

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8700.28

2/24/04

Cancellation
Date: 2/24/05

SUBJ: FAA/INDUSTRY TRAINING STANDARDS PROGRAM

1. WHAT IS THE PURPOSE OF THIS NOTICE? This notice provides detailed information about the Federal Aviation Administration (FAA)/Industry Training Standards (FITS) Program: what it is, its focus, who is involved, and how aviation safety inspectors (ASI) apply it. Additionally, this notice provides information on how the FITS philosophies may be applied to other training and evaluation responsibilities of ASIs.

2. TO WHOM IS THIS NOTICE DISTRIBUTED? This notice is distributed to the division level in the Flight Standards Service in Washington headquarters; to the branch level in the regional Flight Standards divisions; to the Flight Standards District Offices (FSDO); and to the Regulatory Standards Division at the Mike Monroney Aeronautical Center. This notice is also distributed electronically to the division level in the Flight Standards Service in Washington headquarters and to all regional Flight Standards divisions and district offices. This information is also available on the FAA Web site at: <http://www.faa.gov/avr/afs/notices/8700/N8700-28.doc>.

3. WHAT IS THE BACKGROUND? General Aviation (GA) constitutes a significant majority of civil aircraft fleets in the United States and performs a variety of critical functions ranging from flight training for most pilots to medical evacuation, small package delivery, fractional ownership, business transportation, agricultural operations, law enforcement, and other functions. Increasingly, GA is also providing a viable air transportation complement to the air carrier “hub and spoke” system. Corporate aviation and on-demand air taxis have provided such service for some time and new forms of GA are expanding these alternatives.

a. Many new developments have recently taken place that have a pronounced effect on GA flight operations and training. For example, the complexity of the airspace will continue to increase as the National Airspace System (NAS) is modernized and the FAA’s Operational Evolution Plan takes effect. Airspace and related operational changes will continue to accommodate national security mandates, and these changes will be magnified as new cockpit and other flight technologies are introduced.

b. New technologies designed to enhance aircraft operational capabilities are always being developed and brought to market. New time effective, cost effective, and innovative ways to train pilots need to be developed that address the potential safety benefits new technologies can bring to GA. Older technology systems all function and look similar, so it did not matter who built the systems. However, new technology systems that perform similar functions may not look alike and pilot interaction with these systems may be completely different. Consequently, a “one-size-fits-all” approach to training is no longer adequate.

Distribution: A-W(FS)-2; A-X(FS)-3; A-FFS-7 (LTD); AMA-200 (80 cys)
(Electronically: A-W(FS)-2; A-X(FS)-2; A-FFS-7)

Initiated By: AFS-840

c. The FITS Program uses an evolutionary approach to training pilots that is responsive to the pace of changes in the GA environment and the NAS. As new technology and aircraft are developed, the FAA will identify future training needs. The FITS Program will develop training products and guidelines that are appropriate to the needs of the GA community.

d. The leading causes of GA fatal accidents are related to weather and loss of control. As the GA community continues to grow, a major challenge will be to decrease the number of fatal accidents and to maintain, and hopefully increase, public acceptance of GA as an alternative form of air travel. Recent evaluations of accidents in Technically Advanced Aircraft* (TAA) and training accidents indicated that lack of situational awareness, poor decisionmaking, and inadequate risk management were major root causes. GA training and testing will be changed to address these leading accident causes and further reduce the number of GA fatal accidents.

