The View from Washington

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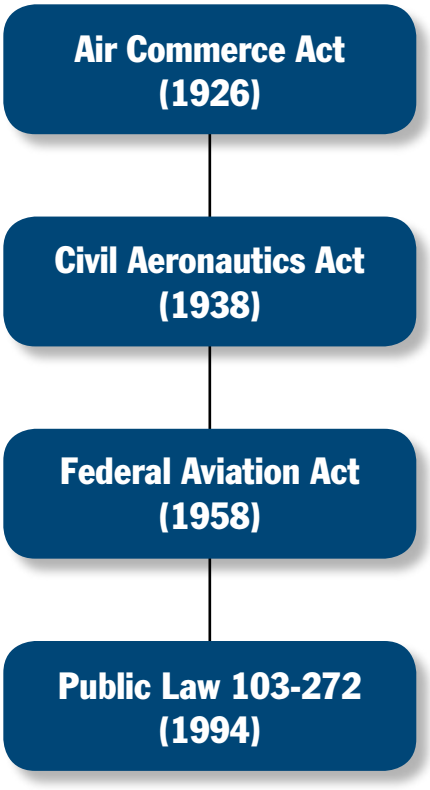
The 'Family Tree' of Laws, Regulations and Policies for the Aviation Industry

Last year during the AEA Repair Station Training Program seminars, we went into great detail about the information contained in FAA Order 8300.10 Volume II, Chapter 160, "Review and Approve a Part 145 Repair Station's Training Program," and how the orders apply to the local FAA aviation safety inspector (ASI) and not the general public.

We also discussed that knowing how the orders direct the ASIs to perform their job is important for a repair station.

But how the orders fit into the overall regulatory "family tree" is an important discussion I recently was asked to explain. As an explanation, this month's column offers a flowchart to explain how the regulatory puzzle pieces fit together from the origins of the law to the inspector's guidance.



The FAA and the Federal Aviation Regulations are not unique in this review. The overall description of the flow from law to regulation to policy and guidance document could fit pretty much into any executive agency of the federal government, be it the Occupational Safety and Health Administration, the Environmental Protection Agency or the Coast Guard — they all pretty much follow the same processes.

Laws/Acts

Each regulatory authority begins with a public law. For aviation, the first public law establishing regulatory authority for aviation matters was the Air Commerce Act of 1926.

In this early law, the secretary of commerce was commissioned to foster air commerce, issue and enforce air traffic rules, certificate pilots and aircraft, establish airways, and operate and maintain air navigation aids.

In 1938, Congress passed and the president signed into law the Civil Aeronautics Act. This act (law) established the first independent aviation agency in the United States, which was known as the Civil Aeronautics Authority (CAA). In 1940, President Franklin Roosevelt divided the CAA into the Civil Aeronautics Board, which had rulemaking and accident investigation responsibilities, and the Civil Aeronautics Agency, which had responsibility for air traffic control, certifications and enforcement.

We still deal with the regulation established by this early agency when we work on Civil Aeronautics Regulations CAR-3 or CAR-4 aircraft. Also, many of the early legal interpretations from the CAR days carried over to the new Federal Aviation Regulations.

The Federal Aviation Administration we know today wasn't established until 1958. The Federal Aviation Act of 1958 created the FAA to promote safety of flight in air commerce by prescribing safety standards. But the law also retained the Civil Aeronautics Board with responsibility for economic regulations of air carriers and investigation of aircraft accidents. And, in 1964, the era of the Federal Aviation Regulations began.

The role of the Civil Aeronautics Board to investigate aircraft accidents was passed to the National Transportation Safety Board (NTSB) in 1967 with it established as part of the Department of Transportation Act, and the Airline Deregulation Act of 1978 abolished its role in regulating airline economics and ultimately ended the Civil Aeronautics Board. This is commonly referred to as the deregulation of the airlines.

However, the only change in regu-

lations was the abolishment of the government's role in regulating the economics of the airline — that is, changing the airlines from a transportation utility, which it essentially was prior to 1978, to a free-market transportation business.

