

VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 54 PART 142 TRAINING CENTERS

Section 6 Part 142 Training Centers: Evaluate Training Programs, Curricula, Flight Training Equipment, and Recordkeeping Requirements

3-4433 GENERAL. The information in this section provides guidance for the approval of a center's training program and associated curricula/courses. Regulatory requirements demand sufficient content and detail to enable a training center to meet the standards required to ensure the highest level of flight training is achieved. The successful development of program curricula and courses forms the basis of each center's certificate. The successful evaluation of the curricula, syllabi, courseware, and flight training equipment (FTE) is critical to the success of the program.

3-4434 COMPONENTS OF A TRAINING PROGRAM. A training program consists of all of the curricula, syllabi, supporting courseware and materials, facilities, FTE, recordkeeping, and personnel necessary to accomplish a specific training objective(s) (e.g., a Boeing B-737-200 training program). A training program may include core curricula, specialty curricula, or both. Other curricula may be used to augment the training covered under a core or specialty curriculum. The technical evaluation of components of a training program must involve the assistance of a Federal Aviation Administration (FAA) inspector qualified in the particular aircraft. Should the Training Center Program Manager (TCPM) be unqualified in the aircraft or lack the expertise to conduct a review of this type, support should be requested from other national resource specialists.

Figure 3-147B. Components of a Training Program



A. Curricula Submitted for Approval. The part 142 training center should submit curricula for approval in a format that describes the content of the proposed training in sufficient detail to enable a clear understanding of subject matter and events to be accomplished. The content of each curriculum or course segment is outlined by listing the main subject areas. Each subject area contains individual training modules for each topic to be covered.

Figure 3-147C. Sample Curriculum Format

Curriculum/ Course	⇒ Initial Pilot-in-Command (PIC)—Gulf Stream 550 Type Rating				
Modules/ Elements	⇒ G-550 Initial System Training	General Operational Subjects	FMS training	G-550 Differences	G-550 PIC Initial Full Flight Simulator Flight Training

NOTE: Appropriate guidelines for the format and content of a curriculum, segments, modules, events, and elements may be found in Volume 3, Chapter 19, Training Programs and Airman Qualifications.

B. Title 14 of the Code of Federal Regulations (14 CFR) Part 142 Approved Curricula. Training center curricula that are approved in accordance with part 142 are divided into two basic types: core (airman certification) or specialty (other regulatory training requirements).

1) A training center may also develop a third type of curriculum; that is, a curriculum that does not satisfy any specific requirement of 14 CFR parts 61 and 63. These curricula describe training that may be used to augment or supplement other required training (such as training in international flight procedures). Should a training center choose to seek approval for such a curriculum, it may do so under the provisions of part 142, § 142.81. As a prerequisite for approval, such a curriculum should include a statement saying that no requirements of part 61 are satisfied by its completion; however, it is acceptable to reference an advisory circular (AC) or other guidance around which the curriculum has been developed.

2) Curricula other than those listed above, which are not designed to satisfy any requirement of 14 CFR, and for which the training center has not chosen to seek approval pursuant to § 142.81 do not require approval under part 142 and do not generate a surveillance requirement for the FAA.

C. General Characteristics of a Curriculum.

1) Each approved curriculum must be supported by a revision system that includes:

- Sufficient detail to evaluate the proposed revision, including substantiation for the proposed revision and any associated instructor training and qualification requirements;
- Margin side-bars that mark changed areas; and
- The revision number and date on each revised page.

NOTE: Except when required for safety reasons, revisions should be submitted a minimum of 60 days before the expected implementation date.

2) The curricula must represent the FTE to be used by the training center. This must include training in systems (including installed equipment, modifications, and avionics), as well as maneuvers and procedures appropriate to the make, model, and series (M/M/S), and in some cases, serial number of the aircraft represented by the FTE. Training in other variations of the same make/model aircraft not represented by the flight training equipment should not be approved as part of a core curriculum. These variations, if requested, should be treated as differences and become a specialty curriculum or differences module as appropriate.

3) Curriculum terminology should be consistent with that used in FAA guidance documents and materials (part 142, practical test standards (PTS) or Airman Certification Standards (ACS), etc.). Use of terminology such as “as required,” “as applicable,” and other terms that indicate training in that topic is a variable is not acceptable for inclusion in training modules or elements.

4) Curricula must include an introduction that provides a general overview of the training to be accomplished and state a specific training objective. The objective should support the expected outcomes. Course objectives must identify the certification expected, what FTE will be used, as well as the regulatory requirements that will be met. The objective should indicate the specific aircraft variation(s) that will be covered. Differences training for variations within types or groups may be treated under a separate specialty curriculum.

5) The curricula must state the specific student prerequisites for entry into the curriculum. This should include specific flight experience (including currency), previous training, minimum pilot certification, and qualifications. Common errors include allowing an applicant with an airplane multiengine class rating that is limited to center-line thrust, to enroll in a 100 percent full flight simulator (FFS) course for a multiengine airplane type rating.

6) The curricula must specify in sufficient detail what ground training will be accomplished. The ground training segment of a curriculum that leads to airman certification or proficiency consists of training in general operational subjects, aircraft systems, and systems integration. Each module must list a sufficient number of elements to describe main topic areas to be covered within that module. Ground training must be predicated on the FTE to be used in the course. The curricula must indicate what criteria and standards will be used to determine satisfactory completion (e.g., completion of a written test on systems and procedures with a grade of 80 percent, which will be corrected to 100 percent).

NOTE: Ground training conducted under a curriculum leading to airman certification must be satisfactorily completed before the start of the associated flight training.

NOTE: The curriculum development guidelines in Volume 3, Chapter 19, Sections 1, 2, and 9, are the acceptable standards for training program development and should be followed to the maximum practical extent.

7) Part 142 does not specify programmed hours for flightcrew members; however, Table 3-52, Flightcrew Aircraft Ground Training Hours National Norms (Thresholds), in Volume 3, Chapter 19, Section 5, Flightcrew Aircraft Ground Training Curriculum Segments provides guidelines for training times that should be considered when evaluating a training center's curricula. When approving curriculum segments and their associated training hours as proposed by the training provider, TCPMs must consider the complexity of the operation and the specific aircraft M/M/S. For example, training hours for a complex operation may need to exceed national norms, while training hours below the national norms may be acceptable for a less complex type of operation. When granting approval of a core curriculum with training hours below the established threshold training hours, TCPMs must notify the Air Transportation Division (AFS-200), through the regional Flight Standards division (RFSD), that such initial approval has been granted. This notification is necessary for tracking and standardization purposes on a national basis. This notification may be sent by memo or email and should:

- a) Describe the reasons resulting in the grant of the curriculum's initial approval with fewer hours than the national norms or threshold hours;
- b) Include a copy of the initially approved aircraft ground training curriculum segment; and
- c) Include any additional supporting information provided by the operator.

NOTE: Briefing and/or debriefing times for flight or simulated flight sessions must not be considered part of the programmed instruction time to meet recommended national norms or threshold hours.

8) The curriculum must provide an outline of the flight training (maneuvers and procedures) and practice that will be accomplished during each flight training period. Flight training sessions/periods are referred to as training modules. Each module must be appropriate to the FTE being used and reflect the specific maneuvers or procedures to be accomplished during that training session/period. The curriculum must allow sufficient time for practice and review as well as provide the instructor sufficient opportunity to demonstrate the use of all equipment identified in the training session.

9) It is common for a particular maneuver to appear in multiple training sessions depending on the maneuver's complexity. The curriculum must indicate what standards will be used to determine student progress. If an aircraft is used, indicate only those events accomplished in the aircraft. Training in specific types of instrument approach procedures (IAP) must be identified for each session to ensure adequate training in all equipment, procedures, and techniques.

10) A curriculum that provides training, testing, or checking to accomplish certification or proficiency requirements of part 61 must include all of the appropriate PTS or ACS-required maneuvers. If the flight simulation training device (FSTD) is not qualified and approved to accomplish a particular maneuver, for example a circling approach, the student training record must reflect that the maneuver was not accomplished.

NOTE: PTS (or ACS) maneuvers that are not appropriate for a particular aircraft M/M/S as determined by the Aircraft Evaluation Group (AEG) need not be included in that aircraft's training/testing/checking modules.

11) Curricula may not include maneuvers or systems training in an area or event that the center does not have the courseware or FSTDs suitable for conducting the subject training. For example, Global Positioning System (GPS) approach training will not be approved if the center's FSTDs do not have an operable GPS installed.

12) The training, testing, and checking presented by the curricula must be specific to that M/M/S (serial number, if applicable), and variation of the aircraft represented by the FTE to be used by the center. Differences training between or among variations of the same type are not required of all students but if a specialty curriculum is developed to satisfy training requirements for different variations, it must identify how differences training will be accomplished. A center may address differences training by:

- Creating a separate specialty curriculum; or
- Adding one or more modules to the core curricula, and allow for those modules in the programmed hours.

