The View from Oshkosh

BY RIC PERI
VICE PRESIDENT, AEA GOVERNMENT & INDUSTRY AFFAIRS

Visits to AirVenture, with the FAA, and to AEA Member Shops

Recently, it seems most of my columns have been written on the road rather than in Washington, D.C. Perhaps this is truly a reflection of the make-up of the AEA; after all, we have no members in the District of Columbia.

This month's column was written from the Experimental Aircraft Association's AirVenture 2007, in Oshkosh, Wis. I always enjoy EAA AirVenture.

As many of you know, I spend the first few days of each AirVenture on personal vacation, moving, towing and taxiing aircraft of various shapes and sizes on AeroShell Square — which is the main exhibit area, for those who have never been, and the point of entry for a couple of hundred aircraft on display at the vendors' sites. During the 14 days AeroShell Square is up and running, there are more than 1,000 aircraft movements; I join the team for about half of those.

New Technology

While this is a time when I get to smell avgas and jet fuel, practice my towing skills, and actually work on a ramp again, it's also a time when I get to see and touch the latest aviation has to offer.

As Wes Ryan of the FAA's Small Airplane Directorate has said for the past few years at the annual AEA convention, the traditional technology flow from military to airlines to general aviation to experimental aircraft has shifted — partly because of the digital age and partly because of the size of the market.

Avionics technology migration has reversed, and the introduction of new technology often is introduced at EAA AirVenture first. This year was no exception.

This year's hot item is the light-sport aircraft. Both Cessna and Cirrus introduced their branded entrants into the market, and each has its own unique avionics.

This year's hot avionics are primary flight displays — and lots of them. A couple of PFDs are being introduced for the certified-aircraft market, while there are even more for the experimental aircraft market. In addition, some with experience in the experimental market are interested in pursuing certification for the light GA market.

Light-Sport Aircraft

There are two types of light-sport aircraft, and the regulations for maintaining and altering these aircraft are uniquely different, which can be a challenge.

The three most important things to know about these aircraft are:

- The aircraft manufacturer has assumed the traditional role of the FAA for all alterations and major repairs — the FAA is not involved, and you never use an FAA Form 337 with an LSA.
- There are maintenance regulations affecting LSAs in 14 CFR Parts 43, 65 and 91 — make sure you read them all before beginning any work on these aircraft.
- Know which kind of LSA you are working on — is it an S-LSA or an E-LSA?

An S-LSA, or special light-sport aircraft, is absolutely controlled by the aircraft manufacturer and the standards published by ASTM. An E-LSA, or experimental light-sport aircraft, is managed more like an amateur-built experimental aircraft. These aircraft might look similar to a Part 23 aircraft, but from a regulatory perspective, they are very different. Know the rules.

The Administrator

Then FAA Administrator Marion C. Blakey made her annual trip to AirVenture with three important messages.

First, Oshkosh is where she announces the winners of the FAA Safety Team's General Aviation Awards. This year's Avionics Technician of the Year is Jerry Luttrull of Otto Instrument Service in Ontario, Calif.

Luttrull worked his way up from instrument technician — performing inspections, maintenance, preventive maintenance and alterations for aircraft instruments and accessories on GA, air carrier and military aircraft — to vice president of quality and compliance. It

Ric Peri's make-shift office at AirVenture in Oshkosh, Wis.

truly was a pleasure to see him receive this award and spend some time visiting with him at the awards luncheon. Congratulations, Jerry.

Secondly, at EAA's Meet the Boss session, Blakey announced the FAA is ready to take ADS-B nationwide. On Aug. 30, the FAA awarded the contract that will help the FAA launch full force into NextGen to ITT Corp., White Plains, N.Y. As the prime contractor, the contract is worth $1.8 billion from 2007 to 2025.

"By this time next year, we should be doing our first test on a fully functioning uplink device," Blakey said. "Now, that's definitely something to look forward to with the approach of 2010. That's when you folks start equipping, and you have until 2020 to comply."

