



# The View from Washington

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## The Language of Field Approvals

**A**s I write this in late December I'm reminded that a short 99 years ago our careers, our industry, our passion emerged from the soft sand of Kill Devil Hills, N.C. As we look back at the past century of flight, we also see the emergence of the language of aviation. If for one minute you doubt that aviation has a language of its own, just start talking about ailerons, fuselages or empenages in the presence of laypersons and the blank stares and courteous nods tell you that you are speaking a foreign language.

While many of the terms used in aviation predate the Wright Brothers, the language of aviation is but a child in the world of linguistics; a child that is constantly changing, growing and developing. A language where the meaning of words changes and then changes back again; a language where miscommunication is common. Listen to a pilot describing a discrepancy to a maintenance technician; it becomes clear that while both are speaking aviation-ese, pilots and mechanics speak different dialects of the same aviation language.

In my work here in Washington, language is critical. Definitions are essential and making sure that both the sender and the receiver both understand the words that are being used and what those words mean and quite often, what they don't mean.

The Aging Transport Systems Rulemaking Advisory Committee (ATSRAC) working group evaluating general aviation aircraft was submitting their final report of 39 aircraft inspections to the full committee. In

their finding they reported wire bundle discrepancies such as "significant dust and lint buildup on wiring bundles," "excessive slack/sag between clamps," and "inadequate clearance to structure." The committee is from the large transport/airline community and, when evaluating large transport category aircraft four years ago, they found lint buildups that were measured in inches. The finding of lint in GA aircraft could be measured in mil-

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limeters. However, because the working group did not define these terms correctly, when the final report is read by the committee and subsequently by the FAA, they will read that GA had the same excessive (inches) lint buildup that the large transport category aircraft had.

I had a member call recently asking about what rating a repair station needed to install and maintain a blind encoder. The FAA has published an AC that implies that an Instrument Rating is required, however according to the definitions in Part 1 of the FARs, a blind encoder doesn't appear to be an instrument. As of this writing, this issue is being resolved at FAA headquarters. But, the lack of consistency in terms may cause some repair stations to apply for a rating they do not need and others to be violated for not having the rating. The lack of a clear definition and the lack of mutual

understanding of the definition will ultimately lead to costly errors on both the part of the FAA and industry.

Today, the most misused and misunderstood phrase in aviation is the infamous "Field Approval."

I have sat on numerous committees with representatives from Transport Canada. For years I have listened to the discussions about the flawed process in the United States whereby the FAA allows Field Approvals.

Recently I had the opportunity to participate in a briefing by Transport Canada certification engineers and, while they do not have a "Field Approval" process, per se, they have a similar process for the approval of engineering data for making in-service alterations to aircraft and systems. The words are different but the meaning is similar.

At a meeting recently with members of another aviation association we were discussing the procedures for documenting the installation of an STC'd alteration. As he described filling out the FAA Form 337 to document the installation of the STC he referred to filling out and submitting the form as a "Field Approval."

The term Field Approval clearly has a life of its own and if you were to ask any two persons to define a Field Approval you would most likely get at least three answers.

Undefined terms mean different things to different people. The term may be perfectly correct to each individual based on his or her background and intent but wrong when spoken to another. The term "Field Approval" has acquired an abstract definition that ranges from the process of filling out a FAA Form 337 to the final review of the form by an FAA inspector prior to forwarding it on to Oklahoma City for filing. And while the term tends to have a similar meaning for the 4,000 or so aviation safety inspectors working in Flight Standards, the engineers on the certification side of the FAA have a far different understanding of the term. Add to that the 30,000 repairmen and the 197,000 A & Ps and you have a quarter of a million different definitions about a term that is essential to the aircraft upgrades the owners and operators of today's aircraft demand for safety and efficiency.

### **So what does the term "Field Approval" mean?**

FAA Order 8300.10, Volume 2, Chapter 1 defines a "Field Approval" as an approval, by the Administrator, through an authorized aviation safety inspector (ASI) (airworthiness), of technical data and/or installations used to accomplish a major repair or major alteration.

