The View from Washington

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This month the view is 900 miles south of Washington from the AEA's 46th Annual Convention and Trade Show at the Coronado Springs Convention Center in Orlando, Florida. With 48 hours of FAAapproved training for IA renewal and AMT Awards plus an additional 10 hours or so of quality training that didn't specifically support IA renewal but was important to repair stations and technicians, this year's convention was clearly a premier training and education forum in addition to being the very best avionics trade show.

Training and education is the cornerstone of a successful business. For years the knowledge to understand and troubleshoot electronics was foremost for the avionics industry. That transitioned into understanding the idiosyncrasies of installing new digital equipment. Today, the successful repair station has added to the traditional basics the regulations that dictate the design and organization of your business: Part 145; and the design and certification of the aircraft you are installing the avionics equipment into: Parts 21, 23, and 25 (plus 27 and 29 for Helos).

Your Association is committed to providing you with the training opportunities that cover the technical aspects of avionics equipment, the needed understanding of Part 145 and the essential elements of the maintenance and certification regulations to evaluate an avionics installation against the certification basis of the aircraft. This year's convention met this demand.

The training began on the afternoon of April 22 with the first of 11 four-hour FAA supported regional training sessions on the transition to the new Part 145 regulations. This program was developed as a joint venture between AEA, NATA, ARSA and other industry participants. Designed to minimize misinterpretations of the final Advisory Circular (AC) on FAR 145, FAA headquarters committed to participate in a series of regional meetings between FAA headquarters, FAA regional offices, Flight Standards District Offices (FSDOs) and operators of Part 145 certificated repair stations.

Diana Frohn of the FAA Headquarters' General Aviation and Repair Station Branch, presented the four-hour session on Part 145, aimed at minimizing any misunderstandings between the FAA and the affected repair stations during the transition to the regulations. With standing room only, this program had a mixed audience of FAA personnel from most of the FSDOs in the Southern Region plus a few inspectors and managers from the Southern Region office in addition to an international contingent of repair station personnel.

In addition to the four-hours of repair station training, the FAA conducted another four hours of Field Approval training on April 23.

Wayne Fry, an FAA Aviation Safety Inspector with the FAA's General Aviation and Repair Station Branch, and the author of the FAA's Field Approval policy, presented this session with a focus on field approval design, documentation and approval for repair stations. This session reviewed the methods for designing an alteration, the expectations of the FAA for documenting the alteration, and how to apply for and receive FAA approval. This program included a presentation by Greg Wilson of Avionics Certification Services.

These two four-hour sessions will be repeated at nine more locations. Anyone not able to participate in either one of these two sessions in Orlando is encouraged to log onto AEA's website (www.aea.net) and register for another of the FAAscheduled meetings. There is no charge to attend these seminars but we do ask that you register online so that we can assure adequate seating for anyone planning on attending.

The remainder of the convention continued the training and education focus with top rated programs.

With a compressed version of their Maintenance Resource Management program, FlightSafety International provided the tools to reduce waste and improve efficiency in the workplace. Maintenance Resource Management is becoming more mainstream in many maintenance environments so that tasks are not just done technically correct but also maximizing the efficiency of available labor resources. Communications, working in a team environment and scheduling are key elements of an efficient maintenance program. The new Part 145 regulations and the proposed addition of Quality Assurance focus on a "System Safety" approach to managing the repair station's business: MRM is a key element of a systems view of repair station management. If you missed this program look for a repeat performance at each of the domestic AEA regional meetings throughout 2003.

The Federal Aviation Regulations are the posted limits of the aviation maintenance industry. It is only through knowing the limits can repair stations ensure they are in compliance with the regulations and negotiate practices and procedures with the local FAA inspector. ARSA Executive Director, Sarah MacLeod instructed a four-hour program on Rulemaking 101. This program focused on the basic Federal Aviation Regulations that a maintenance professional should know to perform their day to day maintenance tasks. MacLeod is already scheduled for AEA's 2004 convention.

For the second year in a row, the association held a training program specifically for the Associate member. This year's program titled "Production Design Approvals for Manufacturers" was conducted by AEA's general counsel Jason Dickstein. The course examined the regulatory framework for manufacturing aviation parts, the regulations applicable to exporting aviation parts and your responsibilities for using a subcontractor or subcontracting your services. This program also looked at the policies for direct ship authority for subcontractors and the manufacturers' responsibilities to provide Instructions for Continued Airworthiness. Next year's convention will again provide a technical forum for associate members, please contact me if you have any areas of interest that you would like us to cover.