NOTE: In some cases, a separate core or specialty curriculum may be necessary to describe the training for a variation of an aircraft type when the differences have been determined to be so significant that ground training, flight training, and checking are required. Some series of aircraft can be operated under the same type rating, but require a dedicated FFS to provide the training for that particular variation (e.g., L-25 vs. L-35, B-737-200 vs. B-737-800, etc.).

13) Curricula will also include qualification module(s) that state the basis and standards for satisfactory course completion and evaluation (testing/checking accomplished to what standard).

14) A detailed curriculum evaluation checklist has been developed to provide assistance with the evaluation of curricula involving airman certification or proficiency (part 61, §§ 61.58 and 61.157). Refer to the Air Carrier Training Systems and Voluntary Safety Programs Branch (AFS-280) Web site at http://www.faa.gov/pilots/training/part_142/.

3-4435 FLIGHT TRAINING EQUIPMENT (FTE). Training centers may use a variety of FTEs in their approved curricula, including FSTDs, aircraft, and mockups. However, each core curriculum must be supported by an advanced flight training device (FTD) (Level 6 or 7) or FFS (Levels A through D), which must be used to the maximum extent possible for all associated training and testing/checking. Approval of aircraft as FTE is discussed in subparagraph 3-4435H.

A. Qualifying Flight Simulation Training Devices (FSTD). The National Simulator Program (AFS-205) must qualify the FSTDs before the TCPM can approve them for training, checking, or testing in a training center's program. The NSP will evaluate and assign the appropriate training device "level" to each FSTD. The training device level may be used to determine the training maneuvers that are permitted to be accomplished in the FSTD.

B. Evaluating and Approving FSTDs. Following the NSP qualification of a specific FSTD, the TCPM must evaluate and approve the device for use in the center's approved training program. This approval will include the specific curricula, maneuvers, procedures, and/or crewmember functions permitted to be performed in the FSTD. Part 142 requires the training center's FSTDs to be appropriate for and adequate to support the curricula. When describing FSTDs, the curricula must use terminology consistent with the level of qualification authorized for the particular device.

NOTE: Each approved FSTD must be listed in the center's training specification (TSpec) A015, Flight Simulators Authorization or A017, Flight Training Device Authorization, as applicable, by the TCPM along with any restrictions or limitations for each specific FSTD.

C. Evaluating and Approving Full Flight Simulators. FFSs are qualified by the NSP as Level A, B, C, or D. FFSs are approved for use by the TCPM. FFSs approved for use in training, checking, and testing under approved curricula must represent the M/M/S, the variation, and in some cases the serial number range of the aircraft being trained/tested/checked. The FFS must be equipped/modified to include mandatory aircraft modifications. Each FFS must meet and maintain the standards established in 14 CFR part 60.

1) Some curriculum modules or elements require a specific visual scene to accomplish a particular training event. These events may require an accurate representation of the airport, its lighting, the surrounding environment, etc. For example:

- Special airports and approaches,
- Approach and landing using visual (ground or airport) references,
- Surface Movement Guidance and Control System (SMGCS) training,

- Line-Oriented Flight Training (LOFT),
- Circling approaches, or
- Other special circumstances (e.g., Head Up Display (HUD), enhanced flight vision system (EFVS)).

2) With respect to the circling approach, the NSP evaluates and qualifies each FFS's ability to conduct a circling maneuver. However, the TCPM is responsible for evaluating and approving each proposed circling approach to be used for training, checking, or testing.

NOTE: Circling approaches approved for use in a part 142 training program must have a minimum of 90 degrees between the approach course and the landing runway heading.

a) Circling approach approval guidelines require:

1. The proposed airport scene must represent an accurate airport visual presentation of the airport layout and environment (a Class I or II visual model).

2. Only IAPs with a landing runway heading that is at least 90 degrees from the final approach course may be approved for use.

3. The approach must be flown at the appropriate approach speed by an airman qualified and current in the aircraft.

4. The aircraft should be at maximum landing weight and in the appropriate configuration.

5. Both night and day scenes (if day is available) must be evaluated with emphasis on airport and runway lighting.

6. Ceiling and visibility should be set at the minimums for the aircraft's circling approach category.

7. The FFS should be frozen in a position that represents the minimum descent altitude (MDA) and visibility minimums for the approach and observe the airport environment and lighting to determine the appropriateness of the FFS's visual cues.

8. Conduct a circling maneuver by constant visual reference to the airport environment and to the landing runway. Freeze the FFS periodically as the maneuver is being accomplished to observe whether the airport environment, ceiling, and visibility are maintained.

9. Conduct the approach and circling maneuver again in "real time" (without pause) to determine if the procedure requires any unusual maneuvering and if it is a viable approach and landing.

b) Provided the evaluation parameters are acceptable, the TCPM may approve the FFS for the specific runway and circling approach combinations that may be used in the center's training curricula via TSpec C075, Circling Approach Procedures.

3) In order for a training center to conduct training, testing, and checking with inoperative components, the center must develop an approved missing, malfunctioning, or inoperative (MMI) equipment policy. This policy outlines the training, checking, or testing that will not be permitted when a component is inoperative. Although similar in effect, the training center must not use an aircraft minimum equipment list (MEL) to determine the operational status of FFSs. The training center must develop as a part of its MMI policy a program for managing the repair of items, the use of the FFS in the degraded condition, and notification of the appropriate personnel of training restrictions. MMI management policies require the TCPM's approval in order to be used in an approved training curriculum.

D. Evaluating and Approving FTDs.

1) **Advanced FTDs.** Advanced FTDs are those FTDs qualified as Level 6 or 7. These devices must meet and maintain the qualification standards set forth in part 60 or the original qualification basis under which the original evaluation took place. The NSP is responsible for qualifying all advanced FTDs. Once the NSP qualifies the FTD, the TCPM may approve the FTD for training, testing, and checking in the training center's curricula for those maneuvers and/or procedures which may be accomplished in that level of FTD. The qualification and approval of an advanced FTD utilizes the same process as that used to approve an FFS.

2) **Approval of Level 6 or 7 FTDs.** The process for granting approval to a Level 6 or 7 FTD for use in training, checking, and testing is a two-step process.

a) The first step requires the NSP to evaluate and qualify the FTD. Upon completion of an evaluation, the NSP reports its findings (qualifications and limitations) and recommendations to the TCPM. The NSP report does not constitute approval of an FTD.

b) The second step in the process requires the TCPM to evaluate the NSP report and recommendations. Before approval, the TCPM must determine if the FTD is capable of performing each particular maneuver, procedure, or crewmember function required by the training center's curriculum and that the FTD represents the specific category and class of aircraft, type of aircraft, and particular variation within the type of aircraft addressed by the curriculum. Training, testing, and checking in aircraft not of the same model, series, and variation (including, in some cases, similar serial numbers), and not equipped the same as the FTD, must not be approved.

3) **Levels 4 and 5 FTDs.** These devices are qualified by the NSP in accordance with the qualification test guide submitted by the training center and accepted by the NSP. Each device must meet and maintain the qualification standards set forth in part 60 or the original qualification basis under which the original evaluation took place. These devices are limited in capability and may only be used to conduct those maneuvers identified in Appendix 1 of the appropriate PTS (or ACS) or other FAA guidance.

4) **Other Training Devices.** Devices formerly approved as level 1 through 3, Basic or Advanced Aviation Training Devices do not have defined technical standards and may not be used for any flight training credit within 14 CFR part 142 training center curricula.

E. Daily Inspection Requirements. Each FSTD must be given a functional preflight inspection each day before use (within the previous 24 hours). As part of the approval process, the TCPM must determine if the training center has a procedure for accomplishing and documenting required preflight inspections. Preflight inspections will be conducted in accordance with a predetermined list of inspection items that are acceptable to the TCPM and must include a method of logging deficiencies.

F. Operating Deficiencies. Regulations require that each FSTD has a method to log discrepancies and to advise instructors and evaluators that training must not be conducted for events that rely on the inoperative equipment. TCPMs must determine how the training center will identify, record, and resolve discrepancies. The training center must have in place a quality control (QC) system for discrepancies that provides instructors and evaluators with information on equipment status prior to the conduct of training, checking, or testing. The training center must be authorized via TSpec D096, Simulator Component Inoperative Guide Authorization, to use an FSTD with inoperative items.

G. Maintaining Qualifications. As part of the process for maintaining FSTD qualification, the NSP conducts periodic evaluations to ensure that the standards and performance of the FSTD are being maintained.