4. WHAT IS AN FAA/INDUSTRY TRAINING STANDARD? Each new aviation technology (aircraft, avionics, capabilities, etc.) that is brought to the market presents the potential for new training. The FAA process for developing new or revised advisory materials and rule changes are arguably not fast enough to keep up with these changing needs for training. For those reasons, the FAA is teamed with GA industry leaders to develop FITS that are acceptable to the FAA. There are currently three categories of FITS products:

a. **Generic FITS for Use by the General Aviation Community as a Whole.** Generic standards will be developed for a broad category of training functions such as the flight review, complex and high performance training, and other functions. Individual training entities may adapt them for a particular aircraft or other scenarios. Whenever possible, incentive mechanisms will be incorporated into the standard.

b. **Specific FITS Program for a Specific Aircraft or Technology.** Specific FITS are expected to be developed as new aircraft and technologies are developed. For example, a specific FITS might be developed to train a pilot on a specific display or capability the pilot has retrofitted into his or her aircraft. Another specific FITS might be for a specific aircraft type. These training standards may be integrated with the generic standards described in paragraph 4a.

c. **Mandatory FITS Standards In Accordance With 14 CFR § 61.31(h).** In rare instances, the FAA may elect to invoke Title 14 of the Code of Federal Regulations (14 CFR) part 61 § 61.31(h) to require aircraft type specific training for aircraft with unusual operating characteristics, flight systems, or critical safety issues. Because of the regulatory implications of FITS, notice and/or public comment would normally be required through the Federal Register to implement this provision. Promulgation could be through an amendment to the aircraft flight manual, with reference to the FITS standard directory.

5. WHY WOULD THE GA PILOT AND TRAINING COMMUNITY ADOPT FITS VOLUNTARILY? We are working with the GA industry to provide incentives for pilots and training operators to adopt and use FITS. The following are some possible incentives:

* Technically Advanced Aircraft are generally defined as newer and legacy (older) aircraft that combine some or all of the following design features: advanced cockpit automation system (Moving Map GPS/Glass Cockpit) for instrument flight rules (IFR)/visual flight rules (VFR) flight operations, automated engine and systems management, and integrated autoflight/autopilot systems. TAAs also include aircraft used in both VFR and IFR operations with systems certified respectively.

a. Lower insurance costs or, more importantly, the availability of insurance if the pilot is trained under an approved FITS Program. One major GA-oriented insurance carrier has already agreed to a 10 percent discount if a pilot accomplishes FITS recurrent training that includes aeronautical decisionmaking and risk management.

b. Other insurance-related cost saving incentives may result from the use of a FITS Program. All insurance carriers require a certain amount of pilot experience in a particular make and model of aircraft to be insured. Typically, if the pilot has little or no experience in the make and model, the insurance carriers require a certain amount of ground and/or flight instruction from an insurance carrier-approved flight instructor. Depending on the experience of the pilot and the make and model of aircraft, an insurance carrier will require an average of 20 to 25 hours of instruction in the make and model with the hope that the pilot receives at least 25 percent of that as valuable “quality” instruction. We will be working with insurance carriers to show them that FITS can substantially reduce the number of required instructional hours by providing 100 percent quality instruction. In other words, FITS could reduce 25 hours of required make and model instruction down to 5 hours, thus reducing the operator’s overall operational costs.

c. The FITS team is developing a generic private/instrument combined curriculum for use under 14 CFR § 141.57. Under § 141.57, minimum flight time and experience requirements of parts 141 or 61 do not apply. Also under § 141.57, there are no restrictions on the use of simulation devices. Consequently, the pilot may be able to receive a private pilot certificate and instrument rating in less time and with less cost.

d. A new way to comply with the flight review requirements of § 61.56 is being developed (see paragraph 16). Preliminary cost analysis indicates that it would cost more than a standard flight review but less than the current pilot proficiency FAA Pilot Proficiency Award (WINGS) Program. Additionally, this new pilot proficiency program will be more convenient. Continuing education modules, that contain updated information on new airspace, new airspace restrictions, or other requirements, can be accomplished whenever and wherever the pilot has time and more pertinent modules can be tailored to the pilot’s type of flying, or the time of year.

6. WHAT IS THE FOCUS OF FITS? The FITS Program focuses on small (12,500 pounds or less maximum gross takeoff weight) TAA that are either reciprocating or jet-powered and owner or professionally flown for personal or business transportation. Commercial operators (air carriers and charter operators) have stringent training requirements. Operators of two-pilot business jets already have a safety record nearly equal to air carriers. Sport and recreational pilots have their own training and certification standards that restrict them to the airspace in which they can fly and the number of passengers they can carry. This should reduce their exposure to risk. A businessman using a TAA as a transportation tool is an example of where the FITS is concentrated. It should be noted that there would be an application to non-TAA aircraft as well.

