIMC and ensure these procedures are incorporated into the certificate holder's initial and recurrent training program(s). Training and checking should emphasize the identification of circumstances likely to lead to IIMC encounters and encourage the pilot to abandon a planned flight path or route to avoid continued VFR flight into deteriorating conditions.

A. General. After April 22, 2015, each competency check given in a rotorcraft must include a demonstration of the pilot's ability to maneuver the rotorcraft solely by reference to instruments. The check must determine the pilot's ability to safely maneuver the rotorcraft into VMC following an encounter with IIMC. For competency checks in non-IFR-certified rotorcraft, the pilot must perform such maneuvers as are appropriate to the rotorcraft's installed equipment, the certificate holder's OpSpecs, and the operating environment.

B. Approving Methods. POIs should approve methods appropriate to the aircraft, equipment, and facilities available. POIs should consider the operator's hiring standards and practices (such as requiring a helicopter instrument rating for VFR pilots) in evaluating training and checking modules. POIs shall ensure that an operator's pilots accomplish these training and checking events in the aircraft in which the pilot will be qualified for revenue operations (or in an appropriately equipped FSTD). The events should reflect a realistic course of action the pilot might take to escape from an encounter with IIMC.

C. General Operations Manual (GOM). In addition to training, the operator should establish a loss of control (LOC) IIMC avoidance policy that supports the emergency authority of the pilot to divert, make a precautionary landing, or make an emergency transition to IFR.

1) The Inspector should evaluate the operator's LOC/IIMC avoidance plan of action as a component of the GOM. This plan should describe pilot, medical personnel, and Operations Control Specialist (OCS) duties, responsibilities, and authorities in the avoidance and recovery from IIMC encounters. This plan should be adaptable to each facility from which the certificate holder conducts operations. The plan of action should include a checklist for emergency IFR transitions and integrate all resources to support the pilot's decisionmaking and performance of the appropriate avoidance and recovery actions. For example, though it is expected that the pilot is fully trained and qualified to maneuver the helicopter while managing communications and navigation tasks, the plan may include the optional inclusion of onboard medical personnel assistance to the pilot and as applicable, OCS or Communications Specialist assistance during an IIMC emergency situation.

2) Medical personnel may assist by reading frequencies, courses, and altitudes for the pilot, allowing a higher level of pilot concentration on controlling the aircraft during the VFR/IFR transition. This assistance during an emergency should not interfere with patient care. In this case, the operator should provide appropriate training and aeronautical information reference materials for the medical personnel.

D. IIMC Training. All pilots should be trained in basic instrument flying skills to recover from IIMC, including those authorized to conduct IFR operations under part H OpSpecs. Training should be directed at unplanned transitions from VFR flight to emergency IFR operations, as this involves a different set of pilot actions, including navigation and operational procedures, interaction with air traffic control (ATC), and CRM. IIMC training should include visual cues and unusual conditions, which should prompt pilot action to avoid an IIMC encounter and pilot reaction plans to divert, land, or initiate an emergency transition to IFR as appropriate to the situation.

E. Non-IFR-Certified Aircraft. In the absence of an IFR-certified helicopter, training and checking should include maneuvers appropriate to the installed equipment, the certificate holder's OpSpecs, and the operating environment. Training and checking for all pilots, whether helicopter instrument rated or not, should include attitude instrument flying, recovery from unusual attitudes, and ATC communications. The objective is for non-instrument rated pilots to demonstrate their ability to be able to recover to VMC.

3-1253 RECOGNIZING AND AVOIDING FLAT-LIGHT, WHITEOUT, AND BROWNOUT CONDITIONS. After April 22, 2015, rotorcraft pilots are required by § 135.293(a)(9) to satisfactorily complete training and an oral or written test for procedures for aircraft handling in flat-light, whiteout, and brownout conditions, including methods for recognizing and avoiding those conditions. Inspectors should ensure this training and testing is incorporated in the operator’s approved training program.