1) NSP evaluations may discover deficiencies that require a restriction to training, checking, or testing. The FSTD's sponsor and the TCPM will receive a list of all deficiencies. The TCPM will review all forwarded discrepancies and determine if the FSTD approval will need to be restricted until the training center resolves the discrepancies. TCPMs are responsible for the continued surveillance of the center's FSTDs and may place a limitation/restriction on training, checking, and testing at any time when deficiencies are noted.

2) The resolution of discrepancies is the responsibility of the sponsor. It is also the responsibility of the sponsor to advise the NSP and the TCPM in a timely manner that discrepancies, which led to any restrictions, have been repaired.

H. Aircraft Training.

1) Aircraft-only training programs or core curricula will not be authorized or approved for use by a training center certificated under part 142. It is AFS policy that when approving pilot training, checking, and testing under part 142, the primary form of flight training and testing/checking will be based on advanced FTDs (Level 6 and 7) or FFSs (Levels A through D). An aircraft may only be approved for use to supplement the training, testing, or checking that cannot be accomplished in an FSTD. Limited training and testing as permitted by the regulations may be accomplished in an aircraft to avoid issuing a pilot certificate with limitations (e.g., supervised operating experience). If an aircraft is approved for use, each training center must ensure that each aircraft is maintained and inspected in accordance with 14 CFR part 91 subpart E, an FAA-approved maintenance and inspection program, maintenance requirements approved by the country of registry, or air carrier-approved maintenance program. Each training center certificate holder must ensure that each aircraft that it proposes to use is equipped and capable of conducting all maneuvers and procedures required by the approved training curriculum.

2) Training centers that employ the use of an aircraft in their curricula as a means of completing required certification tests/checks, due to the use of FSTDs that do not qualify for 100 percent training/checking are not required to designate the aircraft as a training site. The aircraft and its location are considered a part of the principal or satellite center for the purposes of the regulation. The aircraft and/or the facility where the aircraft is located are not considered as an individual training site in the context of the rule, and are not required to be individually designated as a remote training site. The facility where an aircraft is located must, however, be suitable for pre- and post-briefings in the context of the regulation and must be appropriate for their intended purpose.

NOTE: The TCPM must approve use of aircraft for training, checking, or testing via TSpec A003, Aircraft Authorization.

I. Line-Operational Simulation (LOS). Refer to the current edition of AC 120-35, Flightcrew Member Line Operational Simulations: Line-Oriented Flight Training, Special Purpose Operational Training, Line Operational Evaluation.

1) **LOS.** LOS is a broad classification of activities that can be accomplished in an FFS to represent/duplicate/validate real-life flight situations. LOS is an integral and necessary part of any training curriculum that leads to issuance of an initial pilot certificate or the addition of the type rating to an existing certificate entirely in a Level C or D FFS. It is included in an airman certification curriculum as an alternative to flight time in the actual aircraft before qualification.

2) **Purpose of LOFT.** LOFT is a specific type of LOS. LOFT is designed to provide training and to transition the pilot from maneuver-oriented flight training (in which systems knowledge and operating skills are initially learned and practiced) to operational flying, which involves the application of skills and knowledge, crew coordination, and all other aspects of operating the aircraft in typical service. It provides the opportunity to observe crewmember actions, including areas such as Crew Resource Management (CRM), standard operating procedures (SOP), practical application of aircraft knowledge, and other training areas. LOFT provides a good opportunity to ensure training in the special-emphasis areas in the PTS (or ACS) and other FAA guidance is accomplished. It may also help determine if an airman requires additional training in a particular area.

a) A curriculum that is approved under part 142 and that accomplishes 100 percent of the required training and testing for initial airman certification or additional rating in a Level C or D FFS must contain LOFT. LOFT is not required if an actual aircraft is to be used for part of the practical test. LOFT is required on an annual basis for certain simulator instructors approved under part 142 and may be required to meet certain training and qualification requirements under 14 CFR part 121.

b) LOFT is *training*; it is a learning experience in which errors will be made. It is not a checking program in which errors are unacceptable. To ensure that maximum benefit from LOFT is obtained, the session must be scheduled after satisfactory completion of the maneuvers-based portion of the curriculum and prior to the certification test and constructed in accordance with the guidelines in AC 120-35.

3) Characteristics of LOFT.

a) **Training Time.** A LOFT session should use realistic routing between airports so as to encompass a normal FFS training period (e.g., if the normal period is 2 hours per crewmember, the LOFT in the simulator should be 2 hours for each crewmember exclusive of any breaks). Comprehensive briefing and debriefing are essential to effective LOFT exercises. However, the briefing and debriefing time is not part of the flight training time. The preflight briefing time should be used to brief the applicant and allow the crewmembers to perform preflight planning. The planned hours of instruction specified in a curriculum/syllabus must exclude LOFT except for the time the applicant is participating in the flight portion of the LOFT. Because PIC duties, functions, and capabilities are the emphasis during LOFT, only time spent at controls during LOFT is creditable toward programmed curriculum time. Any LOFT conducted after airman certification cannot be credited toward the curriculum times.

b) **Crew Qualifications.** Participating crewmembers must be fully qualified in accordance with the requirements of part 142 and the curriculum trained. They must be knowledgeable and proficient in all aspects of the training taught by the center as part of the curriculum, including checklists and SOP.

c) **Stated Objective.** The LOFT must state training objectives. Objectives may be broad in scope such as CRM, workload management, etc., and/or can have a specific objective such as a specific area of operation that has been determined to require special emphasis. The problems presented during the LOFT scenario can be further categorized into two types:

1. A simple problem that has no further impact on the conduct of the flight once diagnosed and corrected.

2. A complex problem that is not correctable and continues for the duration of the flight. LOFT requires the flight to continue to the ultimate outcome without stopping unless a crew action corrects the abnormal or emergency situation.

d) **Scenario Description.** LOFT scenarios must be highly structured and simulate flight from startup to shutdown in real time without any freeze, slow motion, or other activity that might not be accomplished in an actual flight in an aircraft. LOFT should include the following:

1. The flight should represent the type of operations reflected in the training being conducted (e.g., applicants being trained under a part 61 curriculum would accomplish LOFT that represents part 91 operations, not air carrier).

2. LOFT should reflect training in knowledge and skills required by the training center's approved core curricula—not those unique to a particular operator.

3. A complete scripted scenario simulating a total line operational environment must be developed by the training center. This would include a detailed script that includes all communications expected during the flight. Scenario communications should consider that the LOFT instructor is functionally not present in the FFS, but is available for communications as air traffic control (ATC), maintenance, flight service, ground operations, etc.

4. LOFT scenarios should be designed based on the stated objectives and desired outcomes and must include normal, abnormal, and emergency procedures. If two PIC students train together, LOFT may consist of two segments; one segment is conducted with normal procedures, and a separate segment incorporates abnormal and emergency procedures. Alternatively, different scenarios may be developed for each student to prevent repetition. If the curriculum permits a single PIC student to train, LOFT may consist of one flight segment that contains normal, abnormal, and emergency procedures.

4) Preflight Planning and Briefing. Comprehensive preflight planning appropriate to the type of operations conducted must be part of LOFT to enhance realism and represent actual aircraft operations. This will require a complete navigation and weather package, including Notices to Airmen (NOTAM) that may affect the flight. This should include en route, alternate, and departure airports as well as destination weather. Flight planning for the LOFT must consider fuel planning, Weight and Balance (W&B), and aircraft performance for a realistic route from departure to destination airport and support the stated objective(s) of the LOFT.

5) FFS Capability. LOFT may be conducted in Levels C and D FFS only. Dedicated airport scenes revised to represent current airport facilities, including runways/taxiways and navigation facilities must be used for realism (Class I or II visual models may be used, but generic airports are not acceptable.). Both en route and terminal navigation facilities must agree with navigation charts. LOFT should be developed for the M/M/S and modification status of the aircraft represented by the FFS.

6) Instructor Training. For LOFT to be a valuable training experience, instructors must be given specialized, specific instruction on the scenarios, the techniques for conducting LOFT, and the post-flight evaluation. The briefing/debriefing process is extremely important and requires special techniques and training for instructors. Instructor training programs must include documented training in these areas.

7) Approval. In accordance with FAA policy, all materials used to conduct LOFT as part of a part 142 curriculum will be evaluated and approved by the TCPM. Items such as instrument navigation charts (approach and en route) are not part of that approval since navigation procedures and airport facilities at an airport may change. Only current and accurate representation of airport and navigation facilities will be permitted during LOFT. The training center should periodically review and revise LOFT scenarios to prevent complacency or to accomplish a different objective.

3-4436 CREDITING DISTANCE LEARNING AS A COMPONENT OF GROUND TRAINING FOR FLIGHTCREW MEMBERS.