7. WHAT ARE THE FITS GENERIC PRODUCTS?

a. There are four basic types of pilot training:

(1) Initial — A pilot receives a certificate or rating (private, commercial, instrument, multiengine, ATP, etc.);

(2) Transition — A pilot goes from one make and model to another or receives an operating privilege (Cirrus SR-22, Lancair Colombia 400, high performance, complex, tailwheel, etc.);

(3) Recurrent (such as a flight review); and

(4) Equipment Specific (such as Garmin 430/530, Avidyne Flight Max EX500, Bendix/King KLN 90B, etc.).

b. The FITS technical team is producing generic training syllabi for these types of pilot training. When the syllabi are completed, they will be put on the FITS Web site at <http://www.faa.gov/avr/afs/fits>. These syllabi are considered “living documents” and will not be static; they will be part of a system safety approach. After implementation data is collected, validated, and analyzed, the generic FITS syllabi will be modified as needed. The first generic products the FITS Program is producing are:

(1) Transition-Piston.

(2) Transition-Light Jet.

(3) Instructor.

(4) Recurrent-Piston.

(5) Recurrent-Light Jet.

(6) Private/Instrument Combined.

8. HOW WILL THE GA COMMUNITY USE THESE PRODUCTS? In general, the industry will use a generic FITS and develop specific training curriculum/programs from it. For illustration purposes, here are three different examples:

a. A new aircraft manufacturer, FlyitEzee, LLC, has a new four-place, TAA single-engine airplane called the “EzeeTAA.” Since they will be conducting their own factory transition training for their customers, they will need a transition-training syllabus. They can go to the FITS Web site and download the FITS Generic Transition-Training Syllabus. They use the FITS syllabus as a template or guide to develop the “EzeeTAA” Transition-Training Syllabus and submit it to the FITS technical team for review and acceptance as a FITS compliant syllabus. In this case, there would be no FSDO or ASI involvement.

b. Acme Flight Training is a 14 CFR part 141 pilot school and wants to have a combined private/instrument training program under § 141.57 added to their pilot school certificate. Acme could go to the FITS Web site and download the FITS Generic Private/Instrument Syllabus. Acme would then use this syllabus to develop a training curriculum for their operation (taking into consideration their facilities, simulation devices, type aircraft, etc.). Acme would then seek approval from their local FSDO for the addition of this curriculum, as they would for any curriculum. The FSDO would handle this request as they would any other approval request for an additional course.

c. Acme Flight Training is a wholly owned subsidiary of AcmeShares, LLC. AcmeShares is an owner-flown shared ownership company that gives the owner an equity position in a fleet of EzeeTAA model airplanes. Acme Flight Training conducts transition training for AcmeShares owners under part 141, appendix K, Special Preparation Courses. The procedure for the use of FITS products and approval of the courses is the same as the § 141.57 approval. Acme Flight Training could go to the FITS Web site and download the FITS Generic TAA Transition-Training Syllabus. Acme would then use this syllabus to develop a transition training curriculum tailored to the EzeeTAA and their operation. Acme Flight Training would then apply to their local FSDO for the addition of this curriculum, as they would for any curriculum. The FSDO personnel would handle this request as they would any other request for an additional course.