The first Rise and Shine Regulatory Round Table continued the focus on field approvals and flight manual supplements with an expanded overview of technical issues originating from the Flight Standards division of FAA Headquarters. Wayne Fry, from the FAA's General Aviation and Repair Station Branch, supported this session with topic discussions surrounding the determination of major and minor in an alteration, a review of many of the new policies that will have an immediate effect on repair stations who are engaged in the sales and installation of avionics equipment, and an update on the status of FAA policy on GPS installations.

The next Rise and Shine Regulatory Round Table ended up being a two-part program beginning with a session from 7:30 to 8:30 a.m. and a second session in the afternoon that focused on recently released regulations and policies from the FAA regarding modification and maintenance of wiring systems on Transport Category aircraft. Following the tragic aircraft accidents that had occurred in the past 10 years, the FAAinitiated a review of their policy regarding the alteration and maintenance of wiring systems on transport category aircraft that has resulted in numerous rules and policies being published that directly affect the alteration of turbine-powered aircraft. Massoud Sadeghi, an engineer from the FAA's Transport Directorate, presented the latest information from the FAA Transport Directorate including the implementation of enhanced wiring inspection procedures, design and documentation of wiring alterations and SFAR 88. Following the presentation, there was an open discussion of the challenges faced by repair stations working on Transport Category aircraft.

The regulatory sessions concluded on the last day of the convention with a two-hour panel discussion from the three most influential offices of FAA Headquarters: Aircraft Maintenance Division of Flight Standards, and the Small Airplane and Transport Directorates of the Aircraft Certification Service.

Dave Cann, manager of the Aircraft Maintenance Division, spoke about the "culture change" that is coming about within the FAA. He encouraged the audience to participate in the Administrator's Customer Service imitative and to help hold the field inspectors accountable. It is only through open communication between the shop, the field inspector, and FAA headquarters can the FAA achieve standardization. Cann also informed the audience that FAA headquarters was adopting an ISO 9000 quality assurance program that will require the FAA to follow their own policies.

Dorenda Baker, assistant manager of the Small Airplane Directorate, discussed a number of topics that will have a direct impact on repair stations that are installing the latest technology avionics equipment. She discussed a "risk-based" approach to FAA involvement in equipment installations. The FAA has limited resources, if they spend an excessive amount of time policing installations with little risk of failure, they won't have the resources necessary to support high risk projects. She also addressed Flight Manual Supplements for small aircraft. Many of the flight manual supplements for avionics equipment installed in light GA aircraft (those under 6000 pounds) do not require specific approval by the ACO or Flight Standards. Part 23 actually allows the installer to supplement the AFM with acceptable information.

Ali Bahrami, the assistant manager of the Transport Directorate in Renton, Wash., continued the discussion of the short range business plan from the Aircraft Certification Service. He highlighted many of the programs and initiatives that have resulted in the rules and policies that affect how turbine-powered aircraft are upgraded. Bahrami also discussed the harmonization activity that has resulted in similar certification regulations for aircraft throughout Europe, Canada and the United States.

This year's program was a success because of the support by FAA personnel at all levels. In addition to recognizing the over 100 individual FAA and Canadian aviation inspectors and

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Frequently Asked Questions

TOPIC: Flight Manual Supplements

QUESTION:

What FAA guidance is available regarding Flight Manual Supplements?

ANSWER:

There are a number of sources of information that a repair station should be aware of when preparing and submitting a supplement to a flight manual or a supplemental flight manual for older aircraft that have pilot's operating handbooks.

The content of the flight manual (and therefore the need to supplement it) is contained in the Federal Aviation Regulations. The Airplane Flight Manual and Approved Manual Material section begins in section 1581 of each of the certification parts (Part 23, 25, 27 and 29). These are important references because they are the certification basis of the Flight Manuals, and in determining whether a supplement is required for the existing flight manual, the FARs must be the standard you use for your evaluation.

The procedures for submitting a supplement for approval is contained in a Flight Test Advisory Circular (AC) 23-8a and AC 25-7 for normal and transport aircraft and AC 27-1B and AC 29-2C for Normal and Transport Rotorcraft. (The use of a FAAForm 337 as a cover sheet is not required.)

The regulations, although similar, are not identical. Not all sections of the Flight Manual for Normal category aircraft (Part 23) and rotorcraft (Part 27) are approved (nor require approval). It is extremely important to read and understand the appropriate section of the regulations if you are required to supplement a flight manual.