A. Background.

1) Advancements in electronic media have made the presentation of educational information secondhand to many of our educators. It has become the norm as opposed to the novelty it was just a few years ago. The aviation industry has been one of the largest benefactors of the revolution in digital presentations and interactive media. Systems now include modern training products, many of which are being effectively used in aviation courses conducted by accredited universities and in air carrier training programs approved by the FAA. Collectively, those products fall under a relatively new heading called “distance learning” or “distance education.” As the quality of those products continues to improve, the training/learning process stands to benefit even more.

2) Previous FAA guidance seemed to presume that traditional classroom training was inherently superior to other delivery methods. Besides the proven effectiveness of modern training products, distance learning affords a low-cost alternative to classroom ground training, an alternative that is timely and appropriate in today’s challenging economic environment. The use of new technology and alternative training methods can, and often does, improve the quality of training. However, alternative training must meet or exceed the training standards that it is intended to replace.

B. Applicability. A training center may apply for approval of distance learning methods for credit towards the completion of an approved core or specialty curriculum. This section applies only to flightcrew (pilots and flight engineers) training curricula/courses that have been approved by the center’s TCPM in accordance with the requirements of part 142 and/or Volume 3, Chapter 19, Section 2. Only cognitive or knowledge-based training is eligible for consideration under the provisions of this section.

C. Application.

1) **Qualifications Requirements for Distance Learning Submissions.** Training centers requesting the inclusion of distance learning must submit a curriculum module or element that qualifies for distance learning. All requests must include:

- a) Specific detail outlining the curriculum module or element(s) proposed.
- b) The center’s implementation and evaluation plan.
- c) All training and study materials, including clearly defined training objectives, phase test, final exams, and the validation testing and methodology proposed for verifying the knowledge gained through approved distance learning modules.

NOTE: Each student that participates in an approved curriculum/course of training that incorporates distance learning must complete a “validation exam,” in person and under the supervision of a qualified instructor or the Administrator, prior to the commencement of any flight or skill-related training at the center. Validation exam(s) are used to verify the knowledge objectives of distance learning module(s) and are in addition to any testing that may have been a part of the distance-learning module (see subparagraph 3-4436F2)c) for specific guidance on validation exam requirements).

2) Distance Learning Observation Prior to Approval. When a request is received from a center, the TCPM will observe the classroom module(s) for which the operator has requested a distance learning substitution. The purpose of this observation is to determine both the quality and quantity of the current training. Based on personal observations and review of the training materials, the TCPM will be better prepared to determine if the proposed distance learning will effectively duplicate the classroom training it has been designed to replace.

3) Accreditation. Distance learning will not be credited or considered for any required flight training modules/elements.

4) Scope of Creditability of Distance Learning. Distance learning credit is currently only available for knowledge and cognitive skill objectives. Distance learning creditability for psychomotor skills are not authorized by this section.

D. Limits on Creditability of Distance Learning. The FAA recognizes the great training potential of distance learning that is well planned and effectively validated. Ground training developed in accordance with an implementation plan (described in subparagraph 3-4436F) is subject to FAA approval. Distance learning may be as much 100 percent creditable toward the knowledge and cognitive skill training objectives defined in the ground training segment of a center’s approved curriculum(s).

NOTE: Initial implementation of distance learning by a training center should be approved cautiously. The substitution of ground training previously conducted in a classroom environment by the center in favor of distance learning modules should be integrated into the center’s curriculum in steps that are based on the center’s demonstrated ability to design and implement a distance learning system. It is recommended that distance learning modules be approved in phases or through an initial approval process followed by a trial period prior to issuing final approval. The initial versus final approval process for approving training programs is described in Volume 3, Chapter 19, Section 2.

E. Ground Training Media. The general nature and specific characteristics of training media used for distance learning vary widely. Examples include paper media, videotape, computer-based training (CBT), CDs, Web-based training, and virtual classroom. The media used should meet the requirements of the respective training objective. Validation of training effectiveness is one of the most important components of the implementation plan described in subparagraph 3-4436F.

F. Implementation Plan. Any proposal for ground training accomplished by distance learning must include a plan for startup, validation, operation, and maintenance of that training. This plan must include at least the following elements:

1) Startup. The startup phase must identify the knowledge and cognitive training objectives of the distance learning curriculum/course. Ground training objectives can be reduced to simple terms such as being able to:

- Recall,
- Recognize,
- Comprehend,
- Apply, and
- Identify the media used for ground training and testing.

2) Validation Strategy. Centers must develop a distance learning validation strategy that addresses the effectiveness of the ground training itself, and the learning accomplished by each person trained. Key features of a satisfactory validation strategy include:

a) Measuring the effectiveness of the ground training being conducted.

1. One validation method is to establish a performance baseline as a reference from which to measure the effectiveness of the ground training proposed. Baselines exist in most ongoing training programs. Examples of performance baselines include average ground training hours a trainee spends in learning a certain subject, average pass/fail rates for tests of ground training content, median scores, average pass/fail rates for flight checks, and many others. A performance baseline may be set by using an existing baseline or by referring to some other existing standard.

2. Validation depends upon maintaining the currency of the ground training to be conducted. A reliable method to do so is an essential part of a ground training proposal.

3. Tracking is a method for keeping test results and tracking overall student performance.

b) Learning accomplished by each person trained.

1. Testing should be designed to determine that training objectives are being met by each trainee.

2. A method should be developed to ensure integrity of tests, including integrity of test questions and test answers, and controlled access to tests and test results.

3. Tracking is a method for keeping test results and tracking each individual's performance.

c) Validation of the ground training objectives for distance learning will be accomplished through written exams. These exams must determine that the training proposed actually succeeds in meeting the performance objectives for the subject training.

NOTE: Validation exams should not be confused with the oral/written testing required by the appropriate PTS (or ACS). Validation exams are intended to authenticate the effectiveness of approved distance learning modules. They neither substitute for nor replace the required testing outlined in the appropriate PTS (or ACS).

1. The validation of a center's distance learning module(s) must be designed to evaluate the student's technical systems knowledge and cognitive skill (if appropriate). For example, a student's ability to list the items considered appropriate when accomplishing a takeoff and/or landing performance calculation is a measure of the student's technical knowledge. The appropriate use of those items in the calculation of a takeoff and/or landing performance problem is a measure of the student's cognitive skill.

2. Validation exam procedures must be submitted to the TCPM and designed to:

- Collect data related to the student's performance for the purposes of verifying the effectiveness of the training;
- Identify the specific questions taken and student responses to the validation exam; and
- Provide a basis for documenting that the distance learning module is as effective as the center's previously used classroom training module (if appropriate).

3. The minimum passing score for all distance learning validation exams is 80 percent on each training objective as outlined in subparagraph 3-4436F2)c)4.b. It is important to note that the minimum passing score must be achieved on each element or objective within the validation exam. Distance learning validation exams must be conducted in a proctored environment and observed by a qualified instructor or the Administrator. All students that meet or exceed the minimum grade of 80 percent will have their test corrected to 100 percent immediately following the exam. A score of less than 80 percent will require the student to be retrained and tested in the substandard areas by a qualified instructor in a proctored environment. Distance learning techniques or procedures may not be used to accomplish any required retraining resulting from an unsatisfactory exam. Subsequent reexamination will be accomplished using a random test generator to ensure the individual is not subjected to the same test that was originally taken. All training and testing must be satisfactorily accomplished before the student may continue their training course.

4. Integrity of Test Questions.

a. A library of questions should be developed that thoroughly cover the training objectives.

b. Multiple questions must be developed for each training objective. A question bank that includes at least five questions at the element level for each subject within the training module should be developed whenever practical.

NOTE: An element is a subgroup of related content within a training module. It is the fourth level of curriculum detail: curriculum, curriculum segment, training module, and element. For example, "Hydraulic System" is one training module; the yellow system, the green system, and the standby system are elements. In this example, the center's question bank would contain at least 15 questions relating to the hydraulic system (i.e., five for the yellow system, five for the green system, and five for the standby system).

c. Tests must be generated by random selection of questions from the library, so that no two tests are alike. This uniqueness does not refer to merely switching the order of the answers to a particular question without changing the question itself. Random answers to the same question do not qualify the question as being different for the purposes of this requirement.

d. Test questions must be reviewed as often as necessary to assure their relevancy, and to incorporate new or changed material. The center must have a quality procedure in place to ensure currency of their question banks.

e. Trainers must develop measures by which the identity of a person taking the test and the integrity of test answers may be confirmed. Printed or electronic test answers must not be able to be reproduced and distributed among trainees so as to beat the test.

d) The operation and maintenance of the distance learning approval includes the quality control procedures for the collection, protection, and analysis of data for tracking ground training effectiveness; also, a strategy for equipment upgrade, program update, and program adjustments driven by data and feedback from trainers and trainees.

