



Scenario Based Training, Training Module-Inspectors – Version 1.0



A Guide for Industry and FAA Inspectors on Implementation and Philosophy of FITS



Scenario Based Training, Training Module-Inspectors:
A Guide for Inspectors, Designated Examiners, and Flight Instructors on the
Implementation and Philosophy of FITS

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Federal Aviation Administration (FAA)/Industry Training Standards (FITS) FITS Inspector Training Module

1. Purpose (Task 5 – Training Module-Inspectors)

The purpose of the document is to provide a printed version of the Inspector Training Module developed by the FITS research team. The tasking was

- Develop FITS training module (CD or online) on implementation and philosophy of FITS for both the industry and FAA inspectors.
- Team with industry to complete this task.

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2. Introduction

A. FITS is a partnership between the FAA, academia, and the general aviation industry to develop new training standards for Technically Advanced Aircraft (TAA). Since its introduction, FITS has evolved into one of the most important safety initiatives undertaken by the general aviation community. The FITS program is designed to address the changes introduced by the global positioning system (GPS) and the differences in the units and their operating systems including the data inputting functions and techniques. Recent evaluations of accidents in TAAs and training accidents identified a lack of situational awareness, decision-making, and inadequate risk management as major causal factors. General aviation (GA) training and testing will be changed to address these leading accident causes and further reduce the number of GA fatal accidents.

TAAs are generally defined as new or legacy (older) aircraft that combine some or all of the following design features: advanced cockpit automation system (moving map/GPS/glass flight deck) for instrument flight rules/visual flight rules (IFR/VFR) flight operations, automated engine and systems management, and integrated auto flight/autopilot systems.

B. The revised Instrument Rating Practical Test Standard (PTS) FAA-S-8081-4D (April, 2004) contains several new elements that have been included as a result of the FAA/Industry Training Standards (FITS) research and the development of a training philosophy for TAA.

C. This document is a printed version of the FITS implementation and philosophy web site, which was designed as a guide for inspectors. The web site was specifically designed to help inspectors evaluate training programs for FITS compliance and acceptance. This guidance includes (a) the background and philosophy of FITS, (b) definitions of the terms used, (c) explanations and examples critical elements of a FITS program, and (d) implementation and criteria for FITS compliance and training standards.

3. Objectives

A. The accompanying site and this document were developed to provide inspectors an understanding of the FITS approach to instruction so they may evaluate programs and instructional materials for compliance with the FITS training standards.

B. The objective of this site and document is to develop an understanding of :

- the philosophy of FITS.
- how scenario-based training (SBT) can be conducted in TAA.
- how to evaluate an aviation training program for FITS compliance.
- what must be taught in the training program to meet the FITS training standard, which includes:
 - Aeronautical Decision-Making (ADM)
 - Risk Management (RM)
 - Single-Pilot Resource Management (SRM)
 - Task Management (TM)
 - Automation Management (AM)
 - Situational Awareness (SA)
 - Controlled Flight Into Terrain (CFIT) Awareness

4. Intent

A. The intent of the website and this document is to familiarize instructors, examiners, and the industry with the partnership established by the FAA called FAA/Industry Training Standards (FITS) and the findings of the FITS research team. This will be accomplished through the use of many of the instructional methods recommended by the research team from Embry-Riddle Aeronautical University (ERAU) and the University of North Dakota (UND) to be used in meeting the new training standards required for technically advanced aircraft (TAA).

B. The new training methods are not new to the aviation instructor community; however, they do require an understanding of modern teaching methods and how maneuver-based training and evaluation must be changed to effectively improve aeronautical decision-making. The FITS research team is not saying that the current maneuver-based training techniques and methods are not effective in teaching basic flight skills. The FITS research team is saying that by adopting the strategies and methods use by other disciplines, such as the medical field and creative writing, the aviation instructor community can effective teach decision-making skills while teaching the basic flight skills and aeronautical knowledge.

C. The methods include problem-based learning (PBL) and scenario-based training (SBT). Problem-based learning essentially means to present the learner with a problem or task to be solved. Scenario-based training is one example of problem-based learning. A key element of a FITS program evaluation will be to determine if the problem-based learning allows the learner to solve the problem, to reflect on how he or she solved the

problem, to offer and consider other possible solutions, and then to decide which solution is best. The problem-based approach described above can be used to enhance the development of thinking skills while acquiring other aeronautical knowledge and skills.

5. Philosophy

A. FITS TAA Training Philosophy

(1) The FITS TAA training approach is to train pilots using scenarios rather than maneuver. The FITS approach is structured to emphasize the development of critical thinking and flight management skills. The goal of this new training philosophy is accelerated acquisition of the higher-order thinking skills necessary for aeronautical decision-making to prevent pilot-error accidents in Technically Advanced Aircraft (TAA).

(2) Facilitating Learning

- The pilot must actively engage in the learning process.
- Learning activities must be realistic and authentic
- Authentic to the pilot, in other words, the pilot should believe that it is something that could actually occur and it is undisputed.
- The pilot needs to be able to understand what he or she is learning relative to his or her previous experience.
- Judgment can be taught and learned like any other mental skill.
- The underlying skills needed in making decisions and good judgments need to be developed.

(3) Higher-order thinking skills (judgment and decision-making) include analysis, synthesis, and evaluate (Bloom's higher levels of learning [AIH, 1999, p. 1.10]).

(4) In aviation, decision-making is defined as a systematic approach to the mental process used by pilots to consistently determine the best course of action in response to a given set of circumstances (AIH, 1999, p. 11.8). Outside of aviation, decision-making is defined as both a mental process and mental skills. The mental skills are higher-order thinking skills (analysis, synthesis, and evaluation). That is, the quality of a pilot's decisions would be affected by his or her ability to analyze the situation. These mental skills can be taught by using problem-based learning.

B. Background

(1) The FITS Program is a joint project of the FAA-sponsored Center of Excellence for General Aviation Research (CGAR), University of North Dakota, Embry Riddle Aeronautical University, and the General Aviation Industry.

(2) Previous training philosophy assumed that newly certificated pilots would generally remain in the local area until recently acquired aviation skills are refined. This is no longer true with the advent of Technically Advanced Aircraft (TAA).

Offering superior avionics and performance capabilities, these aircraft travel faster and further than their predecessors. As a result, a growing number of entry-level pilots suddenly have the capability of long distance/high speed travel—and its incumbent challenges. Flights of this nature routinely span diverse weather systems and topography requiring advanced flight planning and execution skills. Advanced cockpits and avionics, while generally considered enhancements, require increased technical knowledge and finely-tuned automation competence. Without these skills, the potential for increased human-error accidents is daunting. A new method of training is required that accelerates acquisition of these skills during the training process.