The third item of interest was (this one might be a bit personal), the Administrator announced, effective Aug. 30, the FAA is reducing the size and simplifying the shape of the ADIZ. Hopefully, this isn't just a good thing for those of us flying around Washington, D.C., but also for AEA member shops affected by this albatross. The change doesn't open up all airports affected by the ADIZ (the DC 3 are still under the ADIZ), but it should open up most of the avionics shops to which your customers haven't been allowed to fly.

Preventive Maintenance

There was one moment of disappointment that came with the FAA to Oshkosh this year, and it highlighted the reasons ISO 9000 and safety management systems will fail.

I was discussing with an FAA headquarters' manager some recent training I have been providing as part of the FAA's FAASTeam and one of the most misunderstood regulations — preventive maintenance, which is clearly defined by 14 CFR Part 43.

The specific item I discussed was Part 43, Appendix A, Paragraph c (32):

43xA.c: Preventive Maintenance.

Preventive maintenance is limited to the following work, provided it does not involve complex assembly operations:

(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 clearly is preventive maintenance and is recognized as such by the FAA. Ask any Part 135 charter operator, and he will say he cannot update his nav database except though a certificated technician. Preventive maintenance is limited to Part 91 owners and operators and, of course, certificated technicians and repair stations.

I pointed out two items with this rule (and, yes, it is regulatory). First, the updating of the navigational software databases is preventive maintenance, not the updating of operating system software. If an update to the operating system is included in the nav database update, it is not preventive maintenance.

The second issue is, 14 CFR 43.9 lists the required content for preventive maintenance records:

§43.9: Content, form and disposition of maintenance, preventive maintenance, rebuilding and alteration records (except inspections performed in accordance with Part 91, Part 125, §135.411(a)(1) and §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.

Essentially, what §43.9 states is, every time the owner (or an avionics/maintenance shop) updates the nav database, he must sign the maintenance logbook with a description of the work he performed, the date the update was accomplished, the name of the person performing the work, and his signature, certificate number and type of certificate he holds — every time he updates the nav database.

I was taken aback to hear the FAA manager's response, which was this is a "stupid" rule and nobody is doing this. I would offer to the FAA's associate administrator for aviation safety, Nick Sabatini, if this is the response of his managers for regulatory compliance, he needs to fix his own house before mandating SMS to industry.

AEA Shop Visit

On my return from Oshkosh, I stopped at three AEA member shops and a FSDO, as well as presented three seminars along the way. Thanks to Sporty's Pilot Shop and Cincinnati Avionics for sponsoring two of the seminars, and to the Springfield FSDO for sponsoring the third.

It is always a pleasure and an honor

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VIEW FROM WASHINGTON

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to visit AEA member shops to see the "real-world" issues they are dealing with and help look for solutions. The following are issues from which AEA member shops will benefit from knowing.

First, there are three important rules affecting return to service:

• 14 CFR 145.201, the privileges of the repair station.

• 14 CFR Part 43, who may perform maintenance and return to service.

• 14 CFR Part 65, the privileges of a repairman.

§ 145.201: Privileges and limitations of certificate.

(a) A certificated repair station may:

(1) Perform maintenance, preventive maintenance or alterations in accordance with Part 43 on any article for which it is rated and within the limitations in its operations specifications.

(3) Approve for return to service any article for which it is rated after it has performed maintenance, preventive maintenance or an alteration in accordance with Part 43.

While there is more to each of these regulations, I've focused on just a couple of points.

When performing work, a repair station is limited by its ratings and its ops specs. For example, if you have a limited instrument rating for performing 91.411/413 checks, you may not do anything with instruments except those two checks — period! No autopilot installations, no servicing of the magnet compass, nothing. For a limited rating, your rating and ops specs go hand-in-hand.

The next issue when we look at 14 CFR Part 43 is, who may perform maintenance and what limitations he may have:

§43.3: Persons authorized to perform maintenance, preventive maintenance, rebuilding and alterations.