The Federal Aviation Act of 1958 was repealed in 1994 and re-established under Public Law 103-272, which placed all former criteria into Title 49 of the United States Code, Subtitle VII, "Aviation Programs," which is the law we currently operate under.

Regulations

The next step in this organizational tree are regulations.

In 1926, Congress directed the secretary of commerce to establish the necessary regulatory system to control and regulate air commerce. This early regulatory system evolved into the Civil Aeronautics Regulations (CAR). The CARs were supplemented by the Civil Aviation Manual (CAM), which contained policies, procedures and interpretations of each CAR section.

The Federal Aviation Act empowered the FAA to promote safety of flight in air commerce by prescribing safety standards. These safety standards are regulations.

The Code of Federal Regulations (CFR) is the codification of the general and permanent rules published in the "Federal Register" by the executive departments and agencies of the federal government. It is divided into 50 titles representing broad areas subject to federal regulation.

Each title then is divided into chapters, which usually bear the name of the issuing agency. Each chapter is further subdivided into parts covering specific regulatory areas. Large parts may be subdivided into subparts. All parts are organized in sections, and most citations in the CFR are provided at the section level.

Using the Repair Station Training Program as an example, the CFR would breakdown as such:

- Title 14 - Code of Federal Regulations, Aeronautics and Space

o Chapter I - Federal Aviation Administration, Department of Transportation

■ Subchapter H - Schools and Other Certified Agencies

- Part 145 - Repair Stations

o Subpart D - Personnel

■ Section 145.163 Training Requirements

So, the regulation is 14 CFR Part 145, Section 145.163, which requires an approved training program. While the regulation is more prescriptive than the law, it still needs an explanation. For this the FAA uses advisory circulars (AC).

The AC system provides guidance such as methods, procedures and practices acceptable to the Administrator for complying with regulations and grant requirements. ACs also can contain explanations of regulations, other guidance material, best practices, or information useful to the aviation community. They do not create or change a regulatory requirement.

An AC is issued to provide guidance and information in a designated subject area or to show a method acceptable to the Administrator for complying with a related Federal Aviation Regulation. Unless incorporated into a regulation by reference, the contents of an advisory circular are not binding on the public.

Advisory circulars are issued in a numbered-subject system corresponding to the subject areas of the Federal Aviation Regulations.

There is another form of public guidance document used primarily in the Aircraft Certification Service called a policy statement. A policy statement gives guidance or acceptable practices on how to find compliance with a specific Code of Federal Regulations section or paragraph. These documents are explanatory and not mandated.

At this point, we have moved from the dictate of Congress as a law, the publication of the standard by the executive branch agency as a regulation, the publication of an acceptable means of compliance through the advisory circular, and the use of policy statements.

This is where "public" documents end and internal FAA documents begin.

Directives

Now, we move into the "internal" directives of the FAA. These are the internal communications between the Administrator and her employees. The FAA directives system is the primary means of issuing policy, instructions and work information to FAA employees within the FAA.

FAA directives are written communications initiating or governing actions, conduct or procedures. Directives include:

- Guidance or instructions describing, establishing or explaining agency policies, organization, methods or procedures.
- Documents requiring action or imposing workload.
- Written information essential to the administration or operation of the agency or any of its programs.

There are two primary types of FAA directives to which we are exposed: FAA orders and FAA notices.

FAA orders are directives on individual subjects or programs. They remain in effect until specifically canceled. FAA notices give temporary direction or make one-time announcements.