Table 3-68. Flight Training PIC/SIC Flight Training (All Training Categories)—Helicopter (under development)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
PREPARATION	Visual Inspection									
	Before-Taxi Procedures									
	Performance Limitations									
SURFACE OPERATION	Starting									
	Rotor Engagement									
	Rotor Engagement on Water SEA									
	Taxiing									
	Water Taxiing SEA									
	Lift-to-Hover IGE/OGE M									
	Hover Turns IGE/OGE									
	Sideward/Rearward Hovering									
	Slope Operations									
	Liftoff									
	Landing									
	Taxiing									
TAKEOFF	Normal M									
	Instrument									
	Obstacle Clearance									
	Running (High Altitude)									
	Category “A” M									
	Category “A” M With Powerplant Failure Before CDP									
	Category “A” M With Powerplant Failure After CDP CLIMB									
	Rejected Takeoff M									
CLIMB	Normal									
	Best Rate									
	Best Angle									
EN ROUTE	Medium-Banked Turns									
	Powerplant Shutdown and Restart									

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	Low-Speed Characteristics									
	High-Speed Handling Characteristics									
	High-Speed Handling Characteristics									
DESCENT	Normal									
	Maximum Rate									
	Autorotative Glide									
APPROACHES	VFR Procedures M Normal									
	Obstacle Clearance									
	High Altitude									
	Elevated Landing Site									
	With Degraded Control Augmentation									
	Balked Landing M									
	Brownout/Whiteout/Flat Light Operations									
	IFR Precision Approaches M ILS/Normal									
	ILS/One Engine Inoperative [] PAR/Normal									
	[] PAR/One Engine Inoperative #									
	IFR Nonprecision Approaches M NDB/Normal									
	VOR/Normal									
	[] LOC Backcourse Procedures									
	[] SDF/LDA Procedures									
	[] ASR Procedures									
	[] RNAV Procedures									
	[] LORAN C Procedures									
	[] Circling Approach M (FFS must be qualified for training/checking on the circling maneuver)									
	Missing Approaches M From Precision Approach									
	From Nonprecision Approach									

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	NOTE: At least one MAP must be a complete approved procedure.									
	With Powerplant Failure									
LANDINGS	Normal									
	Normal to-the-water SEA									
	[] Category "A"									
	[] Category "A" With Powerplant Failure after LDP									
	Crosswind									
	From Precision Instrument Approach									
	From a Precision Approach With at Least 50 percent Power Deficiency									
	With Degraded Control Augmentation									
AFTER LANDING	Taxi									
	Parking #									
	Stopping the Rotors									
	Emergency Evacuation #									
UNPREPARED SITE OPERATIONS	Confined Areas									
	Pinnacles									
	Ridgelines									
	Water Sites SEA									
OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE	Recovery from IIMC									
	Holding									
	Ice Accumulation on Airframe #									
	Air Hazard Avoidance #									
	Wind Shear/Microburst #									
SYSTEMS PROCEDURES TRAINING DURING ANY PHASE - Normal - Abnormal - Alternate	Pneumatic/Pressurization									
	Air Conditioning									
	Fuel and Oil									
	Electric									
	Hydraulic									
	Flight Controls									
	Anti-Icing and Deicing Systems									
	Autopilot									
	Flight Management Guidance Systems									
	Automatic or Other Approach and Landing Aids									

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FULL FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
	Loss of Anti-Torque Effectiveness M									
	Airborne Weather Radar									
	Flight Instrument System Malfunction									
	Communications Equipment									
	Navigation Systems									
SYSTEMS PROCEDURES TRAINING DURING ANY AIRBORNE PHASE - Emergency	Aircraft Fires									
	Smoke Control									
	Powerplant Malfunctions									
	Electrical, Hydraulic, Pneumatic Systems									
	Flight Control Systems Malfunction									
	Landing Gear Malfunction									
	Anti-Torque Failure M									
	Settling-with-Power									
NIGHT VISION GOGGLE (NVG)	NVG Operational Checks									
	NVG Failure									
	Transitions: Aided/Unaided									
ADDITIONAL CONSIDERATIONS	Inadvertent IMC									
	Unusual Attitude Recovery									
	Ground Hazard Recognition									
	Brownout/Whiteout/Flat-Light Operations									
	External Light Techniques									
	Scanning Techniques									

RESERVED. Paragraphs 3-1254 through 3-1270.