(3) Research has proven that learning is enhanced when training is realistic and authentic. In addition, the underlying skills needed to make good judgments and decisions are teachable. Both the military and commercial airlines have embraced these principles through integration of Line Oriented Flight Training (LOFT) and Cockpit Resource Management (CRM) training into their qualification programs. Both LOFT and CRM lessons mimic real-life scenarios as a means to expose trainees to realistic operations and critical decision-making opportunities. The most significant shift in these programs has been to move away from traditional maneuver-based training to incorporate training that is scenario-based.

(4) Maneuver-based training puts emphasis on the mastery of individual tasks or elements. Completion standards are driven by regulation, as well as Practical Test Standards, that use flight hours and the ability to fly within plus or minus some specified tolerance as the measurement of competence. The emphasis is on development of motor skills to satisfactorily accomplish individual maneuvers. Only limited emphasis is placed on decision-making, and as a result, when the newly trained pilot goes on to fly in the real-world environment, he or she may be inadequately prepared to make crucial decisions unassisted.

(5) Scenario Based Training (SBT) and Single Pilot Resource Management (SRM) are similar to LOFT and CRM training but tailored to the general aviation pilot's needs. They use the same individual tasks as Maneuver Based Training, but arrange or script them into scenarios that mimic real-life TAA cross-country travel. By emphasizing on each lesson that the goal is getting to a destination safely, the trainee readily correlates the importance of individual training maneuvers to safe mission accomplishment. In addition, throughout the scenario, the instructor poses “What If?” discussions as a means to provide the trainee with increased exposure to proper decision-making. Because the “What If?” discussions are in reference to the scenario, there is a vivid connection between decisions made and the final outcome.

(6) The “What If?” discussions are designed to accelerate development of decision-making skills by posing situations for the trainee to ponder. Once again, research has shown that these types of discussions help build judgment and offset low experience.

Questions or situations posed by the instructor must be somewhat open-ended (rather than requiring only rote or one-line responses.) In addition, the instructor guides the trainee through the decision process by:

- Posing a question or situation that engages the trainee in some form of decision-making activity.
- Examining the decisions made.
- Exploring other ways to solve the problem.
- Evaluating which way is best.

For example: when the trainee is given a simulated engine failure, the instructor might ask questions like:

“What should we do now?” ”Why did you pick that place to land? Is there a better choice? Which place is the safest? Why do you believe that it the best solution?”

Questions of this nature force the trainee to focus on the decision process, which accelerates acquisition of judgment. Judgment, after all, is simply the decision-making, which until now has been learned primarily from experience. It is not innate. All life experiences mold the judgment tendencies brought into flight situations. By artificially injecting decision opportunities into routine training lessons, we speed-up acquisition of experience, and thus enhance judgment and decision-making. For further information, please reference “Aeronautical Decision Making” in the FAA Aviation Instructor Handbook (p. 9.8).

C. FITS Mission Statement:

Ensure pilots learn to safely, competently, and efficiently operate a technically advanced piston or light jet aircraft in the modern National Airspace System (NAS).

D. FITS Imperatives:

(1) The SAFER SKIES initiative is a commitment by the FAA and the aviation industry to significantly reduce the number of general aviation accidents—the majority of which (75%) are pilot- induced. Compounding the challenge of this initiative is the emergence of a new class of technically advanced general aviation aircraft that offer significant improvements in performance and capability. These innovative aircraft are equipped with automated cockpits and attain cruising speeds that require flight management and decision-making skills normally expected from ATP-level pilots; yet they may be flown by pilots with significantly less experience and training. It is imperative that a new training philosophy be implemented to reduce the element of human error and accelerate the acquisition of higher-level judgment and decision-making skills. FITS training recognizes the wide variety of technically advanced systems and their differences when compared to the relatively similar layout found in conventional cockpits.

(2) Within a type of system (e.g. different operations of GPS navigators)

Within categories of advanced technology systems

- Pilot Flight Displays (PFD)
- Multi Function Displays (MFD)
- Traffic Displays
- Weather displays
- Terrain Displays
- Autopilots

Higher-Order Thinking Skills (judgment and decision-making)

- Higher Order Thinking (analysis, synthesis, and evaluation)
- Aeronautical Decision Making
- Situational Awareness
- Pattern Recognition (Emergency Procedures) and Decision Making
- Automation Competence

Aeronautical Knowledge and Skills

- Planning and Execution
- Procedural Knowledge
- Psychomotor (Hand-Eye Coordination) Skill

E. FITS Terms and Definitions

It is imperative that instructional designer, instructor, and/or examiner be familiar with the key terms used in the industry relating to scenario-based training.

(1) Key Terms:

Aeronautical Decision-Making (ADM) – is a systematic approach to the mental process used by pilots to consistently determine the best course of action in response to a given set of circumstances (Aviation Instructor’s Handbook [AIH], 1999, p. 11-8). Note: scholars outside aviation define decision-making as both the mental process and the mental skills. This important difference could lead to significant improvements in pilot decision-making if the necessary mental skills were taught.

Problem-Based Learning (PBL) – is a family of instructional methods that is based on solving a problem or task. Learning occurs when the learner/pilot gets the information he or she needs to solve the problem, in solving the problem, and in reflecting on how they solved the problem or task. Higher-order thinking skills are learned when the learning process included a challenge to consider other solutions, an evaluation of which of the possible solutions was best, and questioned why the learner/pilot believed the decision was best.

Risk Management (RM) – is the part of the decision-making process which relies on situational awareness, problem recognition, and good judgment to reduce risks associated with each flight. The decision-making process involves an evaluation of

each of the risk elements. These risk elements include the pilot, the aircraft, the environment, and the operation. Mitigating the necessary risk and eliminating the unnecessary risk can improve aviation safety.

Situational Awareness (SA) – is being aware of all factors such as traffic, weather, fuel state, aircraft mechanical condition, and the pilot fatigue level or any other factor that may have an impact on the successful completion of the flight. Maintaining situational awareness requires an understanding of the relative significance of the aircraft, pilot, and passengers and their future impact on the flight. When situationally aware, the pilot has an overview of the total operation and is not fixated on one perceived significant factor.

Scenario Based Training (SBT) – SBT is a training system that uses a highly structured script of real-world experiences to address flight-evaluation in an operational environment.

Single-Pilot Resource Management (SRM) – The art and science of managing all resources (both on-board the aircraft and from outside sources) available to a single pilot (prior and during flight) to ensure the successful outcome of the flight is never in doubt.

Technically Advanced Aircraft (TAA) – A General Aviation aircraft that combines some or all of the following design features; advanced cockpit automation system (Moving Map GPS/ Glass Cockpit) for IFR/VFR flight operations, automated engine and systems management, and integrated auto flight/autopilot systems.