G. Interactivity. Training centers must provide for interactivity between trainees and authorized ground instructors, and between the trainees themselves when practical.

1) When in the Field. In particular, a trainee should have ready access to an authorized ground instructor during normal business hours to resolve questions encountered during distance learning and associated testing.

2) When at a Centralized Training Location. Before flight training, trainees should be convened in a proctored classroom setting with an authorized ground instructor to resolve any remaining issues arising during distance learning. This interactivity is particularly beneficial in respect to the standardization of trainees enrolled in the same curriculum/course.

3-4437 COURSEWARE.

A. Definition. Courseware is the instructional material developed for each curriculum. It consists of lesson plans, instructor guides, computer-based training, audiovisual materials, training manuals, workbooks, aircraft operating manual(s), checklists, handouts, and any other materials used to support the training curriculum. Courseware must accurately represent and support the proposed training curriculum.

B. Evaluation. All courseware used to accomplish training must be evaluated by the TCPM as an integral part of the overall training program. When reviewing courseware, the TCPM should not accept the use of computerized and tabulated performance figures, proprietary W&B data, MELs that require a call to a proprietary maintenance base, and use of a dispatch service that may not be available to the student upon completion of training at the training center.

C. Acceptable and Unacceptable Courseware. Courseware must be acceptable to the FAA prior to and during the time curriculum approval is in effect, and must be identified (revision status) in a manner that ensures that only current materials are used to accomplish training. The training center must present courseware (including revisions) to the TCPM before use for review and approval. The TCPM must notify the training center in writing of any courseware that is determined to be unacceptable. Courseware is subject to the revision provisions of § 142.37(e) and (f).

D. Pictorial Aircraft Preflight Inspection Courseware.

1) The preferred method to accomplish aircraft preflight inspection training, testing, and checking is to use an actual aircraft. In situations when an aircraft is not available, a training center must have approved pictorial courseware for each curriculum to conduct training, checking, or testing. In situations when an aircraft is used to complete any training, checking, or testing, the actual aircraft must be used.

2) The TCPM must approve pictorial courseware for preflight training, checking, and testing. A review of the content must be accomplished with the assistance of an FAA inspector qualified in the aircraft.

3) In addition to Exemption 4901, which is specific to flight engineer certification requirements for pictorials, the following guidance for pictorial courseware will apply:

a) The strategies for training are different from the strategies for checking and testing when using pictorial courseware. The optimum training results may be achieved through the use of video, interactive computer-based instruction, and pictorial displays of the M/M/S of the aircraft represented by the FTE being used. To allow for positive learning transfer, the trainee should view preflight items in the same configurations as when using a static airplane. However, it is also beneficial to discuss abnormal conditions in training.

b) For checking and testing, slides are effective pictorial courseware. When used during checking and testing, pictorials should include abnormal conditions in a sufficient number to permit a reliable evaluation of the applicant's knowledge and ability to conduct a preflight inspection.

4) The following are required to be part of an approved pictorial preflight inspection courseware:

a) Detailed pictures of each interior and exterior aircraft preflight checklist item, which cannot be performed from the FSTD flight deck, including pictorials of the overall aircraft and major sections of the aircraft, showing the location and relationship of specific inspection items.

b) Capability for random, rapid access to any picture.

c) The opening, closing, and securing of entrance and baggage/cargo doors. Video may be used to train in these or any areas that require an understanding of how a component operates.

d) Internal and external items and any preparatory or safety-related items, such as positioning or securing landing gear doors or landing gear locks before or after the inspection, or flight deck safety check.

e) Depiction of normal and abnormal conditions.

f) The aircraft should be shown in a typical prior-to-flight condition, which may include the support people and equipment (e.g., fueling, cleaning, and catering), normally associated with flight preparation.

g) The sequence of pictures should match the sequence of the preflight inspection. The preflight procedures contained in the FAA-approved Airplane Flight Manual (AFM) or Rotorcraft Flight Manual (RFM) is the standard reference for the preflight visual inspection. They are primarily for determining essential preflight items and the sequence in which those items should be inspected.

h) Nothing should obstruct the view of the preflight item (jetways, fuel trucks, workstands, etc.).

i) Use of models, mockups, components, cutaways, and expanded views to depict details or function of inspection items.

j) The pictorial series should feature the same or identical aircraft as represented by the FTE being used for training. In some cases, use of a dissimilar aircraft may be justified to depict differences. Pictures should be representative of the specific aircraft in which the pilot certification will be conducted. For example, pictures of an LR-55 are not representative and should not be used for training or testing based on the LR-25 aircraft.

k) Unless an abnormal condition is intentionally depicted, pictorials illustrate as follows:

1. All permanent parts should be in place and in normal condition, such as windows and doors, windshield wipers, antennas, panels, etc.

2. All removable parts, such as engine cowls and access panels, should be in place and in normal condition (engine inlets should be shown with covers removed);

3. Aerodynamic surfaces, wheel-well doors, flaps, slats, and other devices should be in the configuration that they are normally before flight; and

NOTE: People and equipment associated with assembly or maintenance work should not be in the illustration.

l) Text or voice manuscript should be available to match each picture used for training when an instructor is not presenting the training.

m) The courseware should be high quality, and projection equipment should have random and rapid access capability. Examples of unacceptable quality include low-resolution copies of photographs, videotape systems without random and rapid access capability, or any other pictorial system that is markedly inferior to use of a static airplane.

5) The following are additional specific requirements for use of pictorial preflight courseware during checking or testing:

a) For optimum effective training and evaluation, the pictorial preflight courseware used in training should be different from that used during evaluation. Some of the pictures used for testing or checking should be different from those used for training.

b) The entire preflight check must be completed just as it would be if an actual aircraft were being used for the check or test.

c) Preflight items from the manufacturer's preflight checklist cannot be skipped in order to shorten the time required to perform the check or test.

d) The pilot must describe what indications they are looking for to determine if each item on the checklist is acceptable or not.

1. An example of a correct pilot description when looking at the landing gear picture might be, "I am looking for proper strut extension, leaks, flat spots on the tire, and chaffing of the hydraulic lines," or something to that effect.

2. When describing what they are inspecting, the pilot must also state whether or not the picture indicates an acceptable condition.

3. It is not acceptable for the pilot to simply say, "That's okay."

e) Abnormal conditions of preflight items must be introduced during evaluations and in sufficient number to permit a reliable evaluation of the pilot's preflight ability. In particular, pictures should include those abnormal conditions that are likely to be encountered during preflight inspection and those which are potentially unsafe.

f) The Training Center Evaluator (TCE) may ask additional questions as necessary during the preflight to ensure the pilot's knowledge.

6) The TCPM grants approval in writing. To ensure continuity, the TCPM must require pictorial courseware to be identified with a title and control number or revision to which an approval is tied. Pictorial preflight courseware is subject to the revision requirements of § 142.37(e) and (f).

E. Lesson Plans.

1) A lesson plan is a written, organized outline that provides detailed content of a single instructional period. It provides the instructor with a guide as to what specific knowledge or skills are to be taught as well as completion standards. It includes planned instruction time and sequence to ensure effective use of time.

NOTE: Some centers may develop and use other materials such as "Expanded Instructor Actions" to support the lesson plans. These materials typically provide additional support for the instructor and are courseware, similar to lessons plans.

2) Each training center must have lesson plans to implement each curriculum and syllabus and must be developed by the training center to support the curriculum with appropriate content and programmed training times. Lesson plans must contain detailed information concerning the conduct of each flight or ground training session to ensure consistency of training throughout the training center and standardization among instructors. The lesson plans should provide detailed information on all elements and events specified in the curriculum and indicate training times that equal or exceed the times specified for the curriculum.

3) Lesson plans are courseware and are the indicators that the instruction will flow in a logical sequence and in concert with the other training aids and the approved curriculum. They must cover the same information as required by the curriculum and syllabus. Lesson plans must be reviewed as part of the courseware and must be acceptable to the FAA prior to issuing TSpecs that authorize the curriculum to be taught. Deficient lesson plans are subject to the revision provisions of § 142.37(e) and (f).

NOTE: Job aids that may be used to evaluate curriculum content are located on the AFS-280 Web site.

F. Aircraft Operating Manuals, Checklists, and Quick Reference Handbooks.

1) **Basic References for System Information.** The training center must use the FAA-approved AFM or RFM as the basic training reference for systems information, description, operation, performance planning, checklists, and W&B procedures.

