



INTERNATIONAL NEWS AND REGULATORY UPDATES

F R O M R I C P E R I
VICE PRESIDENT OF GOVERNMENT & INDUSTRY AFFAIRS FOR AEA

The Aircraft Electronics Association's international membership continues to grow. Currently, the AEA represents avionics businesses in more than 35 countries throughout the world. To better serve the needs of the AEA's international membership, the "International News and Regulatory Updates" section of Avionics News offers a greater focus on international regulatory activity, international industry news, and an international "Frequently Asked Questions" column to help promote standardization. If you have comments about this section, send e-mails to avionicsnews@aea.net.

BY JOHN CARR
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Attend AEA Canada Meeting for SMS Implementation Discussions

With the AEA Canada Meeting taking place next month, it is timely to review the regulatory climate in Canada and highlight some of the issues to be discussed during the meeting, which is Sept. 1-3, in Calgary, Alberta.

The AEA is working on a number of issues with Transport Canada, including the alleviation to the undocumented parts procedures for avionics AMOs; harmonization of the content of supplemental instructions for continued airworthiness with the FAA; the details of the TCCA/EASA Treaty on Airworthiness; CAR521 guidance materials; and the rulemaking for carriage of 406 MHz ELTs on Canadian-registered aircraft. Unfortunately, most of these issues have been "on the books" for some time, and it is

hoped TCCA will be able to provide details of progress on these items.

Following from the April meeting between the AEA and TCCA regarding the implementation of safety management systems for Canadian

AEA Canada Meeting, SMS will be discussed further and fast-trak training will be provided on the subject of developing an effective quality management system as the basis for implementing an SMS in an AMO.

With the regulations for safety management systems now on the horizon, AMOs should plan to attend the AEA Canada Meeting from Sept. 1-3, in Calgary, Alberta, Canada.

"573" AMOs, a series of articles will be published in *Avionics News* to assist AMOs in preparing for SMS. The first article, which appears in this issue, outlines the elements of a quality management system, which can be used as the basis for eventual implementation of SMS. During the

TCCA is in a transitional mode, whereby it is moving its resources from the performance of detailed compliance verification and audits to a role in which its staff performs oversight of a certificate holder's regulatory obligations, including SMS. To accomplish this, TCCA is

in the process of re-organizing its regional offices. Unfortunately, this process appears to be taking an inordinate amount of time, partly because of staff classification issues; hence, some regions are ahead of others in this process.

The re-organization probably will mean an AMO will see a change in the TCCA staff (both inspectors and engineers) overseeing its activities. It also will mean adopting a new way of doing business with TCCA, such that the familiar role of TCCA as a technical and process detail auditor will disappear, to be replaced by process oversight activities. It is hoped this will not dilute the ability of TCCA staff to provide technical and regulatory advice to certificate holders and applicants, but only time will tell if this will be the case or not.

TCCA airworthiness inspectors and certification engineers from headquarters in Ottawa and the Prairie and Northern Region will be invited to the AEA Canada Meeting to present updates regarding issues of concern to the AEA and answer questions from members.

This offers a unique opportunity for AEA members to address TCCA policymakers and service delivery specialists first-hand and obtain direct feedback about their concerns. In the past, this part of the meeting has been very productive and informative.

With the regulations for SMS now on the horizon, AMOs should plan to attend the AEA Canada Meeting in September.

UNITED STATES News & Regulatory Updates

FCC Bans 121.5 MHz ELTs

In the Federal Communications Commission's "Third Report and Order" for 2010, which was adopted June 1 and published June 15, the FCC prohibited further certification, manufacture, importation, sale or use of 121.5 MHz emergency locator transmitters.

Following the release of the report, the FCC clarified that the rule is targeting legacy TSO C91a type ELTs, which operate primarily on 121.5 MHz, not the general use of frequency 121.5 MHz as the rule implies. Current TSO C126 ELTs are not affected by this ruling.