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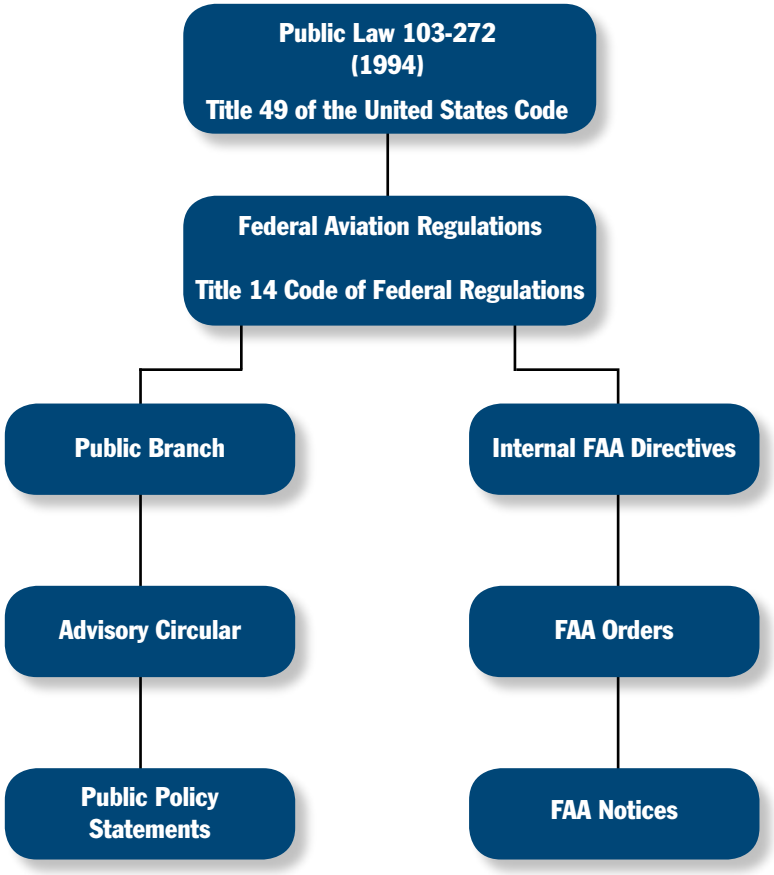
They remain in effect for 12 months or less.

Directives do not include rules, regulations, airworthiness and other rulemaking documents or publications, including Federal Aviation Regulations and advisory circulars issued primarily to and for the public.

That's not to say there may not be a parallel between the FAA directive and a public document, such as an AC. In fact, the public may need to understand an acceptable means of compliance, while the FAA employee may need to understand how to survey the public for compliance to the same regulations.

Let's go back to our regulatory example of the Repair Station Training Program, the regulation contained in 14 CFR Part 145, Section 145.163: "Training Requirements." The acceptable means of compliance to this requirement is published in AC 145.10: "Repair Station Training Program." The FAA employees' directive for reviewing and approving these RSTPs is contained in FAA Order 8300.10, Volume 2, Chapter 160: "Review and Approve a Part 145 Repair Station's Training Program."

In conclusion, the regulatory structure of the FAA system starts with the act, moves to the agency that develops the regulations, then the structure breaks into two branches: one branch for the public and one branch for the internal FAA. The public branch then expands to advisory circulars and policy statements, while the internal FAA directives branch into FAA orders and notices. ❑



Regulatory Update

United States

FAA Releases New NPRM for Part 145

The FAA released a new notice of proposed rulemaking (NPRM) against the repair station regulations, Part 145. The NPRM proposes a complete makeover in the radio and instrument ratings system of Part 145, along with other changes in all of the remaining ratings.

The NPRM also proposes to enhance the quality system requirements of Part 145, along with the introduction of elements of system safety.

For a complete breakdown of the new Part 145 proposal, visit AEA's website at www.aea.net.

Random Drug, Alcohol Testing Percentage Rates Published

In the Nov. 7, 2006 "Federal Register," the FAA published the minimum random drug and alcohol testing percentage rates of covered aviation employees for the period of Jan. 1, 2007 to Dec. 31, 2007. The rates will remain at 25 percent of safety-sensitive employees for random drug testing, and 10 percent of safety-sensitive employees for random alcohol testing.

For more information, contact Jeffrey Stookey, Office of Aerospace Medicine, Drug Abatement Division, Program Analysis Branch (AAM-810), Federal Aviation Administration, 800 Independence Ave. S.W., Washington, D.C. 20591; telephone 202-267-8442.