(2) Definitions

Aircraft Automation Management – The demonstrated ability to control and navigate an aircraft by means of the automated systems installed in the aircraft.

Automated Navigation Leg – A flight of 30 minutes or more conducted between two airports in which the aircraft is controlled primarily by the autopilot and the on board navigation systems.

An IFR Automated Navigation Leg is flown on autopilot from 500 ft AGL on departure (unless the limitations of the autopilot require a higher altitude, then from that altitude) until reaching the decision altitude (coupled ILS approach) or missed approach point (autopilot aided non-precision approach) on the instrument approach. If a missed approach is flown, it will be flown using the autopilot and on-board navigation systems.

Automation Competence – The demonstrated ability to understand and operate the automated systems installed in the aircraft.

Automation Surprise – The ability of automated systems to provide different cues to pilots when compared to the analog systems they replace, especially in time-critical situations.

Automation Bias – The relative willingness of the pilot to trust and utilize automated systems.

Candidate Assessment – A system of critical thinking and skill evaluations designed to assess a student's readiness to begin training at the required level.

Critical Safety Tasks/Events – Those mission related tasks/events that if not accomplished quickly and accurately may result in damage to the aircraft or loss of life.

Data link Situational Awareness Systems – Systems that feed real-time information to the cockpit on weather, traffic, terrain, and flight planning. This information may be displayed on the PFD, MFD, or on other related cockpit displays.

Desired Pilot in Training (PT) Scenario Outcomes – The object of scenario-based training is a change in the thought processes, habits, and behaviors of the PT during the planning and execution of the scenario. Since the training is “student-centered,” the success of the training is measured in the following desired PT performances:

(I) Learner-Centered Grading involves both maneuver and single-pilot resource management (SRM) grading.

(i) Maneuver Grades (Tasks)

- Explain -- at the completion of the scenario the PT will be able to describe the scenario activity and understand the underlying concepts, principles, and procedures that comprise the activity. *Significant instructor effort will be required to successfully execute the maneuver.*
- Practice -- at the completion of the scenario the student will be able to plan and execute the scenario. *Coaching, instruction, and/or assistance from the CFI will correct deviations and errors identified by the CFI.*
- Perform -- at the completion of the scenario, the PT will be able to perform the activity without assistance from the CFI. *Errors and deviations will be identified and corrected by the PT in an expeditious manner. At no time will the successful completion of the activity be in doubt. ("Perform" will be used to signify that the PT is satisfactorily demonstrating proficiency in traditional piloting and systems operation skills)*
- Not Observed -- Any event not accomplished or required

(ii) Single Pilot Resource Management (SRM) Grades

- Explain -- the student can verbally identify, describe, and understand the risks inherent in the flight scenario. *The student will need to be prompted to identify risks and make decisions.*
- Practice -- the student is able to identify, understand, and apply SRM principles to the actual flight situation. *Coaching, instruction, and/or assistance from the CFI will quickly correct minor deviations and errors identified by the CFI. The student will be an active decision maker.*
- Manage/Decide -- the student can correctly gather the most important data available both within and outside the cockpit, identify possible courses of action, evaluate the risk inherent in each course of action, and make the appropriate decision. *Instructor intervention is not required for the safe completion of the flight.*
- Not Observed -- Any event not accomplished or required.

(II) Grading will be conducted independently by the student and the instructor, then compared during the post flight critique.

(III) Learner centered grading (outcomes assessment) is a vital part of the FITS concept. Previous syllabi and curriculum have depended on a grading scale designed to maximize student management and ease of instructor use. Thus the traditional: "excellent, good, fair, poor" or "exceeds standards, meets standards, needs more training" often meet the instructor's needs but not the student's. The grading scale/system is designed to emphasize two important point in student centered learning. First, the grading system should provide a clear picture about the progress the PT is making during the training. A typical grading scale including outstanding, satisfactory, marginal, and unsatisfactory can be accurate but often carries emotional baggage. That is, student have often been graded by this scale and have learned to identify that they are not doing well if they receive anything other than an outstanding grade on a graded task. Instructors recognize this problem and attempt to avoid sending negative signals to their students. When this happens, students are not given an accurate picture of the progress. This is often complicated by the problem the instructor has in attempting to show adequate progress during initial phases of training when students are not expected to be able to "Manage/Decide," but rather be able to accomplish the requirement with assistance and coaching. Second, the grading scale needs to communicate the instructor's assessment of the student progress clearly to the PT.

The grading scale needs to clearly indicate the student's progress so that the instructor or another instructor understands the PT progress. Thus, the FITS researcher are recommending a grading system that involves a grading scale designed to provide a better picture of the actual PT progress without the

emotional baggage of traditional grading. The learner centered grading described above is a way for the instructor and student to determine the student's level of knowledge and understanding. "Perform" is used to describe proficiency in a skill item such as an approach or landing. "Manage-Decide" is used to describe proficiency in the SRM area such as ADM. Explain and practice are used to describe student learning levels below proficiency in both.

(IV) Grading should be progressive. During each flight, the student should achieve a new level of learning (e.g. flight one, the automation management area, might be a "describe" item by flight three a "practice" item, and by flight five a "manage-decide" item.

Emergency Escape Maneuver – is a maneuver (or series of maneuvers) performed manually or with the aid of the aircrafts automated systems that will allow a pilot to successfully escape from an inadvertent encounter with Instrument Meteorological Conditions (IMC) or other life-threatening situation.

Mission Related Tasks – those tasks required for the safe and effective accomplishment of the mission(s) that the aircraft is capable of and required to conduct.

Multi-Function Display MFD – any display that combines primarily navigation, systems, and situational awareness information onto a single electronic display.

Primary Flight Display (PFD) – any display that combines the primary six flight instruments plus other related navigation and situational awareness information into a single electronic display.

Proficiency Based Qualification – aviation task qualification based on demonstrated performance rather than other flight time or experience.

Simulation – any use of animation and/or actual representations of aircraft systems to simulate the flight environment. Student interaction with the simulation and task fidelity for the task to be performed are considered the requirements for effective simulation.

Training Only Tasks – training maneuvers that while valuable to the student's ability to understand and perform a mission related task, are not in and of themselves required for the student to demonstrate proficiency. However, instructor pilots would be required to demonstrate proficiency in Training Only Tasks.