9. WHAT ARE THE IMPENDING CHANGES TO THE GUIDANCE FOR EVALUATION AND APPROVAL OF REQUESTS FOR AN ADDITIONAL COURSE UNDER § 141.57? The following will be incorporated into a future change of Order 8700.1, General Aviation Operations Inspector's Handbook:

a. **Volume 2, Chapter 140, Section 1, Paragraph 1B(4).** Change to read: "Special Curriculum. A special curriculum course is a course of pilot training not listed in the appendices of part 141. Under § 141.57, a pilot school may apply for approval to use a special curriculum provided it contains features that can be expected to achieve a level of pilot competency at least equivalent to the level achieved by the curriculum prescribed in the appendices of part 141 or the requirements of part 61. Since the experience requirements of parts 61 and 141 do not apply to a course approved under § 141.57, a special curriculum course allows a pilot school to be innovative concerning the use of advanced technology (simulators, flight training devices (FTD), computer-based aviation training devices (PCATD), computer-based instruction, web-based instruction, etc.)."

b. **Volume 2, Chapter 141.**

(1) **Section 1, Paragraph 7A.** Add subparagraph (13) to read: "The approval of a special curriculum course under § 141.57."

(2) **Section 1, Paragraph 11C.** Change to read: "Special Curricula. A pilot school or provisional pilot school may apply for approval to conduct a special course of pilot training that is not described in the appendices of part 141. Such special curricula must contain features that can be expected to achieve a level of pilot competency equivalent in scope and depth to that achieved by the curricula prescribed in the appendices of part 141. Curricula may be approved under § 141.57 without meeting the hour or experience requirements prescribed in part 61 or the appendices of part 141. A designated pilot examiner (DPE) must conduct the practical test for pilot certification for a course that does not meet the hour or experience requirements for 14 CFR parts 61 or 141. A certificate holder may not apply for examining authority for a course that does not meet the requirements of part 61 or the appendices of part 141 for that course. An additional requirement for approval of a special curriculum with reduced times is that if the course leads to a certificate or rating, the first attempt pass rate must remain at least 90 percent for the certificate or rating practical test. If the pass rate falls below 90 percent, the certificate holder must revise the curriculum to include training that will assure a 90 percent first time pass rate will be maintained. If the 90 percent pass rate cannot be maintained following the revision, the principal operations inspector (POI) may cancel the approval of that course."

(3) Section 1, Paragraph 11E. Change to read: “Part 61 Amendments. If ground or flight time requirements are amended in part 61, at the time of renewal of the part 141 certificate, affected Training Courses Outline (TCO) must be amended to meet these new time requirements.”

(4) Section 1, Paragraph 15A. Change to read: “Ratings. FAA Form 8000-4, Air Agency Certificate, must list the various ratings for which a school qualifies for special curriculum under §§ 141.11 and 141.57, if applicable. These ratings do not specifically address each approved course of training that a school may be authorized to give. Under the broad listing of ratings found in §§ 141.11 and 141.57, if applicable, a school could be authorized to conduct nearly a hundred different courses.”

(5) Section 2, Paragraph 9A(4). Change to read: “Evaluate any commercially developed or FAA/Industry Training Standards developed training syllabi.”

(6) Section 2, Paragraph 9A(4)(a). Change to read: “Ensure that the school fully understands the objectives and standards of the commercially developed or FAA/Industry Training Standard developed training syllabi.”

(7) Section 2, Paragraph 9A(5)(a) thru (d). Change to read: “(5) Evaluate the special curricula. Title 14 CFR § 141.57, special curricula must be evaluated with flexibility in mind. Special curricula may be used in experimental curricula under research and development. Minimum flight and ground hours do not apply to courses approved under this section. The limitations on the use of simulators, FTDs, PCATDs, or other approved simulation technology do not apply. When approving special curricula, the inspector must ensure that the curricula covers all the aeronautical knowledge areas and flight proficiency areas of operations listed in the appropriate sections of part 61. The inspector must determine that objectives, content, and completion standards are not less than those contained in the appropriate practical test standards.”

(8) Figure 141-4, Sample List of Approved Courses. Add the following after the “Rotorcraft External Load Operations” line: “Special Curricula (§ 141.57).”

c. Volume 2, Chapter 142.