NPRM Published to Amend Flight Data Recorder Regulations

On Nov. 15, 2006, the FAA published an NPRM to amend the digital flight data recorder (DFDR) regulations by prohibiting the filtering of

some original parameter sensor signals.

This proposed rule is based on recommendations issued by the National Transportation Safety Board, and is intended to improve the accuracy and quality of the data recorded on DFDRs and used during accident and incident investigations.

Comments must be submitted prior to Feb. 13, 2007.

During several aircraft accident investigations, the National Transportation Safety Board found some flight data recorder systems were filtering flight recorder parameter signals before they were recorded. As a result, the data being recorded did not accurately reflect the aircraft's performance or the movements of the flight control systems prior to and during the accident/incident being investigated. This signal filtering both hampered and delayed the investigations.

In addition, the NTSB expended significant resources and time attempting to recreate the performance and movements of the flight control systems of the affected aircraft.

Designers of the information sources providing input to DFDR systems have their own reasons for filtering data, such as making it more aesthetically appealing for display in the cockpit. During the design of DFDR systems, it appears convenience and a desire to reduce cost and complexity by eliminating multiple data paths have led to the DFDR recording filtered data rather than raw data from the sensors.

The FAA understands that, in some cases, it may have been an error in the choice of data selection sources that resulted in filtered data being recorded. We have no reason to believe filtering is being used to disguise data central to accident/incident investigations.

After its most recent experience with signal filtering, the NTSB issued three recommendations (NTSB Recom-mendations A-03-48/A-03-49/A-03-50). The NTSB recommended the FAA require all aircraft have installed a DFDR system "capable of recording values that meet the accuracy requirements through the full dynamic range of each parameter at a frequency sufficient to determine a complete, accurate, and unambiguous time history of parameter activity, with emphasis on capturing each parameter's dynamic motion at the maximum rate possible, including reversals of direction at the maximum rate possible."

The FAA agrees with these NTSB recommendations and is proposing to prohibit signal filtering for specified recorded parameters.

Note: The monthly *Avionics News* "Regulatory Update" for the United States is derived from information published by the Government Printing Office in the "Federal Register" and from other information published in the public domain by the FAA.

Canada

TCCA

Transport Canada to Participate in Safety Management Panel

Transport Canada Civil Aviation has confirmed its participation in the Safety Management Panel, which takes place Friday, March 30, at the Grand Sierra Resort in Reno, Nev., during the 50th annual AEA International Convention & Trade Show.

In addition, work on the various CARACs continues.

Europe

EASA

Draft Opinion Issued on the Amendment Part 21

Opinion 03/2006 was issued Nov. 7, 2006, containing the draft opinion on the amendment of Part 21 and acceptable means of compliance (AMC) and guidance material (GM) to Part 21.

The change contains responses to some comments on several errors and inconsistencies in these documents. The opinion proposes the necessary changes to these documents. Most changes are of minor or typographical nature. The decision should be issued early this year.

EASA Rulemaking Program Adopted

Decision 2006/07/R adopted the EASA rulemaking program for 2007. It contains the planned program for NPAs and opinions/decisions in the following areas:

- Developing necessary rules and guidance for mitigating the risks of aging electrical cables. (Decision expected in Q3/2007.)
- Dealing with design flight testing for certification purposes, such as TC, STC, repair, etc. (Decision planned for Q4/2007.)
- Improvements to provide consistency between organization approvals leading to amendments of Parts 21, M, 145 and 147, including their AMC and GM. (Decision expected in Q3/2007.)
- Regulation of aircraft other than complex motor-powered aircraft, used in non-commercial activities leading to a rethink of the existing regulatory framework and adapting it to the complexity of the aircraft affected. (A number of tasks is planned to be finalized with the issue of an opinion in Q4/2008.)
- Change to Part 21A.263(b) to better describe the privileges of the DOA and the related agency obligations/ responsibilities. (Task to be completed by issuing the decision in Q3/2007.)
- Amendment and harmonization of a revised CS25.1322/AMC on flight-crew alerting and AMC25-11 on electronic display systems. (Decision scheduled for Q3/2007.)
- Fatigue evaluation of metallic and composite components, and amending the related CS27/29 sections. (Decision

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planned for Q3/2007.)