As it first announced in October 2000, Cospas-Sarsat stopped monitoring 121.5 MHz signals as of Feb. 1, 2009. It stopped processing distress signals from 121.5 MHz emergency radio beacons because of accuracy and false-alert problems. With the support of international aviation and maritime organizations, Cospas-Sarsat has urged users of 121.5 MHz ELTs and emergency position indicating radio beacons to switch to 406 MHz ELTs and EPIRBs.

As the commission noted in the second FNPRM, the National Oceanic and Atmospheric Administration, the U.S. Coast Guard, the U.S. Air Force, and the National Aeronautical and Space Administration, which jointly administer the Cospas-Sarsat system in the United States, strongly recommended users

of 121.5 MHz beacons switch to 406 MHz beacons.

After reviewing the comments from the 2006 proposal, the FCC concluded it should prohibit the certification, manufacture, importation, sale or use of 121.5 MHz ELTs.

Following the FCC's announcement, the AEA immediately began working with the FCC, the FAA and other associations to discuss a timely transition to this new FCC prohibition without grounding thousands of general aviation aircraft. As of early July, the final rule had not been submitted to the Federal Register for publication.

While the AEA encourages its membership not to sell C91a ELTs to customers without them knowing the latest ruling of the FCC, there is no immediate regulatory need for operators to upgrade their legacy C91a ELTs to the more modern C126 ELTs. For safety reasons, the AEA continues to encourage operators to upgrade their ELTs to the modern C126 ELT. Operators of legacy C91a ELTs should be made aware of the limited usefulness of their ELTs, as the justification for the FCC ruling indicates.

FAA Finalizes ADS-B Out Rule

The Federal Aviation Administration published the long-awaited final rule for automatic dependant surveillance-broadcast in May.

This final rule establishes equipment and airspace requirements and performance standards for ADS-B Out. The rule does not address ADS-B In.

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INTERNATIONAL NEWS

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Regarding equipment, operators will have two options for equipment under this rule: the 1090 MHz extended squitter broadcast link or the universal access transceiver broadcast link. Generally, this equipment will be required for aircraft operating in Class A, B and C airspace, certain Class E airspace and other specified airspace.

The final rule requires aircraft flying at and above 18,000 feet MSL (flight level 180, Class A airspace) to have ADS-B Out performance capabilities using the 1090 MHz ES broadcast link. The rule also specifies that aircraft flying in the designated airspace below 18,000 feet MSL can use either the 1090 MHz ES or UAT broadcast link.

Regarding airspace, the final rule prescribes ADS-B Out performance requirements for all aircraft operating in Class A, B and C airspace within the National Airspace System; above the ceiling and within the lateral boundaries of a Class B or Class C airspace area up to 10,000 feet MSL; and Class E airspace areas at or above 10,000 feet MSL over the 48 contiguous United States and the District of Columbia, excluding the airspace at and below 2,500 feet above the surface.

The rule also requires aircraft to meet these performance requirements in the airspace within 30 nautical miles of certain airports that are identified among the nation's busiest (based on annual passenger enplanements, annual airport operations count and operational complexity) from the surface up to 10,000 feet MSL. In addition, the rule requires aircraft to meet ADS-B Out performance requirements to operate in Class E airspace over the Gulf of Mexico at and above 3,000 feet MSL within 12 nm of the coastline of the United States.

FAA Publishes Airworthiness Approval of ADS-B Out

The FAA published Advisory Circular 20-165, "Airworthiness Approval of Automatic Dependent Surveillance-Broadcast (ADS-B) Out Systems," in May. This AC provides guidance for the initial installation and airworthiness approval of ADS-B Out equipment in aircraft.

The AC is for anyone who is applying for an initial type certificate, supplemental type certificate, an amended TC or an amended STC for the installation and continued airworthiness of ADS-B Out equipment.

Mode S Safety Alert Issued for U.S. Aircraft

The FAA published a safety alert for operators of all U.S.-registered Bombardier CL-600 aircraft regarding the potential hazards associated with non-compliance of EASA Mode S requirements when operating in Europe.

The FAA has received reports of U.S.-registered aircraft going undetected by the Mode S ground radar while operating in European airspace. Investigation of this problem revealed the Rockwell Collins TDR-94D transponder (P/N 5622-9219-008), which was installed in production aircraft from s/n 5631 onward and by optional in-service retrofit modifications through Bombardier Aerospace Service Bulletin 604-34-040 or SB 604-34-041 on preceding s/n aircraft, does not reply to "All Call" interrogation used by pure Mode S ground radar stations.