(1) Section 1, Paragraph 7G. Change to read: “G. Commercially Developed Training Syllabus. Part 141 was amended to give full recognition to the ability of a certificated school to develop its own course of training. There are, commercially developed training syllabi available for use by part 141 pilot schools. A part 141 pilot school may elect to purchase a commercially developed syllabus and present it to the FSDO for approval. The FSDO completes the approval process in the same manner as it would for a syllabus developed and submitted by the school. When evaluating the school’s commercially developed syllabus, the inspector must determine whether the school fully understands the objectives and standards of the commercially developed syllabus and if the school will be able to fully comply with it.

(a) Before approving a TCO that contains a commercially developed syllabus, the reviewing inspector will take whatever action is necessary to ensure such understanding, and recording these actions in the FSDO’s school file.

(b) Carefully review the commercially developed training syllabus to determine whether the school is able to provide the training in the manner described in the syllabus, and whether the syllabus completely supports the curriculum.

(c) A pilot school may use a commercially developed syllabus once it is approved. Any subsequent modifications to the commercially developed syllabus must be approved by the FSDO before the school may use them. Pilot schools should be alert to changes in the course content by producers of commercial syllabi.

(d) The FSDO should understand that although the Certification and Flight Training Branch, AFS-840, has reviewed the content of the commercially developed syllabus to determine if it is generally acceptable, they have not approved it for use in a part 141 pilot school. That approval rests solely with the FSDO.”

(2) **Section 1, Paragraph 9A.** Add subparagraph (5) to read: “Special Curricula approved under § 141.57 that do not fall under any appendix of part 141 are not restricted by the simulator or FTD limitations in parts 61 or 141. The POI for the pilot school has the latitude to approve the use of PCATDs, FTDs, and flight simulators. The time in these devices and simulators can be logged by students and used toward their pilot certificate.”

(3) **Section 2, Paragraph 5D(1).** Change to read: “Mark each page of the original TCO and of the office copy ‘FAA-Approved.’ Sign and date each page. If no changes have been made to the curriculum of a commercially developed syllabus, stamp the first page ‘FAA-Approved’.”

10. WHO IS DIRECTLY INVOLVED WITH THE FITS PROGRAM? Currently there are three groups involved in FITS. The FITS team includes the FAA, our industry partners, and members of the Air Transportation Center of Excellence for General Aviation. This team does the actual development of the FITS.

a. An industry team has formed to provide industry guidance to FAA and the FITS team on the FITS Program Plan, team goals and methodology, and initial generic product evaluation. This team includes:

- Aircraft Electronics Association
- Aircraft Owners and Pilots Association-Air Safety Foundation
- Avemco
- Electronic Flight Solutions
- Frasca
- General Aviation Manufacturer’s Association
- Global Air Navigation Services
- Jeppesen
- King Schools
- National Air Transportation Association
- National Association of Flight Instructors

- National Business Aircraft Association
- Small Aircraft Manufacturer's Association
- USAIG

b. The FITS workgroup members include General Aviation and Commercial Division, AFS-800; Regulatory Support Division, AFS-600; Flight Standards Training Division, AFS-500; field inspector union representatives of Professional Airway Systems Specialists (PASS); and field inspector subject matter experts. The workgroup will evaluate the new products in development for the FITS Program and the Flight Standards Service (AFS) Systems Safety Approach for General Aviation initiative pertaining to ASIs in the national PASS bargaining unit in AFS; and develop and provide recommendations regarding these matters to AFS-800 and AFS-500.

11. HOW WILL ASIs BECOME FAMILIAR WITH THE FITS PROGRAM, TAAs, AND ADVANCED DISPLAYS? The FAA has contracted with Embry-Riddle Aeronautical University (ERAU) in Daytona Beach, Florida, to conduct the FAA's General Aviation Piston/Light Twin Instrument Refresher (Course Number 28244). The aircraft will be a TAA equipped with at least a Global Positioning System (GPS) with a moving map display and autopilot. Additionally, ERAU has a Level-6 FTD.