The next most common question about flight manuals is, "when is a supplement required?" Generally, this a two-part answer: (1) when your alteration (installation) makes the procedures or system descriptions in the flight manual wrong; or, (2) you are installing equipment that triggers a requirement in the specific Airplane/Rotorcraft Flight Manual section.

The evaluation for the first question is reasonably simple. What is the effect of the installation on the information in the current flight manual? Has the installation made any information in the flight manual invalid? If so, the flight manual needs to be corrected.

The second evaluation is with regards to the regulatory requirements for Flight Manuals. Here, the evaluation begins at Section 1581 of the appropriate certification regulations (Part 23, 25, 27 or 29) and the installer must determine if the effect of the new installation on the aircraft will trigger a requirement for flight manual information.

Remember a Flight Manual is an aircraft/rotorcraft item. When performing an analysis, it is the "effect" of the installation on the aircraft or rotorcraft that is evaluated. It is the aircraft or rotorcraft that requires a flight manual for the safe operation of the aircraft, information about avionics equipment and systems need only be included if, as a system, this information is needed to assure the safe operation of the aircraft. q

Note: AEAoffers these Frequently Asked Questions (FAQs) in order to foster greater understanding of the rules that govern our industry. AEAstrives 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. AEADISCLAIMS 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, then these should be directed to an attorney.

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engineers in attendance, I'd like to thank Jim Ballough and Dave Cann for the support of Flight Standards personnel and John Hickey, Mike Gallegher and Vi Lipske for their support of aircraft certification personnel. To have the FAA regulators sitting side-by-side with the regulated public learning about new regulations, policies and initiatives, and to view the newest technologies is a fantastic learning opportunity for all.

We appreciate the effort of the FAA leadership in facilitating these programs and the Field Inspectors and the industry for making the effort to attend. Every repair station and every FSDO should have had at least one person attend these quality sessions. q

Regulatory Update

United States

Additional information and links to the following documents can be found on AEA's "members only" section of their website at www.aea.net.

False and Misleading Statements Regarding Aircraft Products, Parts, and Materials

On May 5, 2003 the Federal Aviation Administration (FAA) proposed additional rules that would prohibit certain false or misleading statements regarding type certificated products, and parts and materials that may be used on type certificated products. The proposals would also allow increased inspection by the FAA of records and parts regarding the quality of aircraft parts. The additional rules are needed to help prevent persons from representing parts as suitable for use on type certificated products when in fact they may not be. The proposals are intended to provide assurance that aircraft owners and operators, and persons who maintain aircraft, have factual information on which to determine whether a part may be used in a given type certificated product application.

There has been a growing concern within the FAA and Congress about the representation of parts used on aircraft. Under FAA regulations, the person installing parts on an aircraft is responsible for ensuring the parts are airworthy. Because airworthiness cannot be determined simply by inspecting a part, parts installers often have to rely on information provided by the persons who sold them the parts. Most parts in the aviation system are of the quality and condition described in their records. There have been cases, however, in which false or misleading statements in advertisements and other records have led a person installing the part to believe the part was suitable for a particular use when, in fact, it was not.

Currently, there are few regulations concerning false or misleading statements regarding aircraft parts. Further, it may be difficult for the FAA to investigate apparent false or misleading statements because the FAA does not regulate parts distributors.

The FAA proposes to issue these additional rules that would (1) help prevent misleading statements by extending the prohibition on fraudulent or intentionally false statements beyond those now covered by Title 14, Code of Federal Regulations (14 CFR) parts 21 and 43; (2) provide a regulation covering fraudulent and intentionally false statements that, if violated, would be addressed by FAA enforcement action; and (3) provide for FAA investigation of representations made regarding the quality of aircraft parts.

This proposal may be an area of concern for companies that manufacture electronic displays and other equipment used in cabin entertainment systems. Affected companies are encouraged to review the proposal and submit comments to the FAA.

Comments must be submitted to the FAAby August 4, 2003.

Part 145 Extension

On March 14, 2003, the FAA extended the effective date of the final rule amending 14 CFR parts 91, 121, 135 and 145 as published on August 6, 2001 until October 6, 2003. This date was incorrect and on April 10, 2003, the FAA published a correction to the DATES section of the Part 145 final rule published in the Federal Register to correctly extend the effective date until October 3, 2003, with the following exception: Sec. 145.163 remains effective April 6, 2005.