(c) The holder of a repairman certificate may perform maintenance, preventive maintenance and alterations as provided in Part 65 of this chapter.

In this case, a holder of a repairman's certificate may perform maintenance as provided for in Part 65.

So, let's look at 14 CFR Part 65 to see what kind of limitations a repairman may have:

§65.103: Repairman certificate; privileges and limitations.

(a) A certificated repairman may perform or supervise the maintenance, preventive maintenance or alteration of aircraft or aircraft components appropriate to the job for which the repairman was employed and certificated, but only in connection with duties for the certificate holder by whom the repairman was employed and recommended.

This is where we start to run into some challenges. A repairman may supervise the alteration of an aircraft for which the repairman was employed and certificated.

What does your repairman's certificate authorize you to do? If the repair station is rated for a limited airframe for avionics installations but you don't have airframe on your certificate, you cannot perform or supervise (or return to service) airframe work, even though the repair station may be rated to perform the work. You are limited by your certificate.

Another area that came to light was an FAA inspector's audit where it noted the repair station did not have a "shelf-life" program. This is one of those cases in which the inspector apparently had a background in the military, airlines or some other large organization. A textbook "shelf-life" program would bankrupt most small enterprises.

Ensuring critical materials, such as sealants, gaskets and o-rings, used by technicians are not expired is a good recommendation. As technicians, we were taught to check these things before use. However, the action of the FAA inspector during an audit to list the lack of a program as an audit finding, was taking literary license a bit too far.

The secret here is to incorporate the principles of a "shelf-life" program into everyday maintenance actions where technicians check and accept products prior to use, without the repair station having a full-blown administrative burdensome, non-regulatory program. This is a good topic to cover during your recurrent training.

What clearly came to light during these visits was the need for AEA members to incorporate the intent of these programs into their everyday operations. It is unrealistic to chase all of these individual programs, but it is critical for the repair station to integrate these programs into daily operations without the need for an independent program.

The AEA will continue to focus on a system-wide approach to the various government mandates.

The "View from Oshkosh" was like the ride home — CAVU. Aircraft, technology, regulations and shops all have a clear path forward. ❑

Regulatory Update

United States

Rule Change Published for HIRF Protection

On Aug. 6, 2007, the FAA published in the Federal Register a rule change affecting 14 CFR Parts 23, 25, 27 and 29. This final rule amends FAA regulations by adding airworthiness certification standards to protect aircraft electrical and electronic systems from high-intensity radiated fields (HIRF).

This action is necessary because of the vulnerability of aircraft electrical and electronic systems and the increasing use of high-power radio frequency transmitters. This action is intended to create a safer operating environment for civil aviation by protecting aircraft and their systems from the adverse effects of HIRF.

Although the HIRF environment did not pose a significant threat to earlier generations of aircraft, designs were first proposed in the late 1970s for civil aircraft that included flight-critical electronic controls, electronic displays, and electronic engine controls, such as those used in military aircraft. These systems are more susceptible to the adverse effects of operation in the HIRF environment.

Accidents and incidents involving civil aircraft with flight-critical electrical and electronic systems have also brought attention to the need to protect these critical systems from high-intensity radiated fields.

Further, the need to protect these systems in aircraft has increased substantially in recent years because of:

• a greater dependence on electrical and electronic systems performing functions required for the continued safe flight and landing of aircraft;

• the reduced electromagnetic shielding afforded by some composite materials used in aircraft designs;

• the increase in susceptibility of electrical and electronic systems to HIRF because of increased data-bus or processor operating speeds, higher density integrated circuits and cards, and greater sensitivities of electronic equipment;

• expanded frequency usage, especially above 1 GHz;

• the increased severity of the HIRF environment because of an increase in the number and power of RF transmitters; and

• the adverse effects experienced by some aircraft when exposed to HIRF.

Recognizing the need to address the vulnerability of aircraft electrical and electronic systems to HIRF, the FAA published this final rule amending the airworthiness standards for normal, utility, acrobatic and commuter category airplanes certificated under Part 23; transport category airplanes certificated under Part 25; normal category rotorcraft certificated under Part 27; and transport category rotorcraft certificated under Part 29.