12. WHAT FITS PHILOSOPHIES SHOULD WE EXPECT TO SEE SOON IN OTHER FAA DOCUMENTS? As mentioned in paragraph 3, main causal factors in recent TAA accidents are: poor aeronautical decisionmaking, loss of situational awareness, and bad risk management techniques. Stick and rudder skills were not a major factor. As shown in paragraph 9, Order 8700.1, the latest edition of Order 8710.3, Pilot Examiner's Handbook, and the Practical Test Standards (PTS) will soon be changed. We are not planning these changes due to the long process time for development and implementation of new rules and new or revised advisory circulars for industry use. Instead, we plan to have industry publish FITS for us. Inspectors are encouraged to review these FITS.

13. MUST WE NOW HAVE APPLICANTS DEMONSTRATE PROFICIENCY IN ADVANCED TECHNOLOGIES, INCLUDING GPS AND AUTOPILOTS DURING AN INSTRUMENT RATING OR AIR TRANSPORTATION PILOT CERTIFICATION? Yes, if installed. GPSs are becoming the norm in aircraft certified to operate in Instrument Meteorological Conditions. Consequently, operational knowledge of GPS is essential to the safety of flight. Due to the complexity of flying single-pilot instrument flight rules in today's environment (airspace, aircraft systems, etc.), and the sophistication and reliability of the new generation of autopilots today, operations without an operative autopilot is becoming the abnormal situation. An applicant must be able to demonstrate competence operating both with and without the autopilot.

14. HOW ARE INSPECTORS TO BECOME FAMILIAR WITH DIFFERENT GPS SYSTEMS? With older technology systems, it did not matter who built the system since they all functioned and looked very similar. However, with new technology, systems that perform similar functions may not look alike and pilot interaction with these systems may be completely different. An inspector should be competent in the operation of all systems on an aircraft when performing a flight check. There are some off-the-shelf training programs that should help inspectors become familiar with different GPS systems. The FAA will work on procuring and

distributing these training programs to the FSDOs. Inspectors are also encouraged to fly aircraft under the “4040” program with the systems they will deal with most often.

15. WHAT SHOULD WE DO ABOUT DPEs? DPEs are required to receive recurrent training annually; 1 year at the FSDO and the next at the recurrent DPE seminar in Oklahoma City, Oklahoma. We will be putting together an information package to go to all the FSDOs on changes to the PTS and how FITS will affect them. This information will also be integrated into the initial and recurrent DPE seminar. Also, AFS-600 has published a “Designee Update” that deals with conducting a practical test in a TAA.

16. ARE THE SAFETY PROGRAM MANAGERS (SPM) INVOLVED IN FITS? Yes. SPMs should start integrating FITS philosophies into their seminars. Also, we are developing a new alternative to the WINGS Program to satisfy the flight review requirements of § 61.56. Although all the details have not yet been worked out, this option is oriented to pilots actively flying in the NAS. If a pilot maintains a certain amount of “events based” currency and completes periodic online or compact disc based training modules, flight in an aircraft with an instructor might only be required every 4 years. Like the WINGS Program, this program will be administered by the certificated SPM. Before this program goes into effect, a notice will be sent to all FSDOs and the specifics will be placed on the FITS Web site.

17. HOW WILL FLIGHT INSTRUCTORS BECOME INFORMED AND TRAINED IN FITS? Every 2 years, certificated flight instructors must renew their flight instructor certificate. Most instructors renew their certificate by completion of a Flight Instructor Refresher Clinic (FIRC). AFS-800 is currently working to change the current FIRCs to include FITS. We are developing an information package for the FSDO to give to those instructors who go to their local FSDO to renew their certificate based on their flight instructor record/experience. Additionally, the inspector should sit down with the instructor and brief him or her on FITS.

18. WHERE CAN FAA INSPECTORS, DPES, AND THE GENERAL PUBLIC GET INFORMATION ON FITS? The FITS Web site will contain FITS information and documents. The Web site is www.faa.gov/avr/afs/fits. We are developing a catalog numbering system to assist in finding appropriate documents and information. FAA inspectors are also encouraged to periodically go to the Web site to see what is new. The “What’s New” will contain documents placed on the Web site within the past 6 months.

/s/

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James J. Ballough
Director, Flight Standards Service