The TDR-94D transponder does not communicate with a pure Mode S ground radar station because of a wire strapping that was added for aircraft type category identification during the installation of the modifications. The aircraft type category strapping is part of a future ADS-B function. An error in the TDR-94D software associated with

this function can cause the transponder to remain in the "ground" mode, thus inhibiting replies to air traffic control Mode S interrogations when airborne.

This situation occurs when the European Aviation Safety Agency's Airworthiness Directive 2007-120 is not applied. The AD requires the removal of the aircraft type category strapping wires to both transponders. This strapping is used only for ADS-B; it is not used for the other transponders functions.

The FAA recommends U.S.-registered CL-600 aircraft operating in Europe should comply with Bombardier Aerospace SB 604-34-054, which incorporates instructions for removal of the aircraft type category strapping wires to both transponders.

For aircraft that have incorporated the corrective actions suggested in the Bombardier Advisory Wire 604-34-0078 via service request for product support action, the requirement of SB 604-34-054 already is met through Bombardier drawing 604-70482 engineering order, revision D-1. In this case, no further action is required other than to record the service bulletin incorporation in the logbook and send the SB incorporation sheet to Bombardier Business Aircraft Customer Service.

AC Provides Guidance, Instructions for EWIS

Advisory Circular 25-27A, "Development of Transport Category Airplane Electrical Wiring Interconnection Systems Instructions for Continued Airworthiness Using an Enhanced Zonal Analysis Procedure," describes parts of the compliance process for the "Enhanced Airworthiness Program for Airplane Systems/Fuel Tank Safety" rule.

The EAPAS rule requires design approval holders to include supplemental type certificate holders in developing instructions for continued airworthiness, consisting of maintenance and inspec-

tion tasks, intervals and procedures for the representative airplane's electrical wiring interconnection system for each affected type design.

The design approval holder also must review any fuel-tank system ICA it has developed in compliance with Special Federal Aviation Regulation No. 88 to ensure compatibility with the EWIS ICA, including minimizing redundant requirements. The design approval holder must submit the EWIS ICA to the FAA oversight office for review and approval.

The AC provides guidance for developing maintenance and inspection instructions for EWIS using an enhanced zonal analysis procedure. For the purposes of this AC, the term "maintenance" encompasses both "maintenance" and "preventive maintenance," as those terms are defined in Title 14, Code of Federal Regulations 1.1.

For airplane models for which the maintenance programs already include a zonal inspection program, the logic described in the AC provides guidance on improving those programs. For

airplanes without a zonal inspection program, use of this logic will produce zonal inspections for wiring that can be added to the existing maintenance program. The AC contains information operators can use to improve EWIS maintenance practices. It stresses the importance of inspecting EWIS, and it promotes a philosophy of "protect and clean as you go" when performing maintenance, repair or alterations on an airplane.

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FREQUENTLY ASKED QUESTIONS

United States

Inoperative Instruments, Equipment

The following information is from 14 CFR, Part 91.

QUESTION:

Can a Part 23 aircraft operated under Part 91 operate with an instrument that either doesn't work or displays inaccurate information?

ANSWER:

Maybe. There is some limited ability to defer maintenance on equipment and instruments under Part 91; however, is not automatic, so some homework needs to be done.

Let's assume this aircraft does not have a minimum equipment list. For the answer, we would start with 14 CFR 91.213, "Inoperative Instruments and Equipment." §91.213(d) allows a person to take off in a non-turbine-powered airplane with inoperative instruments and equipment provided the inoperative instruments and equipment are not part of the VFR-day type certification instruments and equipment prescribed in the applicable airworthiness regulations; indicated as required on the aircraft's equipment list or on the kinds of operations equipment list for the kind of flight operation being conducted; required by §91.205 or any other rule of this part for the specific kind of flight operation

being conducted; or required to be operational by an airworthiness directive.