Order 8300.10 further explains that a Field Approval is one of the means used by the Federal Aviation Administration (FAA) to approve technical data used to accomplish a major repair or major alteration. Technical data so approved becomes "technical data approved by the Administrator."

### **Then what does a Field Approval not mean?**

Although often misused, the term Field Approval is not synonymous with an in-service alteration. While a Field Approval may be the basis for

approved data necessary to perform a major alteration, it is not in itself an approval for an "in-service" alteration.

Section 43.7 (c) of the FARs authorizes the holder of a repair station certificate to approve aircraft, airframes, aircraft engines, propellers, appliances, or component parts for return to service after an alteration based on the limitation in Part 145.

Section 145.51 allows a certificated domestic repair station to alter any airframe, powerplant, propeller, instrument, radio, or accessory, or part thereof, for which it is rated and approve for return to service any article for which it is rated after it has been altered. However, Section 145.51 specifies that a certificated repair station may not approve for return to service any aircraft, airframe, aircraft engine, propeller, or appliance after a major alteration unless the work was done in accordance with technical data approved by the Administrator.

A Field Approval is one of the means available to a repair station to meet the requirements for "technical data approved by the Administrator" necessary to accomplish a major alteration.

Are there other sources of "technical data approved by the Administrator" that will meet the requirements of Section 145.51?

FAA Order 8300.10 provides 18 examples of sources of Approved Data. This list includes, in addition to the local FAAASI, Supplemental Type Certificate (STC) data, FAA Form 337, which has been used to approve multiple identical aircraft, by the original modifier (NOTE: ASIs no longer approve data for use on multiple aircraft), and Designated Engineering Representative (DER)-approved data, only when approval is authorized under his/her specific delegation.

### **If I use a DER, do I still need a Field Approval?**

No. FAA Order 8300.10 explains that if the applicant employs an appropriately authorized DER and the data addresses the entire alteration, and all of the requirements of part 21 and part 43 are met, there is no requirement for any further approval by the ASI.

However, if the applicant employs an appropriately authorized DER to provide supporting data only for a field approval, then the ASI should coordinate activities with both the applicant and the DER.

The Order makes a point that although DER data is not a field approval, it is approved data, which, like other approved data, can be used to perform major alterations or repairs without further approval. The other 18 sources of approved data also are not Field Approvals. Only the act of the FAA field Airworthiness Safety Inspector (ASI) approving alteration or repair data (or the installation in lieu of the data) constitutes a "Field Approval."

The language of aviation has developed over the years as needs arise to define a process, a part or a maneuver. The language of Field Approvals has developed over the past quarter of a century to meet the needs of various participants of the aviation industry. As the guidance for field approvals is standardized and the process improves, the language will change. Make sure that both the sender and receiver understand the words that are being used. Assure yourself that you and your FAA inspector have the same understanding of the terms being used to describe the approval process for alteration data. Don't assume you're speaking the same dialect, they often speak FAA-ese.

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### **Regulatory Update: UNITED STATES**

#### **Extension of Compliance Times for Fuel Tank System Safety Assessments (SFAR 88)**

The FAA has issued a final rule extending the compliance deadline for supplemental type certificate holders to complete safety assessments of their fuel tank systems, and any system that may affect the fuel tank system, and to develop design changes and maintenance programs needed to correct unsafe conditions. It also extends the compliance time for the affected operators to incorporate instructions for maintenance and inspection of the fuel tank system into their maintenance or inspection programs.

SFAR 88 has been amended so that each STC holder of a modification affecting the airplane fuel tank system must comply no later than June 6, 2003 or within 18 months after the issuance of a STC for which application was filed before June 6, 2001, whichever is later.

As a reminder, SFAR 88 applies to Transport Category airplanes carrying 30 or more passengers or a payload of 7,500 pounds.

#### **Notice of Proposed Rulemaking amending the regulations affecting Area Navigation.**

The FAA is proposing to amend its regulations to reflect technological advances that support area navigation (RNAV); make certain terms consistent with those of the International Civil Aviation Organization (ICAO); remove the middle marker as a required component of instrument landing systems; and clarify airspace terminology. The FAA claims the proposed changes are intended to facilitate the transition from ground-based navigation to new

reference sources, enable advancements in technology, and increase efficiency of the National Airspace System.