2) Manuals, Handbooks and Checklist Courseware. As part of the curriculum courseware, the training center must provide any aircraft operating manuals, checklists, and quick reference handbooks (QRH) that will be used for training, testing, and checking under a part 142-approved curriculum. As with any courseware, the checklist/QRH used for training, testing, or checking under an approved curriculum must be reviewed and accepted. The evaluation of a checklist or QRH proposed by the training center must be conducted by the TCPM using the AFM/RFM. A checklist or QRH that differs from the center's accepted version may only be used in accordance with subparagraph 3-4437F3) through 5). Checklists authorized for use in part 142 curricula must:

- a) Be the checklist approved by the TCPM as a part of the training center's approved curriculum for the specific aircraft M/M/S;
- b) Accurately reflect the configuration and systems of the FTE; and
- c) Must not deviate from the aircraft manufacturer's current checklist or a checklist that is in compliance with requirements subparagraph 3-4437F5).

3) Certificated Air Operators. Training centers that are conducting training for certificated air operators are required to comply with that operator's approved training program, SOPs, and courseware during all training and checking on behalf of that operator. Certificated operators are required to use their approved/accepted checklist for all training and checking, and as a result, their checklist policies and procedures are governed by their respective principal operations inspector (POI) and are not subject to revision by the training center or TCPM.

4) Government Operators. Military flightcrew members and crewmembers of public-use aircraft may use their organization's checklist when attending a part 142 training center without any further approval by the TCPM.

5) Other Operators. Exceptions to the checklist requirements specified above may be made for training and evaluation of flightcrew members of noncertificated operators conducted in an FSTD. Pilots operating for noncertificated operators may obtain training and/or checking using checklists that differ from the training center's approved checklist under the following conditions:

NOTE: The operator must determine before submission that the checklist matches the center's equipment and is capable of meeting the center's approved curriculum and training, testing, and checking requirements.

a) The operator must provide the training center with a copy of the checklist and a written statement indicating that the operator has determined that the submitted checklist meets all the following performance standards:

1. The checklist satisfies the requirements of part 91, § 91.503;
2. The checklist is appropriate to the equipment in which the operator's pilots are being trained and/or checked;

3. The checklist meets the applicable AFM or RFM requirements for the specific equipment; and

4. Areas of differences between the center's approved version of the checklist and the operator's checklist are documented; and

5. The checklist must be accompanied by a letter stating that there are no technical objections to the use of the operator's checklist. This letter must be from one of the following entities only (not the TCPM or Flight Standards District Office (FSDO)):

- a. The aircraft manufacturer,
- b. The FAA Aircraft Evaluation Group (AEG), or
- c. The FAA Aircraft Certification Office (ACO).

b) The operator's certification and proposed checklist must normally be presented to the center 15 days before any scheduled training, checking, or testing. A shorter time may be acceptable under certain conditions. However, the operator's submission must be made in sufficient time to permit the training center to conduct appropriate training and permit their instructor(s) and TCEs to become operationally familiar with the procedures contained in the checklist. All such training will be documented and become a part of the instructor and/or TCE training records. The center's documentation must include at least the following information:

1. Date of the training or familiarization;
2. Name of instructor who conducted the training/familiarization;
3. Checklist revision status used for the training/familiarization;
4. Name of the operator; and
5. Aircraft M/M/S.

c) Seven days before the subject training/evaluation, the training center must provide notification to the TCPM when an operator's checklist has been received and the dates of intended use.

NOTE: Only one version of an approved checklist will be used by the crewmembers paired during training, testing, or checking in part 142-approved training courses. Crewmembers from different operators that utilize different checklists must not be paired together. This is in addition to the air carrier pairing requirement discussed in Volume 3, Chapter 54, Section 5.

G. Audiovisual Programs, Computer Software Programs, Training Manuals, Workbooks, Handouts, and Other Courseware. These training materials are approved as an integral part of the overall training program subject to the revision provisions of § 142.37(e) and (f). They should be identified with a control date or other form of revision control.

H. Maneuvers and Procedures Descriptions (Including SOP).

1) To facilitate learning, the training center must develop and provide to students descriptions (written and/or visual) of how to perform each maneuver or procedure to be accomplished during training. This should include SOPs that state the briefing procedures, crew callouts, etc., to be used in training, testing, and checking for each course involving flight-training events.

2) Descriptions of the maneuvers and procedures (also referred to as profiles, or flight maneuvers and procedures document) explain how these events will be performed. Descriptions must be provided for each training program. They should follow the guidelines in Volume 3, Chapter 19, Section 2. The descriptions must comply with all limitations of the AFM or RFM and be consistent with requirements and conditions of the PTS (or ACS) and the regulations.

3) SOPs should be developed and evaluated using the current edition of AC 120-71, Standard Operating Procedures for Flight Deck Crewmembers, as guidance.

4) The maneuvers/procedures descriptions and SOPs are courseware and must be developed and evaluated as part of the approval process for any new or revised curriculum.

3-4438 TRAINING, TESTING, AND CHECKING.

A. Categories. Under part 142, training, testing, and checking can be accomplished in four categories:

1) **Initial Training.** This category includes initial training for an Airline Transport Pilot Certificate (ATPC), a type rating, or initial training as second in command (SIC).

2) **Upgrade Training.** This category of training applies to an airman who is currently serving as an SIC who wishes to become PIC qualified on the same aircraft. This category of training may include foreign pilots with a foreign type rating applying for a U.S. certificate with an appropriate type rating.

3) **Requalification Training.** This category of training is for those airmen that are PIC or SIC qualified, but who are not currently operating the aircraft, or whose PIC proficiency check has expired. Guidelines for the training times that should be used for a requalification curriculum can be found in Volume 3, Chapter 19, Section 11. Tables 3-75 through 3-77 in Volume 3, Chapter 19, Section 11 should be used to determine the minimum ground and flight training time for the appropriate aircraft.

4) **Recurrent Training.** This category of training is for PICs (or SICs) who are currently operating the aircraft or have a valid PIC proficiency check.

B. Hours of Training. Ground training time for airman certification may not include training in ground training subject areas that occur after the ground training course or segment has been completed and completion/qualification standards have been accomplished.

Specifically, using briefing time preceding or following an FSTD training session as programmed ground instruction time is not acceptable.

1) For any curriculum involving airman certification, the appropriate ground training modules or segment must be satisfactorily completed before the start of the associated flight training lesson(s).

2) A legal interpretation of § 142.49(c)(1), dated August 27, 1999, ruled in part that restricting instructors to “no more than 8 hours of instruction in any 24-consecutive hour period” applies only to flight instructors and FSTD instructors while they are providing instruction in an aircraft, an FSTD, or any combination thereof. Consequently, instruction time has an impact on the maximum duty time per day for an instructor, except for time spent conducting briefing and debriefing associated with flight training.

3) Time spent completing or attempting to complete a practical test does not count toward the minimum programmed time.

4) Training completed after the qualification segment of a curriculum has been completed may not be credited toward the curriculum programmed hours.

5) The time spent by the airman actually manipulating the controls from the PIC seat during LOFT may be a part of the minimum programmed hours.

C. Permissible Crew Pairing During Training, Testing, or Checking.

NOTE: Crew pairing procedures relating to air carriers and part 91K operators are located in Volume 3, Chapter 54, Section 5, subparagraph 3-4414F.

1) Training centers are required to comply with § 142.65(b) crew pairing requirements while conducting training/checking/testing in accordance with part 142. Section 142.65(b) specifies that when flight testing, flight checking, or line operational simulation is conducted, each required crewmember position must be occupied by either a crewmember qualified in the aircraft category, class, and type, or a student enrolled in the same specific course.

2) During testing, checking, or LOS conducted under a part 142-approved curricula, each crewmember seat will be occupied by:

a) An airman who is FAA-qualified in the same aircraft category, class, and type. This could be a training center instructor who is not providing instruction, or another airman who is qualified in the particular curriculum/course requirements and procedures; or

b) A student enrolled in the same specific course.

3) The intent of this requirement is to ensure that the pilot being tested or checked is assisted by a pilot who is competent and proficient at performing the duties of the pilot monitoring (PM). When students are enrolled in courses with different identifiers or names, they may therefore still be paired together in a FFS for testing, checking, or LOS activities, provided the courses are essentially similar.

4) The same crewmember pairing requirements should be used during training in view of the requirement that all training in the FSTD or aircraft will be accomplished using the curriculum's approved checklist/QRH. For standardization and effective training, all crewmembers should be using the same maneuvers/procedures, and operating procedures (including CRM) during a training session.

NOTE: Training programs may be viewed as essentially similar when they include the same curriculum, checklists, callouts, flight deck configurations, operational procedures, and flight manuals.

NOTE: In crew pairings involving pilots operating under different operating rules (e.g., part 142 and a foreign Civil Aviation Authority (CAA)) TCPMs must be especially vigilant. The part 142-approved training program must not be distorted or diminished in order to accommodate dissimilar training needs. If the integrity of the part 142 training program cannot be maintained, the crew pairing must not be permitted.