Let's look at the instruments and equipment prescribed in the applicable airworthiness regulations under which the aircraft was type certificated. For our question, we need to look at 14 CFR Part 23. In this case, §23.1303 describes the required flight and navigation instruments, and §23.1305 describes the required powerplant instruments. Therefore, none of these can be inoperative.

Next, let's look at the aircraft's required equipment list and the equipment required for the kind of operation to be flown. The kinds of operation authorized and the meteorological conditions to which the operation of the airplane is limited or from which it is prohibited must be established appropriate to the installed equipment. Usually, both of these requirements are in either the type certificate data sheet or the flight manual. None of these instruments or equipment can be inoperative.

Now, let's look at §91.205, "Powered Civil Aircraft with Standard Category U.S. Airworthiness Certificates: Instrument and Equipment Requirements." This part of the regulation addresses the instruments required for day VFR, night VFR, instrument flight rules and night vision goggle operations. None of these instruments or equipment can be inoperative.

A Part 23 aircraft does have limited ability to fly with inoperable instruments; however, the list of equipment that must be operable far exceeds the list that is considered non-required and can be inoperable.

EUROPE News & Regulatory Updates

EASA Opinion Proposes to Amend Part 21

AEA members holding a design organization approval will be interested in the Europe Aviation Safety Agency's latest opinion: Opinion 01/2010, Part 21, Subpart J. This opinion was created based

on the comment response document to NPA 16-2006.

Subsequent comments to the CRD and an internal review group, in accordance with the agency's rulemaking procedure, showed the main concept of the CRD was not supported. The issues that remain controversial, including the scope of DOA, the balance between DOA and product certification, and the level and nature of agency involvement in product certification, will be subject to further agency review as part of an ongoing internal task related to the agency's strategic direction and role.

The final opinion proposes to amend

Part 21, in particular the provisions related to the demonstration of compliance with the type-certification basis and environmental protection requirements, as well as the possibility to extend DOA approvals to allow minor revisions of the flight manual without the agency's involvement. This would cover both technical changes to AFM associated with minor design changes under 21A.91 and other non-technical documentary changes as defined today.

The EU Commission could adopt the contents of the opinion within the next two months.

FREQUENTLY ASKED QUESTIONS

International: Europe

Grandfathered Approval

The following information is from an EASA FAQ.

QUESTION:

How do I know whether or not an approval has been grandfathered?

ANSWER:

Any part approved or validated by any member state before the establishment of EASA is deemed to be "grandfathered" under Regulation 1702/2003, Article 2 (3)(a).

EASA has published a list of JAA-approved equipment on its website at www.easa.europa.eu/ws_prod/c/c_etso.php.

Unfortunately, there are tens of thousands of these approvals, and it has not been possible to put together

a database. EASA normally recommends contacting the approval holder directly and checking to see whether or not it has had any EU customers. The approval holder should know who its customers have been because it has obligations to maintain continued airworthiness for its modifications. Another option would be to check with the NAA that issued the approval.

EASA approvals and grandfathered approvals are valid in all EU member states, as well as Iceland, Liechtenstein, Norway and Switzerland.

Note: The AEA offers "Frequently Asked Questions" to foster greater understanding of the aviation regulations and the rules governing the 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 upon. 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.

SOUTH PACIFIC News & Regulatory Updates

CASA Revises Airworthiness Directives AC

The Civil Aviation Safety Authority's Advisory Circular 39-01(4), "Airworthiness Directives," was revised in May. Australia's CAAP 51-2(1), "Detecting

and Reporting Suspected Unapproved Parts," also was revised in May. Both of these revised documents are available on the CASA website at www.casa.gov.au.

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Implementation of SMS in Canada

BY JOHN CARR, AEA CANADIAN REGULATORY CONSULTANT

Part 1: *The Baseline Quality Management System*

Required Quality Assurance Program

CAR 573.09 states: 1) The holder of an approved maintenance organization certificate shall establish and maintain a quality assurance program consisting of provisions for sampling maintenance processes to evaluate the AMO's ability to perform its maintenance in a safe manner.