6. Implementation

A. Practical Test Guidance

(1) The following additional elements have been included in the new INSTRUMENT PTS and will be addressed in this site and document:

- Single Pilot Resource Management
- Inclusion of “scenarios” in the Plan of Action
- Testing in aircraft with electronic flight instrument displays

(2) Single-Pilot Resource Management:

Single Pilot Resource Management (SRM) refers to the “art and science” of effectively managing all resources available to a single-pilot to ensure the successful outcome of the flight to include human, hardware and information resources. It is similar to the Crew Resource Management (CRM) skills emphasized in crew-type aircraft operations, but altered slightly for single-pilot application. Human Resources “...includes all other groups routinely working with the pilot who are involved in decisions that are required to operate a flight safely. These groups include, but are not limited to: dispatchers, weather briefers, maintenance personnel, and air traffic controllers.” SRM is not a single TASK, but rather a set of skill competencies that must be evident in all PTS TASKs as applied to single pilot operations.

SRM is based on sound planning of required tasks and workload, proper use of automation to support the pilot in high stress/activity periods, and a constant reevaluation of the risks (risk assessment). The instrument rating applicant should make timely decisions based on the current situation and an evaluation of possible future outcomes. Historically this has been called “staying ahead of the aircraft.” The table below further defines the task included in SRM skills:

Single Pilot Resource Management (SRM)		
The art and science of managing all resources available to a single-pilot to ensure the successful outcome of the flight.		
Performance	Conditions	Standards
The training task is:	The training is conducted during:	The pilot in training will:
1. Task Management (TM)	Note: All tasks under SRM will be embedded into the curriculum and the training will occur selectively during all phases of training. SRM will be graded as it occurs during the training scenario syllabus.	Prioritize and select the most appropriate tasks (or series of tasks) to ensure successful completion of the training scenario.
2. Automation Management (AM)		Program and utilize the most appropriate and useful modes of cockpit automation to ensure successful completion of the training scenario.

3. Risk Management (RM) and Aeronautical Decision-Making (ADM)		Consistently make informed decisions in a timely manner based on the task at hand and a thorough knowledge and use of all available resources.
4. Situational Awareness (SA)		Be aware of all factors such as traffic, weather, fuel state, aircraft mechanical condition, and pilot fatigue level that may have an impact on the successful completion of the training scenario.
5. Controlled Flight Into Terrain (CFIT) Awareness		Understand, describe, and apply techniques to avoid CFIT encounters; during inadvertent encounters with IMC during VFR flight; during system and navigation failures and physiological incidents during IFR flight.

B. Developing Scenarios

(1) The PTS requires the examiner to evaluate the applicant's ability to use good aeronautical decision making (ADM) procedures in mitigating risks. The examiner shall accomplish this requirement by developing a written plan of action that integrates “scenarios” that incorporate as many TASKs as possible to evaluate the applicant's ability to make safe aeronautical decisions (FAA-S-8081-4D, p. 12).

(2) Why scenarios? Scenarios present decision-making opportunities in a real-world context. It is much more effective to evaluate ADM while involved in an actual flight to a destination. The scenarios should be realistic and derived from real world experiences, and include common or critical malfunctions particular to the aircraft used for the check.

Example SRM Scenario:

As a part of the Instrument Rating Practical Test, the examiner requests that the pilot fly to an airport, other than the departure airport, that has ATC services and at least 1 precision and 1 GPS approach and execute a precision approach to a full stop landing. The aircraft being flown is a brand new Cirrus SR-22 or Diamond DA-40 with a primary flight display (PFD), multi-function display (MFD), global

positioning system navigator (GPS) and a multi-axis autopilot. During the flight, the ceiling and visibility deteriorate significantly, radio chatter becomes very cluttered, and ATC provides clearance to a GPS approach, instead of the ILS originally planned. A pilot who demonstrates proper SRM skills will prioritize the tasks (Task Management) required, such as calling for weather and programming the GPS. While programming the GPS for the approach, the pilot should consider engaging the autopilot and use the data link weather, storm scope and traffic detection capabilities of the MFD to lessen the workload (Automation management and Situational Awareness). If the weather worsens or the pilot feels uncomfortable with the situation, given his or her experience, they may decide to proceed to an alternate airport or return to the point of departure (Risk Management and Aeronautical Decision-Making).

In order for the examiner to properly evaluate an applicant's use of SRM, applicants must understand that they are expected to make all the decisions. This does not preclude the requirement to hand-fly specified procedures; rather it will give the examiner a better picture of how the applicant will operate the aircraft in the real world of IFR flying.

Note: The applicant or student is required to plan and execute the entire flight without assistance. The flight profile should be agreed upon prior to beginning the planning to ensure that the applicant or student can develop and execute the plan with minimum interruptions.

(3) During the practical test, the examiner should not prompt the applicant or give away the solution to the scenario at hand. The applicant must be able to demonstrate that he/she can logically determine an appropriate course of action and execute it. It is not enough for the applicant to simply say "This is what I am going to do." They must execute their plan; and right or wrong, the examiner should let them follow through with it, providing it does not affect the safety of the flight. If it is an inappropriate decision, the applicant must without assistance recognize that he or she has selected an inappropriate plan and revise the plan.

(4) Here are some additional scenarios that could be used to test an applicant's aeronautical decision-making abilities.

Example: The electrical systems in the more modern "all electric" technically advanced aircraft are generally more elaborate than traditional aircraft. Therefore, it is important to have a good understanding of what happens when your primary electrical system malfunctions, and how this affects the flight and onboard equipment such as the PFD and MFD. Therefore, if an alternator malfunction warning light illuminates, while in IMC and 60 minutes from the destination, what does the applicant do given the degree of criticality?

(5) Scenarios do not always have to include system failures.

Example: Inside the IAF the examiner tells the applicant that the airport has just closed due an aircraft accident. What does the applicant do?

(6) Abbreviated list of possible “failure” and “event” scenarios -

- Communication failure
- Alternator Failure
- Instrument Failure (such as PFD)
- Equipment failure (MFD)
- Navigation failure (GPS or VOR)
- Inadvertent weather (ice)
- Inadvertent thunderstorm penetration
- Autopilot failure when engaged at a critical time (i.e. turn and/or turning climb/decent)
- Autopilot induced unusual attitude
- Flaps malfunction

C. Developing a Plan of Action

(1) Ideally, the plan of action for an instrument practical test will consist of a three to four leg cross-country flight, with each leg at least 20 minutes in length. The goal for each leg is to conduct predetermined scenarios to evaluate the applicant's aeronautical decision-making in conjunction with the TASKs outlined in the PTS. An instrument approach, missed approach, and landing could be completed at each destination. After landing or termination of the approach, the applicant will be given the opportunity to “reset” for the next scenario. If the cross-country legs are too short, the applicant will not have sufficient time to thoroughly resolve any issues and the likely response will be, “I am going to land the airplane—I am at my destination.” As a result, no thought is put into solving the problem.

Reminder: Scenarios must allow for the testing of all required PTS tasks.