These amendments became effective Sept. 5, 2007.

FAA Proposes Amendment for Private-Use Transport Category Aircraft

In Docket No. FAA-2007-28250, the FAA proposes amending 14 CFR Part 25 to address interior configurations for private-use Part 25 aircraft. This proposal would amend the airworthiness standards for transport category airplanes by adding new cabin interior criteria for operators of private-use airplanes.

These standards may be used instead of the specific requirements affecting transport category airplanes operated by air carriers. The proposed standards would supplement the requirements for operation under the air traffic and general operating rules.

This proposal is intended to provide alternative criteria for transport category airplanes operated for private use while continuing to provide an acceptable level of safety for those operations.

Transport category airplanes are required to comply with the standards of Title 14 Code of Federal Regulations (14 CFR) Part 25 to be eligible for a type certificate in this category. To the extent considered appropriate for safety, Part 25 requirements contain different provisions based on passenger capacity discriminants. These requirements do not distinguish between airplanes operated in air carrier service and airplanes operated for private use.

Aviation industry representatives have stated the Part 25 standards are written with only air carrier operation in mind and have questioned whether the one level of airworthiness requirement for transport category airplanes is, in fact, appropriate for all types of operations.

Comments on this proposal are due prior to Oct. 11, 2007. The proposal can be viewed at http://dms.dot.gov by searching Docket No. FAA-2007-28250.

Notice Published to Address Suspected Unapproved Parts

On July 27, 2007, the FAA published FAA Notice N8900.12, which addresses the processing reports of suspected unapproved parts.

In this report, there are two very important definitions:

• "Approved parts." The term "approved parts" in quotations is used throughout this notice in a colloquial sense. The term "approved parts" in quotations is not synonymous with "a part that has received a formal FAA ap-

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proval." "Approved parts" are identified as parts meeting one of the following requirements:

a) Produced in accordance with a parts manufacturer approval issued under Part 21, Subpart K.

b) Produced in accordance with a technical standard order authorization issued by the Administrator under Part 21, Subpart O.

c) Produced during the type certificate application process under Part 21, Subpart B, or the supplemental type certificate application process under Part 21, Subpart E, prior to the issuance of the certificate; subsequently determined to conform to the approved TC or STC data (refer to §21.303(b)(1)).

d) Produced under a TC without a separate production authorization, and an approved production inspection system in accordance with Part 21, Subpart F.

f) Produced under a production certificate in accordance with Part 21, Subpart G.

g) Produced in accordance with an approval under a bilateral airworthiness agreement under Part 21, Subpart N.

h) Approved in any other manner acceptable to the Administrator (§21.305(d)). Note: Parts that have been inspected and/or tested by persons authorized to determine conformity to FAA-approved design data may be found to be acceptable for installation as well. Military surplus parts (defined as parts originally released as surplus by the military, even if subsequently resold by manufacturers, owners/operators, repair facilities or any other suppliers of parts) may fall under these conditions. AC 20-62D, "Eligibility, Quality, and Identification of Aeronautical Replacement Parts," should be referred to for information regarding eligibility and traceability of replacement parts.

i) Produced as standard parts conforming to established industry or U.S. specifications (refer to paragraph 7p for definition).

j) Produced by an owner or operator for the purpose of maintaining or altering the product.

k) Manufactured by a repair station or other authorized person during repair/alteration in accordance with an STC or field approval (which is not for sale as a separate part) in accordance with Part 43 and AC 43-18, "Fabrication of Parts by Maintenance Personnel."