5) Training centers must develop a written crew pairing policy for part 142 training and adhere to this policy. Besides defining how the training center will comply with the intent of § 142.65(b), this policy should include a requirement for English language proficiency (in accordance with the current edition of AC 60-28, English Language Skill Standards Required by 14 CFR Parts 61, 63, and 65) and a mechanism for a trainee to elevate a concern regarding an unsatisfactory pilot pairing to center management.

D. Evaluating the Pilot Flying (PF).

1) It is important to understand that the underlying premise for this guidance is applicable to all testing and evaluations within the context of an operator's training program. FAA-S-8081-5F, Airline Transport Pilot and Aircraft Type Rating—Airplane PTS (or ACS) clearly explains an examiner's responsibility when conducting a practical test. The underlying premise, simply stated, requires the evaluator to be able to make an informed evaluation of a pilot's performance concerning their decisionmaking/judgment as well as their ability to satisfactorily accomplish the appropriate testing/checking requirements. The evaluator also has the difficult task of determining when the action of the PM either contributes to the failure or success of the PF's ability to satisfactorily demonstrate his/her judgment/decisionmaking. In the extreme, continued prompting or leading by the PM will eliminate or comprise the evaluator's ability to determine the PF's decisionmaking/judgment concerning a particular maneuver.

2) During the accomplishment of required approaches, an occasional airspeed or altitude reminder may be acceptable. However, when these reminders become so frequent as to interfere with the evaluator's ability to determine the PF's command of the situation, corrective action must be initiated. It is the responsibility of the evaluator to ensure the PM does not interject his decisions into the evaluation process making it impossible to determine the PF's judgment and abilities. The evaluator must be diligent and ensure the PM does not assume the role of an instructor during the learning and/or evaluating processes. In this context, it is important that the objective of each maneuver be clearly understood.

3) A high degree of technical proficiency is essential for safe and efficient airplane operations and by regulation and policy, pilots are required to demonstrate their mastery of the situation. As an evaluator, one can only determine the PF's knowledge and judgment if that individual is in command of the situation, without excessive prompting, throughout the assigned task. Those elements that require good command presence from the PF cannot be properly evaluated if he/she is being continually prompted by the PM. Historically, CRM concepts address problems associated with poor group decisionmaking, ineffective communication, inadequate leadership, and poor task or resource management. While demonstrating the mastery of CRM concepts is currently required during 14 CFR parts 91K, 121, and 135 evaluations, it should be remembered that sound CRM principals are equally important in all flight operations. However, they remain largely subjective, and the job of an evaluator is to ensure these concepts are not used to mask a lack of proficiency of the PF in the maneuvers being evaluated.

E. Steep Turns and Approach to Stalls.

1) Steep turns are performed for the purpose of evaluating the PF's crosscheck and their mastery of the airplane in accordance with the applicable AFM and PTS (or ACS). It is incumbent on the evaluator to provide a clear briefing prior to the maneuver specifying, at a minimum, the altitude, airspeed, bank angle, direction, and degree of turn and roll out heading to the PF. Additionally, if the maneuver is being accomplished in an airplane, the minimum safe altitudes listed in the appropriate PTS (or ACS) and/or AFM must be observed. Steep turns in a qualified FSTD may be accomplished at an altitude consistent with the objective of the maneuver. The PM provides standard company deviation calls throughout the maneuver.

a) Prior to commencing the maneuver, it is permissible for someone other than the PF to set the power required to establish steady state flight. However, once the maneuver begins, the power required to maintain the briefed airspeed is the responsibility of the PF. Throughout the maneuver, the PF may request the PM to make power adjustments if specific instructions are provided (e.g., "increase fuel flow 300 pounds," "set 94 percent," "increase Engine Pressure Ratio (EPR) to 1.3," etc.). It is not permissible for the PF to brief the PM to maintain a given airspeed during the maneuver.

b) During the steep turn maneuver, the PM follows and provides standard company callouts. Excessive deviations from assigned altitude, airspeed, bank angle, and/or headings may be an indication of poor performance by the PF.

2) The objective of an approach to stall as outlined in the PTS (or ACS) is the PF's recovery procedure, not a memorized set of entry requirements. If the maneuver is being accomplished in an FSTD, minimum safe altitudes listed in the PTS (or ACS) or AFM are not required to be observed; therefore, it is recommended that the procedure be scenario-based. For example, the landing configuration approach to stall should be accomplished at a critical altitude consistent with the airplane's performance. Simulating an intermediate level off during a nonprecision approach without auto throttles and the autopilot (AP) engaged may be one example. The clean configuration stall might be accomplished at normal cruise altitudes simulating an entry into a holding pattern or by following ATC instructions to reduce airspeed. The important issue is to accomplish these maneuvers in a realistic setting that is unhampered by the safety requirements that must be observed when an actual airplane is used for the training and checking.

a) During evaluation/training, it is expected that the pilot normally assigned the responsibility for making required configuration changes will make those changes during the accomplishment of a stall recovery. For example, if a flap configuration change is part of the required recovery procedure and the PM is normally assigned that responsibility, it is expected that he/she will make the required change as commanded by the PF. If the recovery procedure for the landing configuration is to raise the gear and select a different flap setting, it is expected that the PF will make the required calls and the PM will accomplish the requested configuration change. The PM should not change the airplane's configuration without being commanded by the PF.

NOTE: If this maneuver is being accomplished in the airplane, the PM must not permit the airplane to be placed in jeopardy due to the PF's lack of command or incorrect command during the recovery procedure.

b) During the stall recovery procedure, after the PF initiates a power increase, the PM may adjust the power to the directed setting.

NOTE: If this maneuver is accomplished in the airplane, the PM must ensure appropriate engine limitations are not exceeded.

3) TCPMs must ensure that part 142 subpart C training curricula reflect steep turn and approach to stall recovery policy, and advise their respective training center's instructors and evaluators of this policy. It is recommended that this item be made an item of interest during routine surveillance of training centers.

F. Acceptable Policy on the Use of FSTD Freeze, Slow Motion, and Repositioning Features. Compliance with § 142.65 requires that FSTD freeze and slow motion functions not be used during testing or checking. If operationally necessary and advantageous to a particular scenario, however, it is permissible to briefly suspend a testing or checking event long enough to accomplish a reposition from one point on the ground to another point on the ground (including a different airport), at which the next phase of the test or check will begin. The use of reposition is never required, but if it is used, it should be used to the minimum extent necessary to accomplish the required testing or checking scenarios. The following guidelines must be complied with:

- The evaluator must include, as part of the FSTD period briefing, the information that at one or more points the test or check will be temporarily suspended while the device is repositioned.
- Each time it is necessary to reposition the FSTD, an announcement must be made that testing or checking is suspended.
- Once reposition is complete, a clear announcement must be made that the test or check has resumed.
- Repositioning of the FSTD must take place only from one ground point to another, and only after the FSTD has been brought to a complete stop.

3-4439 TRAINING FACILITIES. The training center must have adequate facilities to assure that each training room or other space used for instructional purposes is heated, lighted, and ventilated to conform to local building, sanitation, and health codes. The training facility must also provide students with a learning environment free of distractions, such as instruction conducted in other rooms, or flight and maintenance operations on an airport.

3-4440 PART 142 RECORDKEEPING.

A. Defining Records. A record is information preserved in a predetermined format as an account of the occurrence of an event. In general, a record must show what event occurred, when it occurred, who was involved, and proof of the event's occurrence such as certification by individual signature.

1) Records of airman, instructor, and evaluator training and qualification are an integral part of any training program. A training center certificated under part 142 is required by regulation to produce and maintain certain records and to have an approved recordkeeping system. Each student, instructor, or evaluator record consists of all documentation that is required to be maintained on a specific individual. Those documents must be maintained in the same approved location.

2) The recordkeeping system must identify what records are used to meet each FAA and Transportation Security Administration (TSA) regulatory requirement. The system must describe in detail the procedures and forms used by the training center for the generation and maintenance of required records. TSpec A025, Approved Recordkeeping System must include a detailed description of the records, including specific forms, or reference to an approved manual that contains the system description. Each form on which a training or qualification record is kept must be identified by a control or revision number to identify that the current recordkeeping system is in use. Revisions to the recordkeeping system, including individual forms, must be approved by the TCPM.

3) A training center may elect to develop and use an electronic recordkeeping system. The system must be capable of generating and maintaining the required records.