(2) Example: Plan of action

The applicant will be required to plan a cross-country flight to three different destinations to a landing at each of the destinations. Two flight plans are needed one for the applicant to plan and the other for the examiner’s plan of action. The applicant would plan the flights according to the first flight plan, while the examiner’s plan of action will include the events and problems that will challenge the applicant to make decisions that may and often should lead to diverting to an unplanned destination. By introducing or giving the applicant the event or problem at specific points of the flight, the examiner can control the available options; thus, the examiner can control where the applicant will actually land and allow all required PTS tasks to be completed. Additionally, examiners should consider the duration of the practical test based on the actual flight rather than the planned flight.

Leg 1

The first leg should be planned approximately 1-2 hrs. About 15 minutes into the flight (after applicant is on course, picked up clearance, and completed all checklists) add weather (thunderstorms or icing for example) to scenario. The weather event should cause the applicant to make a decision to divert; subsequently, the applicant must be able to fly an approach within PTS. Applicant must utilize in-flight weather data link (if installed), and/or flight service to obtain the necessary weather information for the diversion airport. "Correct decision-making will be evaluated."

Leg 2

Applicant will depart diversion airport after determining the weather has passed or improved for the intermediate airport. This airport should be approximately 30 minutes away. About half way to intermediate airport, the applicant should be given an electrical malfunction (for example: an alternator failure). Applicant must decide whether to obtain a holding clearance to analysis and handle the malfunction or proceed (evaluate the applicant on the decisions made that lead to a safe landing at the intermediate airport).

Note: upper air work such as steep turns and unusual attitudes can be accomplished prior to the introduction of weather or malfunction scenario on either leg.

Leg 3

Give the applicant a PFD failure just before the initial decent for landing at the final destination. Applicant must complete an instrument approach using the stand-by instruments within PTS.

Note: in the following diagram that leg 1 is terminated before reaching the planned destination due to the weather problem given to the applicant during the leg. Time the introduction of the weather scenario so that the diversion will be to an airport that is about 30 minutes from the third airport. Leg 2 will need to be planned at the diversion airport. Leg 3 will be conducted as originally planned up to the initial decent for landing when the PFD failure is presented.

Sample Flight Plan Profile



D. Testing in aircraft with Electronic Flight Instruments

(1) Modern technology has introduced a new method of displaying flight instruments, such as Electronic Flight Instrument Systems, Integrated Flight Deck Displays, and others. For the purpose of the practical test standards, any flight instrument display that utilizes LCD or picture tube-like displays will be referred to as “Electronic Flight Instrument Displays.” Aircraft equipped with this technology may or may not have separate backup flight instruments installed. The abnormal or emergency procedure for loss of the electronic flight instrument display appropriate to that particular aircraft will be evaluated in the Loss of Primary Instruments TASK. If the aircraft is capable, total failure of the electronic flight instrument display, or a supporting component, with access only to the standby flight instruments or backup displays, shall be evaluated. Additional guidance on simulating the failure of the primary flight display and use of the standby flight instruments is provided on the FAA FITS web site <http://www.faa.gov/education_research/training/fits/guidance/>.

(2) The applicant is expected to utilize the autopilot and/or flight management system (FMS), if properly installed, during the instrument practical test to assist in the management of the aircraft. The examiner is expected to test the applicant's knowledge of the systems that are installed and operative during the oral and flight portions. Additionally, the applicant is required to demonstrate the use of the autopilot and/or FMS during one of the non-precision approaches.

(3) If the practical test is conducted in the aircraft, and the aircraft has an operable and properly installed GPS, the applicant must demonstrate GPS approach proficiency when asked. If the applicant has contracted for training in an approved course that includes GPS training in the system that is installed in the airplane/simulator/FTD and the airplane/simulator/FTD used for the checking/testing

has the same system properly installed and operable, the applicant must demonstrate GPS approach proficiency. When a practical test is conducted for a 14 CFR part 135 operator, the operator's approved training program is the controlling authority.

E. Examiner/Inspector Responsibilities when Conducting a Practical Test

(1) It is the examiner's/inspector's responsibility to have a thorough knowledge of the equipment to be used during the testing. This, combined with the examiner's/inspector's experience, should lead to a comprehensive test of the applicant's ability to handle normal, abnormal, and emergency procedures in a technically advanced aircraft.

Note: System Failures should never be conducted in actual instrument conditions. System failures in Instrument conditions may adversely affect the safety of the flight due to many unknowns, including applicant's reaction to a given failure, which could adversely affect other systems in the aircraft.

(2) It is the examiner's/inspector's responsibility to test the applicant's ability to handle both normal and abnormal situations in the aircraft. The examiner should, however, allow the applicant to explore his/her options utilizing other equipment in the aircraft including: reversionary modes, displaying information on another piece of equipment, and use of autopilot to reduce workload. This will show that the applicant has the aeronautical decision-making and systems knowledge needed to minimize risk and reduce pilot workload. After the applicant has made a decision on how to deal with a specific malfunction, the examiner/inspector may have to alter the scenario to get the desired results, but should allow the applicant to carry out the decision, unless the safety of the flight is not maintained.

Example: If an examiner/inspector fails the PFD, a logical response would be to have the autopilot fly the aircraft so that pilot workload is reduced until the situation is under control. This is an appropriate response; but the examiner may want the applicant to hand fly the approach which might require the examiner to further modify the scenario by informing the applicant that the autopilot is malfunctioning and will not be available for the remainder of the approach. However, the examiner/inspector should consider if this is a realistic situation; good judgment may cause the pilot to never such attempt to hand fly the approach under these conditions (especially under actual IFR conditions).

(3) For the most part, it is inadvisable to conduct multiple malfunctions, as they have a tendency to unrealistically overload the applicant and create to an unrealistic scenario.

Reminder: Scenarios must allow for the testing of all required PTS tasks.

(4) In conclusion, developing a good plan of action with imbedded events and problems, and conducting a comprehensive evaluation in technically advanced aircraft may take more time and effort than the traditional check ride, but the result is a better prepared pilot navigating the national airspace system with greater safety.

F. SRM: “5P” Check

(1) A tool that is available to the pilot, to aid in sound planning, in the proper use of automation, and in the constant reevaluation, is the SRM “5P” Check. The 5P Check includes (a) plan, (b) plane, (c) pilot, (d) passengers, and (e) programming.