• CS-AWO amendment containing the introduction of head-up guidance systems and the incorporation of new technologies necessary for all weather operation. (Decision planned for Q4/2007.)

• Validaiton of existing national equipment specifications and their transformation into ETSO. (Decision planned for Q4/2007.)

• Issue of an AMC for the airworthiness and operational approval of electronic flight bags, and the amendment of AMC 20. (Task is to be completed by issuing a decision by Q4/2007.)

• Issue of GM for the airworthiness and operational approval of onboard equipment required for RNP-RNAV. (Decision to be issued by Q4/2007.)

• Amendment of Part M with a rule for non-complex aircraft not engaged in commercial activities. (Decision planned for Q1/2007.)

• Various issues on Part 66, including the update of the type-rating list, the reissue of Part 66 licenses and creating appropriate AMCs on type training. (Should be completed by Q4/2007.)

In addition, new internal working procedures were issued and made public Nov. 16, 2006. Some sections may be applicable to design organizations.

They are titled as:

• Transfer and surrender of certificates.

• Type certificate change and repair approval.

• Limitation, suspension and revocation of approvals and certificates.

Eurocontrol

Industry Meets Regarding 8.33 kHz

An 8.33 kHz industry meeting took place Oct. 25, 2006, at Eurocontrol headquarters, with attendance from Becker, Cobham/Wulfsberg, Stork/Fokker Services, Gables, Rockwell Collins, and Selex Communications.

During the meeting, aircraft equipage plans for civil aircraft operators for 8.33 kHz above FL195 from March 15, 2007, and for state aircraft operators in line with a transition period were reviewed.

Industry provided feedback on the business case for 8.33 kHz below FL195, in particular with respect to the price differential between 8.33 kHz and 25 kHz-only radios, and ways of ensuring equipage deadlines could be met.

RTCA

Achieving Commonality with ARINC 741

DO-210D, Change 3, "Minimum Operational Performance Standards for Geosynchronous Orbit Aeronautical Mobile Satellite Services Avionics," now is available from RTCA. Change 3 is intended to harmonize DO-210D and ARINC 741.

The goal of these changes is to achieve the maximum commonality possible with ARINC 741, as approved in October 2005.

Australia

CASA

AEA Comments on CASA-Proposed Suite of Maintenance Regulations

CASA has proposed a wide-ranging suite of maintenance regulations that will affect every AEA member in Australia or any company doing work in Australia or for Australian customers.

The NPRM introduces four new regulatory parts:

• Proposed Part 42 regulation would contain all required maintenance regulations plus the performance rules. In addition, a separate maintenance organization not related to Part 145 is proposed. Part 42 also would contain all of the previous maintenance scheduler requirements as an independent CASA approval under Subpart G.

• Proposed Part 66 would contain all AME authorities and requirements.

• Part 145 would contain all maintenance organization requirements other than the Subpart F maintenance organization in Part 42.

• Part 147 would contain the training curriculum requirements for all licenses and ratings required as part of Part 66.

The overall NPRM can be categorized into four fundamental changes:

• Changing the current Australian regulatory structure into a world-recognized regulatory structure similar to the New Zealand, United States or European regulatory structure.

• The adaptation of a European approach to guidance materials. This EASA approach uses published acceptable means of compliance and guidance materials rather than the various orders, ACs, CAAPs, or the Australian system.

• A regulatory language (text) change. CASA is proposing new regulatory language for each of the proposed rules without, it appears, addressing any of the long-standing discrepancies the industry has raised to the authority.

• A transition to the new rules.

The AEA submitted a 12-page analysis of the proposed maintenance regulations to CASA, which includes critical changes necessary to protect the avionics industry in Australia.

The Association deemed each of the four parts in this proposal as "not acceptable, but they would be acceptable if changes in the regulatory language were made."

In its comments, the AEA also challenged CASA's authority to make the changes in the regulations without legislative changes to the Civil Aviation Act of 1988.