B. Student Records. Recordkeeping requirements for students are stated in § 142.73 and must contain the following information:

- 1) Whether prerequisites were met prior to enrollment, including Airman Certificates and previous experience.
- 2) The curriculum in which the student is enrolled.
- 3) Results of each test or check.
- 4) Documentation of the student's progress, daily flight training status, and curriculum/course completion.
- 5) A record of each student's performance on each lesson (ground and flight) by the instructor who provided the ground or flight instruction. The record must also identify the name of the instructor as well as the training time accomplished.
- 6) Proof that the student is eligible to accomplish 100 percent training and testing in an FFS or a statement with the appropriate limiting language for the certificate being sought.
- 7) Recommended additional training in the event of an unsatisfactory test or check.
- 8) Record of additional training received and the satisfactory accomplishment of the training before retesting following an unsatisfactory test or check.

C. Instructor/Evaluator Records.

- 1) Recordkeeping requirements for instructors and evaluators are stated in § 142.73. These records must document the qualification, training, and checking requirements of §§ 142.13, 142.45, 142.47, 142.49, and 142.53. The system must contain the following information:
 - a) Eligibility requirements and prerequisites for the position (§ 142.47). This includes pilot certificates and detailed flight experience.
 - b) Completion of instructor/evaluator training (§§ 142.49 and 142.53), including documentation that reflects curriculum content. Instructor and evaluator training are subject to the requirement that each instructor who provides ground or flight instruction under an approved curriculum must record each student's performance on each lesson (ground and flight). The record must also indicate the name of the instructor as well as the training time. The program must include the initial and recurrent training and testing requirements of part 142 subpart C. Training time must be identified.
 - c) Completion of the appropriate training curriculum or course in which that individual will instruct.
 - d) Satisfactory completion of written testing requirements.

e) Designation as an instructor to instruct in each approved course. The records must identify every course or curriculum assignment and document the duties of each instructor (e.g., ground instructor: Learjet initial and recurrent; differences; simulator instructor: PIC/SIC initial and recurrent, etc.). The designation must specifically identify the aircraft by make/model/series.

f) Annual flight experience or line/flight observation, including verification by flightcrew of participation and time, and LOFT.

2) The center's recordkeeping system must include a method to ensure instructors and/or TCEs are not scheduled to exceed 8 hours of instruction and/or evaluation duties in any continuous 24-hour period, excluding briefings and debriefings. This system must also identify the method the training center will use to prevent an instructor or TCE from being scheduled or accepting duty periods that will exceed the maximum allowed instruction and evaluation time in any continuous 24-hour period (refer to §§ 142.49 and 142.55).

NOTE: For example, a TCE assigned to instruct 4 hours of flight training followed by a 3-hour FFS evaluation will be considered to have accumulated 7 hours of time toward the 8-hour maximum permitted by the applicable regulation.

3) The records must show the initial and annual evaluation of instructional ability. An instructor authorized to instruct in multiple curricula must be evaluated and checked annually in each of those curricula for which he/she is authorized to provide instruction. Each curriculum may be evaluated separately or concurrently with another curriculum if the TCEPM determines that there is sufficient commonality between the curricula to warrant crediting instruction in one as equivalent to the other. The records must document that the instructor has been evaluated for each of the assigned curricula.

NOTE: Regulations require that air carriers keep adequate training records for instructors and check pilots and check flight engineers (FE) at their principal place of business or other locations as approved by their POIs. Training centers that are providing training on behalf of an operator are part of the operator's program and therefore are reasonable locations for an operator to maintain applicable training records. The records, however, must be maintained in compliance with the operator's approved program and must be made available to the operator and/or the Administrator upon request.

4) If the training center provides air carrier training and checking and has agreed to maintain the contract check pilot/check FE and/or contract instructor training records for the customer, the center's recordkeeping system will need to accommodate the requirements of the customer's operating rules which will vary from the center's requirements. The training center is only required to maintain records in support of its (the training center's) approved programs. Part 142 subpart E requires training centers to maintain records for trainees, instructors, and evaluators for courses "...approved in accordance with subpart B of this part." An air carrier may contract with the center and may have included a provision wherein the center will maintain certain portions of the operator's training records. If the center has been approved to maintain the

operator's training records, it is being done under an agreement with the operator and the operator remains responsible for the accuracy and quality of the subject records. The fact that the center has agreed to maintain the subject records will require the center to keep an additional set of records to comply with the operator's requirements. This becomes especially important when the operator is requesting the center to provide contract instructors and check pilots/check FEs who are also employed by the center as instructors and/or TCEs.

5) If the center will be providing contract instructors or contract check pilots/check FEs to the operator, required instructor and TCE records will form the basis for qualifying those individuals as contract instructors and check pilots/check FEs for the operator and will need to be available for review by the air carrier and its POI.

6) Prior to approving the center's recordkeeping system, the TCPM must review part 142 regulatory requirements for qualification, training, testing, and checking and ensure the proposed method(s) of recordkeeping meets applicable regulatory requirements. The location of required records, as well as the person responsible for their management, must also be identified.

7) A job aid titled "Training Center Instructor Eligibility and Training Records" has been developed to assist the TCPM in determining if an instructor/evaluator training and recordkeeping system meets regulatory requirements. This job aid is available on the AFS-280 Web site.

3-4441 CURRICULUM APPROVAL.

A. Requirements. Part 142 requires training centers to obtain approval of a new curriculum or a revision to a currently approved curriculum before the subject curriculum may be conducted. Inherent in the approval process is the FAA's responsibility to deny approval of any training that does not meet regulatory requirements or has been found deficient. Training curricula that have been granted approval and later found to be in conflict with regulatory requirements or to be ineffective must be appropriately modified by the center, or FAA approval must be withdrawn.

B. Obtaining Approval. The TCPM should discuss with the training center the sequence and timing of events that occur in the development and the granting of initial and final approval of a training curriculum. If the center's proposal involves complex operations, the TCPM should consult the appropriate sections of this order and other relevant documents and also determine whether assistance from an FAA specialist will be necessary.

C. Approval Process. Training center curricula are granted initial and final approval through the issuance of TSpec B001, Core Curriculums; B002, Specialty Curriculums; or B003, Other Approved Courses, as applicable. TCPMs must not issue separate curriculum approval letters. The approval process follows a two-step process: initial and final.

1) Initial Approval. Initial approval is granted by listing the curriculum in the TSpec B001, B002, or B003, as applicable, and selecting the words, “Initial Expires On” in the row associated with the curriculum entry. An expiration date (in format MM/YYYY), which must not be more than 24 calendar-months from the date of initial approval, must also be entered. A copy of the curriculum, with a copy of the center’s submission letter, must be maintained on file, either electronically or in hard copy, in the certificate-holding district office (CHDO) by the TCPM during the period that the curriculum is approved for use by the training center. This file may include any additional supporting information the TCPM feels appropriate. However, it is important to understand that entry of the curriculum in the center’s TSpecs represents the FAA’s approval for the center to conduct the subject curriculum.

2) Final Approval. Final approval is granted by changing the words, “Initial Expires On” to “Final Issued On” in the TSpec B001, B002, or B003, as applicable, now associated with the curriculum. Enter the “Issued On” date (in format MM/YYYY). If a curriculum is granted final approval without first being initially approved, follow the procedures outlined in step 1 above, except enter the words, “Final Issued on” in the curriculum row. At the discretion of the TCPM, a curriculum’s “Final” approval status may be changed to “Initial,” along with the issuance of an appropriate expiration date.

a) Based on the results of evaluations conducted during the curriculum’s initial approval phase, the TCPM must determine whether to grant or deny final approval of a training curriculum. This determination must be made before the expiration date of the initial approval. If the TCPM decides not to grant final approval, he/she must make reasonable efforts to convince the center to make the necessary revisions. If the center fails to comply within a reasonable time, the TCPM must withdraw the center’s initial approval for the subject curriculum (See Volume 3, Chapter 19, Section 2 for guidance on terminating or failing to issue final approval for a curriculum.).

b) If the training center applies for a curriculum with fewer than the required hours of training specified in part 61, the TCPM must carefully evaluate their request and ensure the center has:

- Included a statement concerning the basis for reduction;
- Provided a description of how they plan to accomplish such training in the reduced number of hours;
- Included a description of the center’s method to track student performance both during training and qualification, and after curriculum completion to validate training program effectiveness; and
- Provided historical data covering at least one year. This is the minimum period of time considered necessary to properly evaluate student performance. Data to be tracked might include incidents, accidents, hours flown, and type of flying.

NOTE: The TCPM may require the historical data of more than 1 year if 1 year of data is insufficient to evaluate student performance, such as due to low enrollment in a particular course.

NOTE: No curricula can be approved that permit an applicant to be certificated with less than the minimum experience requirements for a particular certificate or rating. The reduction in hours described above is only applicable to training hours, not flight hour experience requirements.

c) If the TCPM believes the center's request is viable and wishes to proceed with the approval process, the TCPM must forward the request with his/her recommendation to AFS-200 through the appropriate regional part 142 coordinator for review and action.

RESERVED. Paragraphs 3-4442 through 3-4460.