SRM “5P” Check	
Plan	Weather Route Publications ATC reroutes and delays Fuel remaining
Plane	Mechanical status Automation status Database currency Circuit breakers Backup systems
Pilot	“I”llness “M”edication “S”tress “A”lcohol “F”atigue “E”ating
Passengers	Pilot/s or non-pilot/s Nervous or quiet Experienced or new Helpful or a handful Urgent or optional Business or pleasure
Programming	Preprogram the: Autopilot GPS MFD/PFD Anticipate: Likely reroutes and clearances “Crunch” points Manual backup High terrain encounters

	<p>Questions:</p> <ul style="list-style-type: none"> A. What's it doing B. Why is it doing that C. Did I do that
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(2) The SRM “5P” Check “Decision Points”

- Before leaving the flight planning room.
- Before leaving the ground
- Hourly (every second fuel check)
- Before leaving cruise altitude
- Before leaving the IAF/FAF.

<p>SRM Decision Process</p> <p>At several predetermined decision points consider the following.</p>
<p>What's the situation? The 5 P's (Plan, Plane, Pilot, Passengers, and Programming)</p> <p>What's changed since your original GO/NO GO decision?</p> <p>What negative outcomes are you more exposed to during flight?</p> <p>Engine failure</p> <p>Avionics failure</p> <p>Missed approach</p> <p>Pilot overload</p> <p>Becoming fatigued</p> <p>Mistakes on approach/final</p> <p>CFIT</p> <p>Fuel exhaustion</p> <p>Icing, loss of control.</p>
<p>What can you do to minimize the increased risk?</p> <p>Use automation to reduce workload/increase awareness</p> <p>Use MFD to maintain terrain/weather/traffic awareness, etc.</p> <p>Use passengers to share workload/monitor environment</p> <p>Request</p> <ul style="list-style-type: none"> • A simpler/easier approach • Single frequency approach • Vectors to final • Change (clear of clouds, lower altitude more oxygen) <p>Declare minimum fuel</p> <p>Turn down “difficult” ATC requests</p>
<p>Prioritize tasks</p> <p>If we can't do everything well, at least get the important things right</p> <p>What are they?</p> <p>What can we “shed?”</p>

Is the resulting risk acceptable?
Would I have taken off knowing this was going to happen?
If not, divert/terminate the flight early.

G. FITS Curriculum Acceptance Criteria:

(1) The criteria for the FITS training should always include the three concepts of Problem-based Learning (PBL) (Scenario Based Training [SBT]), Single Pilot Resource Management (SRM), and Learner Centered Grading. Additionally, FITS syllabus and curriculum should not be delivered unless the flight instructor has completed the “FITS Master Instructor Syllabus available on the FAA FITS website <http://www.faa.gov/education_research/training/fits/training/generic/>. This syllabus is generic in nature and is designed to help the instructor learn how to apply the FITS principles in day-to-day instructional scenarios. A description of the key FITS principles are provided on page 6, which includes PBL, SBT, SRM, and Learner Centered Grading.

(2) A manufacturer-developed curriculum that uses the Generic FITS syllabi (found on the FAA FITS website as its basis should have no trouble gaining FITS acceptance. FITS acceptance is achieved by submitting an aircraft/manufacturer specific curriculum to:

FITS Program Manager, AFS-800
800 Independence Avenue, SW, Washington DC, 20591
202 -267-8212

until FAA Order 8700-1, Chapter 35 is implemented.

H. Issuing a FITS Acceptance (See FAA Order 8700-1, Chapter 35 for additional guidance).

(1) The FITS program goals are to implement training that reduces pilot error and accelerates acquisition of higher-order thinking skills required for aeronautical decision-making. The FITS focus is to reduce exposure to risk by improving each pilot’s decision-making skills. The GA community’s businessman using a TAA, as a transportation tool is an example of where FITS can produce significant safety gains. Although FITS originally focused on TAAs, FITS tenets will apply to more than just TAAs.

(2) The FITS Technical Team did research into training and looked at the aviation operations that have the best safety record (air carrier and military). This research indicated that development of better ADM, RM, and SA could be achieved through problem-based learning including scenario-based flight training. FITS programs use scenario-based training that integrate RM, ADM, SA, and SRM into every flight operation and problem-based learning in non-flight training can effectively enhance

aeronautical decision-making. Little in FITS training is new. FITS implements some of the aspects of air carrier and military training programs into the GA training arena.

(3) The FITS Technical Team includes AFS-800 personnel and members from two of the universities in the Center for General Aviation Research (CGAR). The CGAR is a part of the FAA Center of Excellence (COE). For information on the COE go to www.coe.faa.gov. For information on the CGAR go to www.cgar.org.

(4) FITS is not a regulatory requirement and can be implemented within the current regulations. AFS-800 has developed incentives for operators to implement FITS into their training programs.

(5) A FITS training program addresses the nature of training:

- Basic Aeronautical skills (“physical” airplane)
 - Required motor skills
 - Fundamental Maneuvers
 - Operation of Complex Equipment (“mental” airplane)
 - Advanced avionics
- Operation in National Airspace System (ATC, airspace, etc.)
 - Higher Order Safety Skills
 - Single pilot resource management
 - Aeronautical decision making
 - Risk Management
 - Situational awareness and hazard avoidance

There are 4 levels of FITS accepted syllabi. The objective of the training and what FITS criteria is met, will determine the level of FITS acceptance. Paragraph J of the section describes the FITS Acceptance Levels.

I. FITS are FAA/GA industry developed training programs acceptable to the FAA. There are currently three categories of FITS products:

(1) Generic FITS Programs. Generic FITS programs will be developed for a broad category of training functions for general GA usage such as the flight review, complex and high performance training, and other functions. Individual training entities (pilot schools, training centers, individual instructors, etc.) may adapt them for a particular aircraft or other desired training outcomes.

(2) Specific FITS Programs. Specific FITS programs have been, and will continue to be, developed as new aircraft and technologies are introduced to the marketplace. For example, Garmin has introduced a specific FITS program to train pilots on the use of their 430/530 family of avionics. Another specific FITS might be for one aircraft type. These training standards may be integrated with the Generic FITS Programs (above).

(3) *Mandatory FITS in Accordance with 14 CFR section 61.31(h)*. In rare instances, the FAA may elect to invoke Title 14 of the Code of Federal Regulations (14 CFR) part 61 section 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 a mandatory FITS program, notice and/or public comment would normally be required through the Federal Register to implement this provision. Implementation could be through an amendment to the aircraft flight manual, with reference to the FITS standard directory.

J. Except as described in paragraph 6(I)(3), FITS is completely voluntary. There is no requirement for any training entity to adopt the FITS training philosophy. FAA is working with the GA industry to provide incentives for pilots and training operators to adopt and use FITS. The following are some possible incentives:

(1) Lower insurance costs (or in some cases just the availability of insurance) if the pilot is trained under an accepted FITS Program. One major insurance carrier has already agreed to a 10 percent discount for pilots who complete FITS recurrent training that includes ADM and RM. This same insurance provider has made FITS-accepted training mandatory for their clients who purchase new “glass” panel-equipped aircraft.