• Unapproved Part. A part that does not meet the requirements of an "approved part." This term also includes parts that have been improperly returned to service (contrary to Parts 43 or 145) and/or parts falling under one or more of the following categories:

a) Parts shipped directly to the user by a manufacturer, supplier or distributor in which the parts were not produced under the authority of an FAA production approval for the part, such as production overruns in which the parts did not pass through an approved quality system.

b) New parts that have passed through a production approval holder's quality system and are found not to conform to the approved design/data.

c) Parts that have been maintained, rebuilt, altered, overhauled or approved for return to service by persons or facilities not authorized to perform such services under Part 43 and/or Part 145.

d) Parts that have been maintained, rebuilt, altered, overhauled or approved for return to service and are subsequently found not to conform to approved data.

e) Counterfeit parts.

AEA member shops should review FAA Notice N8900.12 and the distinction between an "approved part," as used in the suspected unapproved parts program, and an unapproved part.

AEA Members in U.S. with EASA Part 145 Approvals Should Review Notice

On July 23, 2007, the FAA published FAA Notice N8900.10 addressing "U.S.-Based Repair Stations With European Aviation Safety Agency Part 145 Approvals."

This notice introduces the revised FAA Order 8300.10, "Airworthiness Inspector's Handbook," Volume 2, Chapter 168, "Evaluate an EASA Supplement to a Repair Station and Quality Control Manual."

This chapter contains guidance and information for aviation safety inspectors assigned to U.S.-certificated repair stations performing maintenance, preventive maintenance and modifications on civil aeronautical products under the regulatory control of the European Aviation Safety Agency, for which the agency has issued an EASA Part 145 approval to a U.S.-based repair station.

AEA members in the United States with an EASA Part 145 approval should review FAA Order 8300.10, Volume 2, Chapter 168, to better understand the requirements for FAA approval of their EASA supplement.

Canada

Transport Canada Creates New Website for Policy Documents

TCCA has created a new website listing all civil aviation policy and guidance documents issued within the past 60 days. Industry organizations and individuals are advised to regularly check the site for documents that might affect their operations.

The website can be viewed at www.tc.gc.ca/CivilAviation/IMSdoc/Recent.htm.

Transport Canada Issues Details of Regulatory Oversight Activities

TCCA has issued Staff Instruction

SUR-003 to provide its inspectors and industry with policies and procedures related to the TCCA regulatory oversight program during the transition to safety management systems.

The staff instruction provides procedures for regulatory oversight of organizations with a complete SMS; organizations in the process of implementing an SMS; and organizations not yet required to have an SMS.

For organizations not yet required to have an SMS, normal oversight and audit procedures will be followed; however, TCCA will assess whether or not significant risk indicators are apparent related to the organization's operations. If so, TCCA will conduct a program validation in accordance with its SMS Assessment Guide. For AMOs, the program validation would assess the quality assurance system of the AMO.

Staff Instruction SUR-003 can be viewed at www.tc.gc.ca/civilaviation/IMSdoc/IMSDocuments/SUR/SUR-003.htm.

Europe

EASA Issues Rulemaking Program for 2008

The European Aviation Safety Agency issued its rulemaking program for 2008. Highlights include:

• The task to develop the rules and basic principles to include air traffic management and air navigation services into EASA tasks.

• The amendment of Part M, CS-25, AMC-20 in regards to electrical wiring interconnection systems.

• The establishment of common rules on design flight testing for certification purposes (TC, STC, repair design, etc).

In addition, EASA will be working on a simplified certification process for aircraft below 2000kg and light aircraft below 1000kg. EASA is also working on a change to rules currently limiting the change or repair of ETSO articles; the update of the TGL 36 for electronic flight bags; and the introduction of this amended content into a new AMC-20 document. Furthermore, the agency is working on a clarification on the privileges of B1 and B2 license holders as well as on a license for non-complex aircraft maintenance engineers.

Long awaited is the opinion on the implementation of the EU-OPS developed out of JAR-OPS 0, 1, 2, 3 and 4, which would, for the first time, provide common rules for non-commercial operation.

For anyone applying for the approval of an organization, a change to a product or article, or the continuation of an organization license, it might be important to read the frequently asked questions regarding EASA's amended fees and charges regulation. Check out the FAQs on EASA's website at www.easa.eu.int/home. ❑