Small Airplane Directorate DRAFT Policy regarding Circuit Protection

This draft policy statement is intended to provide clarification of 14 CFR part 23, § 23.1357(d), for normal, utility, acrobatic, and commuter category airplanes. It is applicable for all installed fuses or circuit breakers, including those used for primary and/or secondary (in-line) circuit protection. This policy statement incorporates, and therefore supersedes, the previously issued policy applicable to this subject contained in Advisory Circular, AC 23-17A.

The requirements in 14 CFR part 23, § 23.1357(d), at amendment 23-55 are stated as "If the ability to reset a circuit breaker or replace a fuse is essential to safety in flight, that circuit breaker or fuse must be so located and identified that it can be readily reset or replaced in flight."

The applicability of the above statement from 14 CFR part 23, § 23.1357(d), depends on whether a function is determined to be "essential to safety in flight." There are two criteria, listed below, that are used to determine which functions are "essential to safety in flight," as required by 14 CFR part 23, § 23.1357(d). They are: (1) For airplane systems with a certification basis at Amendment 23-40 or earlier: When the function is required by the airworthiness or operational requirements, it is considered "essential to safety in flight;" or (2) For airplane systems with a certification basis at Amendment 23-41 or later: When the failure condition of the loss of the function is determined to be "major," "hazardous," or "catastrophic" [as per a § 23.1309 and AC 1309-1C safety assessment, which considers both operational and airworthiness requirements], it has a significant

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impact on safety in flight and is considered "essential to safety in flight."

The statement "required by the airworthiness or operational requirements" in criteria (1) refers to equipment required by the current operational rules under which the aircraft is operated (i.e., 14 CFR part 91, 14 CFR part 135).

Transport Directorate Policy Statement on the Installation of Transport Category Airplane Flightdeck Liquid Crystal Displays

The purpose of this draft memorandum is to clarify FAA certification policy on the installation of liquid crystal displays (LCD). This memo addresses the lack of published approval criteria for LCD technology and provides guidance on performance levels that have been found to be acceptable for LCDs used as pilot displays in the flightdeck of transport category airplanes.

Current Regulatory and Advisory Material Section 25.1301 of 14 Code of Federal Regulations (CFR) Part 25 requires that each item of installed equipment must: (a) Be of a kind and design appropriate to its intended function; (b) Be labeled as to its identification, function, or operating limitations, or any applicable combination of these factors; (c) Be installed according to limitations specified for that equipment; and (d) Function properly when installed.

Sections 25.1303 and 25.1305 address specific requirements for Flight and Navigation, and for Powerplant instruments, respectively. Section 25.1309, in brief, requires that: "(a) The equipment, systems, and installations, whose functioning is required by this subchapter, must be designed to ensure that they perform their intended functions under any foreseeable operating condition. (b) The airplane systems and associated components, considered separately and in relation to other systems, must be designed so that--(1) The occurrence of any failure condition which would prevent the continued safe flight and landing of the airplane is extremely improbable, and (2) The occurrence of any other failure conditions which would reduce the capability of the airplane or the ability of the crew to cope with adverse operating conditions is improbable. (c) Warning information must be provided to alert the crew to unsafe system operating conditions, and to enable them to take appropriate corrective action. Systems, controls, and associated monitoring and warning means must be designed to minimize crew errors which could create additional hazards."

Sections 25.1321 and 25.1322 address requirements for the installation of airplane instrumentation, alerts and indications, and § 25.1431 addresses the installation of radio and miscellaneous electrical equipment, any of which may utilize LCD technology.

Advisory Circular (AC) 25-11, "Transport Category Airplane Electronic Display Systems," provides guidance for the certification of electronic display systems and was issued when Cathode Ray Tube (CRT) based electronic display systems were prevalent. As a result, AC 25-11 contains many references to criteria and industry standards that are unique to CRTs, but does not contain equivalent criteria and references to industry standards for LCDs.

Advisory Circular 25-11 has proven to be acceptable guidance for installation of electronic displays in transport category airplanes. The FAAwill continue to use this AC as installation guidance for electronic displays, including LCDs. In addition, as specific guidance for the installation of LCDs, SAE ARP 4256 should be referred to in lieu of SAE ARP 1874, "Design Objectives for CRT Displays for Part 25 (Transport) Aircraft." Specifically, for guidance on LCD visual characteristics, the applicant should refer to SAE ARP 4256 rather than to SAE ARP 1874 in paragraphs 6a, 6b(4), and 6c of AC 25-11. In addition, all references in AC 25-11 to CRT displays should be interpreted as also being applicable to LCDs, with the exception of paragraph 6b(4)(vi), which applies only to CRT displays.