(2) Other insurance-related cost saving incentives may result from the use of a FITS Program. All insurance carriers impose experience requirements for 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 training from an insurance carrier approved flight instructor. The FITS team will work with insurance carriers to demonstrate how FITS can substantially reduce the number of required flight training hours by providing training that addresses the specific causal factors associated with many GA accidents. For example, FITS may be able to reduce 25 hours of required make and model training down to 5 hours, thus reducing the operator’s overall instructional costs.

(3) There are four basic types of pilot training-initial, recurrent, transition, and equipment specific. The FITS team has developed some generic syllabi that a training provider can use to develop its specific FITS compliant curricula. Generic FITS syllabi are on the FITS website at http://www.faa.gov/education_research/training/fits/training/generic/. When additional syllabi are developed, they also will be placed on the FITS website. Following the generic curricula is not required. They are provided to the general public to use as a guideline, if they wish to use them.

(4) Standard procedures for approval of a curriculum will be used when receiving and evaluating a request for FITS acceptance by a training entity. The FSDO will be responsible for acceptance or denial of a request for FITS from pilot schools (both part 61 and 141), individual flight instructors, and training centers. All requests for FITS from Original Equipment Manufacturers or training developers (Jeppesen, Electronic Flight Solutions, Sporty’s, etc.) will be referred to the FITS Program Manager at (202) 267-8212.

K. Levels of FITS Acceptance

The following are the levels of FITS acceptance:

- (1) Accepted FITS Flight Syllabus: Will incorporate all the tenets of FITS and include flight training in an aircraft and/or an Aviation Training Device or Flight Training Device. Examples of this type of flight syllabus include initial, transition, and recurrent training syllabi.
- (2) Accepted FITS Ground Syllabus (no actual in-flight training): Will incorporate all the tenets of FITS. Application of this level of acceptance is not intended to teach the pilot in training (PT) psychomotor pilot (“stick and rudder”) skills or full cockpit/aircraft integration in a certain aircraft. It is intended to enhance certain skill sets of the PT such as teaching the PT how to use a new glass cockpit display or develop better SRM skills. This ground-based training can incorporate the use of an Aviation Training Device, Flight Training Device or partial task trainer. A FITS Accepted Ground Syllabus will be interactive in real-time and led by an instructor.
- (3) Accepted FITS Self-Learning Program: May be either an interactive computer software program or on-line (distance-learning) course on a specific application or subject. The purpose of this training is for the PT to learn about specific equipment or systems, or to enhance a specific higher order thinking skill. Scenario training and testing is required. Since it does not need to be interactive in real-time and led by an instructor, Learner (Student) Centered grading is not required.
 - If the program is targeted for a piece of equipment (i.e. specific GPS unit), the equipment should act like the targeted equipment during the interaction with the equipment, to a point (It is not expected that a CD program to emulate all possible errors in a scenario. But basic error inputs should result in the program reacting the same way the piece of equipment would act.). After basic familiarization training on the equipment, scenarios should be used to demonstrate PT proficiency and knowledge. The program should allow the PT to make errors and demonstrate the consequences of those errors.
 - For non-equipment programs (i.e. ADM development), scenarios with multi-string testing should be used. Information on single-string and multi-string can be found in the FITS Piston Technically Advanced Recurrent training Syllabus and Standards on the FITS website.

Since an Accepted FITS Self-Learning Program would probably be marketed nationally, FITS Self-Learning Programs are only accepted by the FITS Program Manager.

- (4) Accepted FITS Supporting Materials: These products do not meet the training tenets of FITS (i.e. may not be scenario based), but the subject matter of these supporting materials is integral to FITS. These products could be accepted on their own technical merit, but only as a part of an accepted FITS Flight or Ground Syllabus or FITS Self-Learning Program. For example, a CD on RM could be accepted as supporting a FITS transition syllabus. Accepted FITS Supporting Materials do not need to be reviewed or evaluated by the FSDO inspector when submitted as part an entire FITS syllabus. FITS Supporting Materials are normally developed by an

original equipment manufacturer or type-certificate holder (i.e. Cessna, Cirrus, Eclipse, etc.) or a developer of training materials (i.e. Sporty's, Jeppesen, ASA, etc.) and are accepted by the FITS Program Manager.

L. Evaluating a Curriculum

(1) A POI may receive a request for FITS acceptance for a variety of courses at certain levels of FITS. This may include pilot certification courses, transition courses, avionics courses, recurrent/currency (§§61.56, 61.57(d), or §61.58). When reviewing and evaluating a curriculum that has been submitted for FITS acceptance the, following must be considered:

- *Scenario Based Training (SBT)*. Helps develops better ADM, RM, and SA skills than could be achieved through traditional maneuvers based training. SBT is not only applicable in flight. It can be also used during partial task training and ground training. For example, if a flight school uses a desktop GPS unit for training, instead of simply demonstrating how each button performs, a scenario can be developed so that the student receives a clearance, inputs a flight plan and actually conducts the flight. The instructor can act as ATC giving route changes, emergencies (using nearest airport function), weather changes (students need to make decisions on whether to continue or divert), approach changes, missed approached, etc. The inspector must ensure that the scenario is:
 - Valid. That the scenario will teach what it is designed to teach.
 - Realistic. Multiple failures of different systems all at the same time may not be realistic

While it is important to introduce scenarios as early as possible (to encourage the development of proper judgment and decision making skills) this should not preclude flights devoted to specific skills such as landings and takeoffs that require practiced hand-eye coordination skills. New maneuvers should be introduced through the integrated use of simulation. For instance, a student should first learn what the functions are in a GPS desktop trainer before moving on to integrated scenarios.