CAR STD 573.09 states: Information note — The Quality Assurance Program (hereinafter, "the program") established under Section 573.09 of the Canadian Aviation Regulations is not intended to be based solely on a system of end product inspection, but rather upon periodic verifications of all aspects of the systems and practices used in the performance of maintenance. The program should provide an unbiased picture of the AMO's performance to verify that activities and results comply with the MPM and confirm that the MPM and the systems and procedures described within it remain effective.

1) The program shall, as a minimum, cover all functions defined within the MPM and include all elements necessary to ensure effectiveness, quality and safety. It shall confirm that the AMO is in compliance with the applicable regulations and with the MPM by addressing operational and environmental conditions, organizational structure, record keeping systems, etc., and ensure that all referenced procedures remain applicable and effective.

The CARs do not provide any details of the procedural elements to be included in the quality assurance program, nor does TCCA provide any guidance material to assist AMOs in meeting the requirements. As an effective quality assurance/management program will be the basis for the upcoming implementation of SMS

into Canadian AMOs, a summary of the elements of such a program is outlined below.

AEA member AMOs in Canada are recommended to adopt these elements into their quality assurance program in advance of SMS implementation to smooth the transition into SMS.

This is the first in a series of articles focusing on the implementation of safety management systems in Canadian AMOs to meet the upcoming Transport Canada regulatory requirements for SMS. This initial article explains how a comprehensive quality management system designed to meet CAR 573.09 "Quality Assurance Program" requirements will form a sound basis for the future SMS program. Subsequent articles will detail the gap analysis methodology necessary to evaluate and document the delta between the QMS and SMS requirements. TCCA will require a completion of a gap analysis as part of the initial phase of SMS implementation.

Quality Management System Elements

The basic elements of a quality management system applicable to an AMO are:

1) Management Responsibility — This describes the management role in the QMS, including a management commitment to quality and the support of the QMS; identification of the responsible managers; reporting and management review procedures; and management support of independent quality verification activities.

2) Quality System Description — A summary of the QMS elements is provided, including applicable quality standards, quality goals, types of internal procedural documents, and required quality system audits.

3) Quality Program Procedures — Detailed procedures are required to control the quality of the following activities as applicable to the work performed by a particular AMO:

- Contract Review: For review of customer contracts to ensure the contract requirements are understood clearly by all concerned and the AMO has the capability to meet all customer requirements. Contract review activities are specified.

- Document and Data Control: To control, distribute and maintain documentation, including drawings, specifications, manuals, technical instructions, customer documents and regulatory forms and documents.

- Purchasing: To ensure purchased products and services comply with specified requirements.

- Process Control: To be used for planning, controlling and maintaining quality of work performed on customer products. This will include the use of work process forms, procedures for calibration of test equipment, inspection and test requirements, and final certification of the work performed.

- Inspection and Testing: For inspection and testing activities, including inspection of incoming products and materials, in-process inspec-

tions, and final inspections and tests. Inspection and test documentation and records shall be described, including use of the TCCA authorized release form.

- Control of Inspection Measuring and Test Equipment: For selection, control, calibration and maintenance of all inspection, measurement and test equipment.

- Control of Nonconforming Product: For the control of non-conforming incoming products, including purchased parts and components, with procedures for resolving major non-conformances and disposition of such parts.

- Corrective and Preventive Action: To assure conditions adverse to quality are promptly detected, analyzed and corrected.

- Handling, Storage, Packaging, Preservation and Delivery: For finished product handling, storage, packaging, preservation and delivery, including parts and materials received from customers and suppliers/subcontractors.

- Control of Quality Records: For the control and maintenance of quality records, such that customers and regulatory authorities will have evidence of conformity of the finished products to applicable specifications and airworthiness standards.

- Internal Quality Audits: For the internal auditing of the AMO's quality system, including audit objectives, audit intervals, management responsibilities, causal analysis methods and corrective action procedures, auditor training requirements and audit reporting requirements.

- Training: For identification of training requirements for employees, including initial training, regulatory training and specific skills training. Description of the training records system.

The elements identified above should be included in a quality system policy manual or quality procedures manuals, which would be referenced in the AMO's maintenance procedures manual and be made available to TCCA. □