Questions regarding this memorandum should be directed to Dr. John McConnell of the Airplane and Flight Crew Interface Branch, ANM-111. Dr. McConnell's telephone number is (425) 227-1365 and his e-mail address is john.mcconnell@faa.gov.

Australia

Additional information on the following topics of interest to AEAmember companies in Australia can be found at http://www.casa.gov.au/avreg/rules/index.htm.

Notification of making of Civil Aviation Amendment Regulations - Aviation Safety Services

The Governor-General made Civil Aviation Amendment Regulations 2003 (No.2) Statutory Rules 2003, No. 75 on Thursday, May 1, 2003, which amends the Civil Aviation Safety Regulations 1998 by revising the requirements for the provision of certain airport services, changing some administrative arrangements and attending to other technical matters in accordance with an undertaking made in the Parliament by the Minister for Transport and Regional Services. The Regulations have been notified in the Special Gazette No. S 135 on Thursday, May 1, 2003.

Regulations 1 to 4 and Schedules 1 and 2 commenced on May 1, 2003 and coincided with the commencement of the principal Aviation Safety Services Regulations (Parts 65, 143, 171, 172 and Subpart 139.H).

Schedule 3 commenced on May 3, 2003 and inserts amendments to Subpart 139.H into Part 139 which commenced on May 2, 2003.

Miscellaneous Legislative Instrument

On April 30, 2003, the Director of Aviation Safety signed Instrument CASA 112/03 issuing instructions under regulation 179A of the Civil Aviation Regulations 1988 relating to the use of Global Positioning System (GPS). This instrument was gazetted on Wednesday, May 7, 2003, and will come into effect on that date.

Amendment to CAOs 40.1.0 (Aircraft Endorsements - Aeroplanes) and 40.3.0 (Aircraft Endorsement - Helicopters)

On April 17, 2003, the Director of Aviation Safety signed Civil Aviation Amendment Order (No. 4) 2003. The Order amends CAO 40.1.0 and CAO 40.3.0. The Order was gazetted on Wednesday, April 30, 2003 and will come into effect on that date. The amendments will be promulgated as Amendment Nos. 237 and 238.

Civil Aviation Authority-United Kingdom

Research Confirms Mobile Phones Are Still A Threat To Aircraft

Continuing research by the Civil Aviation Authority (CAA) has proved that mobile telephone transmissions made by airline passengers can interfere with aircraft equipment.

The tests support the existing CAA ban on the use of mobile telephones on board aircraft when the engines have started. This has been in effect since the widespread introduction of mobile telephones and was supported by initial research performed in February 2000.

The latest study found that the use of mobile telephones can adversely affect navigation and communication functions, producing significant errors on instrument displays and background noise on audio outputs.

The research backs up reports from pilots, who have stated that interference from mobiles has caused:

- False notification of unsafe conditions, e.g. incorrect baggage compartment smoke alarm warnings.
- Malfunction of aircraft systems.
- Interrupted communications due to noise in the flight crew headphones.
- Distraction of crews from their normal duties due to increased work levels and the possibility of having to invoke emergency drills

Dan Hawkes, the avionics specialist at the CAA who supervised the research, explained: "The tests demonstrate that mobile telephone use near an aircraft's flight deck or avionics equipment bay can adversely affect systems that are essential for safe flight.

"For safety reasons the current policy of prohibiting the use of mobile telephones by passengers while the aircraft's doors are closed for flight must continue."

The report also contains a number of follow-up recommendations:

- Continued restriction of mobile telephone use by passengers in aircraft.
- Aircraft operators should alert their flight crews to the specific risks from mobile telephone use on the flight deck, and introduce procedures to ensure telephones are switched off. Similarly, the general aviation community should be alerted to these dangers in small aircraft.
- Check-in staff should seek confirmation from passengers that mobile telephones in luggage have been switched off.
- Reminder notices should be placed in airport departure lounges and at aircraft boarding points.
- Research into mobile telephone interference risk should be continued to take account of continuing technological advancements

For more information or a copy of the full report, contact David Sanders on 020 7453 6024, or go to http://www.caa.co.uk/docs/33/CAPAP2003_03.PDF q

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