(2) Single Pilot Resource Management (SRM). SRM integrates all of the following concepts:

- Aeronautical Decision Making and Risk Management
- Automation Management
- Task Management
- Situational Awareness
- Controlled Flight Into Terrain (CFIT) Awareness

Traditional GA instruction often left out this training and the use of the autopilot. Today, with advanced technology and a changing NAS, flight under IFR without a functioning autopilot should be considered, for many aircraft and/or operations, an abnormal situation. When evaluating a curriculum, the course must include:

- Aeronautical Decision Making and RM. Initially, the instructor must guide the PT through the ADM and RM process. As the student's ADM and RM develop, the instructor should allow the student to make more and more decisions. The instructor will be asking questions on the decisions the pilot has made. For example, the PT is conducting a diversion, questions might be: Why did you pick that airport? What other airports would have also been adequate? Why did you not pick one of the others?
- Automation Management. The Instrument Practical Test Standard (FAA-S-80801-4) requires an applicant "to utilize an autopilot and/or flight management system (FMS), if properly installed, during the instrument practical test to assist in the management of the aircraft." Understanding when to use, or more importantly, when not to use certain levels of automation should also be part of a FITS accepted curricula.
- Task Management (TM). To prioritize and select the most appropriate tasks (or series of tasks) to ensure successful completion of the training scenario.
- Situational Awareness (SA). Appropriate training on instruments and cockpit displays will enhance SA. Depending on the equipment in the aircraft SA training may include not only where the aircraft is along the route of flight, but also where and how close terrain and obstacles are (terrain database), weather phenomena (data link), and other traffic (ADS-B, FIS-B etc). Limitations of these displays must be emphasized. Fidelity of datalink weather may restrict using it tactically, displays of other aircraft may depend on proximity to certain enroute radar sites and equipage of other aircraft. Research indicates that these displays may distract pilots from performing their see and avoid responsibilities.
- Controlled Flight into Terrain (CFIT). Awareness ties directly with SA training.

M. OEM FITS Acceptance.

Some aircraft manufacturers (Original Equipment Manufacturer or OEM) have developed a national FITS acceptance system. The OEM has at least a FITS accepted transition and instructor syllabus. These manufacturers requires that instructors in their organizations who sell or rent aircraft (pilot schools, distribution centers, FBOs, etc.) complete their FITS accepted transition and instructor training. These instructors use the OEM FITS accepted transition and recurrent syllabi (tailored to the individual organization) to conduct FITS training. In this case these organizations automatically fall under the OEM acceptance and do not require FITS acceptance from the FSDO.

N. Separation of FITS Acceptance and 141/142 Approval.

There are many curricula approved under parts 141 and 142 that do not meet FITS acceptance. FITS review and acceptance must be conducted on its own merit. A denial of FITS acceptance conveys no determination on any other approval the operator may already have obtained.

O. Procedures

(1) Applicant requests FITS acceptance for a flight syllabus (initial, recurrent, transition, course of pilot training under 61, 141, or 142.)

- If the applicant/course is an original equipment manufacturer (OEM), or is contracted by OEM to conduct transition training, refer the applicant to the FITS Program Manager, AFS-810, (202) 267-8212.
- If the applicant requests acceptance of a FITS self-learning program or FITS supporting material, refer the applicant to the FITS Program Manager, AFS-810, (202) 267-8212
- If the applicant/course is from a Part 61 pilot school (which includes individual flight instructors), a part 141 pilot school, or a Part 142 training center and requests acceptance of a FITS Flight Syllabus or a FITS Ground Syllabus, accept the application, conduct the evaluation and accept or deny the syllabus as appropriate.

(2) If the inspector receives a request for FITS acceptance from a developer of nationally distributed training materials (i.e. ASA, Jeppesen, King), refer the applicant to the FITS Program Manager, AFS-810, (202) 267-8212.

P. Evaluation

For FITS acceptance of the curriculum the inspector must not only evaluate the curriculum, but must ensure the materials contain enough information to provide for instructor familiarization.

(1) The course must meet the intent of FITS. While it is important to introduce scenarios as early as possible (to encourage the development of proper judgment and decision making skills) this should not preclude flights devoted to specific skills such as landings and takeoffs that require practiced hand-eye coordination skills. New maneuvers should be introduced through the integrated use of simulation. The following tenets should be included in the course and integrated into almost every lesson:

- Aeronautical Decision Making and Risk Management
- Automation Management
- Task Management
- Situational Awareness
- Controlled Flight Into Terrain (CFIT) Awareness

The course must be designed so that the instructor can evaluate these tenets.

(2) The instructors should have a good knowledge of how to conduct scenario based training. It is preferable that the instructor has successfully completed a FITS accepted CFI training. Although the scenarios in the syllabus should be descriptive enough to ensure scenario based training is conducted and the tenets of FITS are successfully accomplished.

(3) If the applicant is a Part 141 pilot school or a 142 training center request FITS acceptance at the same time they request course approval, it is possible that their course may be approved under those respective regulatory parts, but not meet the FITS criteria. If this is the case, the inspector should inform the applicant why the curriculum does not meet the FITS criteria. It is then up to the applicant if it wants to either:

- Make changes to the curriculum to receive FITS acceptance concurrently with the approval of the course,
- Have the syllabus approved under 141 or 142, as applicable, and then make changes to the syllabus to meet FITS acceptance; or,
- Cancel the request for FITS acceptance and have the syllabus approved under part 141 or 142, as applicable and resend the request for FITS acceptance. In this case the applicant can request FITS acceptance at a later date with a request for a change in their curriculum.

(4) FITS Accepted Supporting Material. If the operator is requesting FITS Flight Syllabus or FITS Ground Syllabus acceptance and the package contains FITS Accepted Supporting Material, that material may be accepted without further review as long as the following conditions are met:

- The material is appropriate to the curriculum,
- The FITS Accepted Supporting Material has a current and valid letter of acceptance; and
- The operator has permission from the developer of the FITS Accepted Supporting Material to use the material in their program.

NOTE: FITS Accepted Supporting Material is evaluated and accepted by the FITS Program Manager.

References

- AFS-600 Designee Update Testing in Technically Advanced Aircraft –
http://www.faa.gov/education_research/training/fits/guidance/media/du_special_edition.pdf
- G1000 Guide for Designated Pilot Examiners and Certified Flight Instructors –
http://www.faa.gov/education_research/training/fits/guidance/media/G1000.pdf
- FAA Order 8700-1, Chapter 35 (Issue a FAA-Industry Training Standards (FITS) Acceptance when Requested by a Flight School, Training Center, or Other Training Provider) –
- FITS Generic Instructor Syllabus –
http://www.faa.gov/education_research/training/fits/training/generic/media/instructor.pdf
- FITS Generic Transition Syllabus –
http://www.faa.gov/education_research/training/fits/training/generic/media/FITS%20Accepted%20TAA%20Transition%20Training%20Master%20Syllabus%20ver%201.0.pdf
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http://www.faa.gov/education_research/training/fits/guidance/media/whitepaper.doc

Related Links

Federal Aviation Administration (FAA) – <http://www.faa.gov>
Center of Excellence General Aviation Research (CGAR) – <http://www.cgar.org>
FAA/Industry Training Standards (FITS) –
http://www.faa.gov/education_research/training/fits/
FITS Instructor Guidance –
http://www.aero.und.edu/inet/FITS/FITS_Site/Inst_Homepage.htm
FITS Inspector Guidance --
http://www.aero.und.edu/inet/FITS/FITS_Site/Homepage.htm
UND Aerospace – <http://www.aero.und.edu>