AEA's comments can be downloaded from the AEA website at www.aea.net. ❑

Frequently Asked Questions

TOPIC:
Database Updates

The following information is from the Federal Aviation Administration.

QUESTION:

I have a customer who updates his ATC navigation database himself but is unsure of the recordkeeping requirements for this activity. What are the requirements?

ANSWER:

A standard maintenance entry.

Let's break this question down. How do you classify this activity? Is the person authorized to update the ATC navigation software himself? What are the recordkeeping requirements?

First, how should we classify this activity?

14 CFR Part 1 defines preventive maintenance to mean simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations.

Part 42, Appendix A, paragraph (c) further limits preventive maintenance such that preventive maintenance is limited to the work specially listed in Part 43, Appendix A, paragraph (c), provided it does not involve complex assembly operations. Updating Air Traffic Control navigational software databases (in some equipment) is a listed item under "Preventive Maintenance."

43xA(c): Preventive Maintenance:

(32) Updating self-contained, front instrument panel-mounted Air Traffic Control navigational software databases (excluding those of automatic flight control systems, transponders, and microwave frequency distance measuring equipment) provided no disassembly of the unit is required and pertinent instructions are provided. Prior to the unit's intended use, an operational check must be performed in accordance with applicable sections of Part 91 of this chapter.

This brings us to the second part of the question: Is this person authorized to update the ATC navigation software themselves?

We already have defined the task as preventive maintenance, so is the person authorized to perform preventive maintenance? Yes, 14 CFR Part 43 allows the holder of a pilot certificate to perform preventive maintenance for most Part 91 operated aircraft.

Section 43.3: "Persons Authorized to Perform Maintenance, Preventive Maintenance, Rebuilding, and Alterations:"

(g) Except for holders of a sport pilot certificate, the holder of a pilot certificate issued under Part 61 may perform preventive maintenance on any aircraft owned or operated by that pilot, which is not used under Parts 121, 129 or 135 of this chapter. The holder of a sport pilot certificate may perform preventive maintenance on an aircraft owned or operated by that pilot and issued a special airworthiness certificate in the light-sport category.

The final question is: What are the recordkeeping requirements?

The same maintenance records should be used for any preventive maintenance task: a description of work performed; the date the work was completed; and the signature, certificate number and kind of certificate held by the person approving the work.

Section 43.9: "Content, Form, and Disposition of Maintenance, Preventive Maintenance, Rebuilding, and Alteration Records" (except inspections performed in accordance with Part 91, Part 125, AC 135.411(a)(1), and AC 135.419 of this chapter):

(a) Maintenance record entries. Except as provided in paragraphs (b) and (c) of this section, each person who maintains, performs preventive maintenance, rebuilds, or alters an aircraft, airframe, aircraft engine, propeller, appliance, or component part shall make an entry in the maintenance record of that equipment containing the following information:

(1) A description (or reference to data acceptable to the Administrator) of work performed.

(2) The date of completion of the work performed.

(3) The name of the person performing the work if other than the person specified in paragraph (a)(4) of this section.

(4) If the work performed on the aircraft, airframe, aircraft engine, propeller, appliance, or component part has been performed satisfactorily, the signature, certificate number, and kind of certificate held by the person approving the work. The signature constitutes the approval for return to service only for the work performed.

Therefore, the answer is: The updating of ATC navigation software is preventive maintenance; a Part 61 certified pilot is authorized to perform preventive maintenance if he is the owner or operator of the aircraft and the aircraft is not used under Parts 121, 129 or 135, and standard maintenance records are generated and kept.

(Note: The AEA offers "Frequently Asked Questions" to foster greater understanding of the Federal Aviation Administration regulations and the rules governing our industry. The AEA strives to ensure FAQs are as accurate as possible at the time of publication; however, rules change. Therefore, information received from an AEA FAQ should be verified before being relied on. This information is not meant to serve as legal advice. If you have particular legal questions, they should be directed to an attorney. THE AEA DISCLAIMS ANY WARRANTY FOR THE ACCURACY OF THE INFORMATION PROVIDED.)