Comments are due January 31, 2003.

#### **Service Difficulty Reports**

The FAA is further delaying the effective date of a final rule that amends the reporting requirements for air carriers and certificated domestic and foreign repair station operators concerning failures, malfunctions, and defects of aircraft, aircraft engines, systems, and components.

On September 15, 2000 the FAA published the final rule amending the Service Difficulty Reports reporting requirements with an effective date of January 16, 2001. Based on numerous comments submitted by industry, the FAA has extended the effective date three separate times while trying to resolve the concerns of industry.

The FAA has again extended the effective date an additional 12 months and set the new effective date as January 16, 2004.

NOTE: FAA Advisory Circular (AC) 145-MAN, Guide for Developing and Evaluating Repair Station and Quality Control Manuals is currently open for public comment. Repair stations are encouraged to review the proposed AC and submit your comments to the FAA by February 2, 2003.

Each of these Regulatory Updates are available on [www.aea.net/Member's Only](http://www.aea.net/Member's%20Only) section: "Resource One." q

# Frequently Asked Questions

## TOPIC: GPS Installations

### QUESTION:

**What FAA guidance is available regarding GPS installations?**

### ANSWER:

There are a number of sources of information that a repair station should be aware of when installing GPS systems. The two most prominent are FAA Advisory Circular (AC) 20-138 and FAA Flight Standards Information Bulletin for Airworthiness (FSAW) 94-32A.

AC 20-138 - AIRWORTHINESS APPROVAL OF GLOBAL POSITIONING SYSTEM (GPS) NAVIGATION EQUIPMENT FOR USE AS A VFR AND IFR SUPPLEMENTAL NAVIGATION SYSTEM was published on 5/25/94. This advisory circular (AC) establishes an acceptable means of obtaining airworthiness approval of Global Positioning System (GPS) equipment for use as a supplemental navigation system for oceanic and remote, domestic enroute, terminal, and non-precision instrument approach. This document is limited to the approval of stand alone GPS equipment only.

Subsequent to the Advisory Circular, the Avionics Branch of the Flight Standards Division of FAA Headquarters (AFS-350) developed Flight Standards Information Bulletin for Airworthiness (FSAW) 94-32A effective 01-14-97 which expanded on the approval process contained in the Advisory Circular and provided the FAA Airworthiness Safety Inspectors (ASI) with specific procedures and processes to follow in the approval of alteration data for installation of GPS systems.

This FAA policy is extremely important for any repair station engaged in the installation of GPS systems and covers the installation and approval procedures of GPS Equipment used for supplemental navigation for en route, terminal and non-precision approaches. This policy should be a constant source of reference

for meeting the standards for the installation of GPS systems.

The policy covers GPS installation's that are for VFR use, IFR use, coupled to an autopilot, and GPS equipment coupled to a multi-function display for use with multi-sensor navigation or flight management equipment.

For VFR only use, the policy allows for the installation of GPS equipment to be declared as a minor alteration provided certain criteria can be met and documented.

For GPS equipment intended for IFR use, the policy permits an ASI to field approve the installation data.

The ASI may also field approve a follow on installation of multi-function displays incorporating multi-sensor navigation or flight management equipment for use under IFR, that integrates any combination of GPS, Omega/VLF, Loran-C, VOR/DME, DME/DME, or INS/IRU sensors.

In all cases, the policy allows the ASI to also approve Approved Flight Manuals (AFM) or Approved Flight Manual Supplements (AFMS) for the installed equipment.

This policy is a valuable tool for any repair station installing GPS systems and should be part of your technical library.

*Note: AEA offers these Frequently Asked Questions (FAQs) in order to foster greater understanding of the rules that govern our industry. AEA strives to make them as accurate as possible at the time they are written, but rules change so you should verify any information you receive from an AEA FAQ before you rely on it. AEA DISCLAIMS ANY WARRANTY FOR THE ACCURACY OF THE INFORMATION PROVIDED. This information is NOT meant to serve as legal advice – if you have particular legal questions, you should contact an attorney.*

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