INTERNATIONAL NEWS AND REGULATORY UPDATES

FROM RIC PERI
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 BRUCE BAXTER
SOUTH PACIFIC REGULATORY CONSULTANT FOR AEA

Turmoil in the South Pacific Region

The South Pacific region is experiencing turmoil resulting from a number of events in the industry that have caused significant concern for AEA members.

These events can be divided into smaller, more defined units as follows:

• The Civil Aviation Safety Authority is eliminating all of the current regulations and replacing them with an Australianised version of EASA regulations. While many AEA members agree that some sort of regulatory change is necessary, they do not believe CASA's direction will provide them with sustainable growth in their businesses and it will add significant costs for compliance with no additional safety benefit. Figures in excess of AU $70,000 have been estimated — and all this in a downturned economy and a shrinking customer base.

• Air Services Australia has increased pressure to introduce ADS-B. While AEA members support the ADS-B mandate, there is concern regarding the timeline for fitment and the availability of competitive products.

• The decline of general aviation in Australia is a major concern for AEA members. For example, the federal government has privatized many of the secondary and smaller airports, resulting in the operators of these airports having limited knowledge in the correct operation of an airport. The cost of leasing airport space suddenly has increased at a rate not in step with regular commercial rates in the area. Some members report a 300 percent increase in a 12-month period. In addition, few new people are entering the industry either as pilots or maintenance personnel. The list goes on.

The AEA has been quite active in addressing the concerns of its members in the following ways:

• The AEA retains its seat on the CASA Maintenance Subcommittee working to influence the regulatory process to include a workable GA component. However, the group has ceased meeting physically, with most of its work now done online. The AEA continues to push the GA barrow for its members through this forum.

• Air Services Australia invited the AEA to attend the ASTR Surveillance Technologies Working Group in October as an observer, providing input into the ADS-B and satellite-based navigation white paper. Unfor-

tunately, because of short notice and difficult travel arrangements to Canberra, I could not attend. However, it was considered important enough to have an AEA representative at the meeting with the express focus of gaining the AEA a permanent seat on the committee. Under direction from Michael Kus, AEA's South Pacific director, Gordon Cox from Avionics 2000 attended in my absence and was successful in getting the ASTRA Plenary to include the AEA as a member and for me to represent the AEA at future meetings.

• I was able to attend the GA Revitalization Forum in Bankstown in October. Paul Tyrrell, CEO of the Regional Airline Association of Australia, discussed this event during the AEA South Pacific Meeting in September in Coolum.

In addition to myself, AEA representation at the meeting also included Gordon Cox and Peter Flanagan of Pacific Avionics. At the conclusion of the meeting, it was decided a six-member committee would be formed from the 30 attendees. Flanagan formally nominated me for this committee, and the nomination was accepted by the room. The committee is in the process of documenting the resolutions from this meeting, and the AEA will forward those to its members when available.

Europe

The AEA was represented at the European Private Aviation Conference in November, in Vienna. Following the EPAC conference, the AEA conducted a repair station training program with a major European repair station.

The AEA also is represented at a series of EASA meetings toward the end of the year in Cologne, including a continuation of the B-2L (B-4), the quarterly European General Aviation Safety Team meeting, the semi-annual Engineering and Maintenance Subcommittee meeting of the SSCC and the semi-annual Certification Management Team meeting.

The B-2L meetings have progressed well, with a general aviation alternative progressive approach to achieving a full B-2 license while earning progressive return-to-service authority. The final proposal, which should be introduced in 2011 as a notice of proposed rulemaking, likely will be close to the initial proposal the AEA member working group put forth in 2009.

Following these meetings in Cologne, the AEA will meet with CAE in Amsterdam to discuss the lack of type-training programs for the general aviation fleet.

UNITED STATES
News & Regulatory Updates

FAA Issues Proposed Rule for Air Ambulance, Commercial Helicopters

The Federal Aviation Administration has issued a proposed rule addressing air ambulance and commercial helicopter operations; Part 91 helicopter operations; and load manifest requirements for all Part 135 aircraft.

From 2002 to 2008, there has been an increase in fatal air ambulance helicopter accidents. To address these safety concerns, the FAA is proposing implementing operational procedures and requiring additional equipment onboard helicopter air ambulances. Many of these proposed requirements currently are found in agency guidance publications and would address National Transportation Safety Board safety recommendations.

Some of these safety concerns are not unique to the air ambulance helicopter industry; they impact all commercial helicopter operations. Accordingly, the FAA also is proposing amending regulations pertaining

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to all commercial helicopter operations conducted under Part 135 to include equipment requirements, pilot training and alternate airport weather minima. The changes are intended to provide certificate holders and pilots with additional tools and procedures to aid in preventing accidents.

Of particular interest to AEA members are the two equipment proposals. The proposal would require all commercial helicopters to be equipped with radio altimeters. In addition, the proposal would require air ambulance helicopters to equip with helicopter terrain awareness and warning systems, and possibly light-weight aircraft recording systems.

Comments are due to the FAA prior to Jan. 10, 2011.

FAA, Industry Developing Electrical Wiring Systems Consensus Standards

Under the provisions of the revised Office of Management and Budget Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities," dated Feb. 10, 1998, the industry and the FAA have been working with ASTM International to develop consensus standards for the design, fabrication, modification, inspection and maintenance of electrical systems installed on normal and utility category airplanes.

These consensus standards satisfy the FAA's goal for airworthiness certification and a verifiable minimum safety level for normal, utility, acrobatic and commuter category airplanes. Instead of developing airworthiness standards through the rulemaking process, the FAA participates as a member of Committee F39 in developing these standards. The use of the consensus standard process ensures government and industry discussion and agreement on appropriate standards for the required level of safety.

FAA to Accept ASTM International's Standard Practices for Wiring Systems

The FAA has issued a notice announcing its intention to accept ASTM International's F2639-0, "Standard Practice for Design, Alteration and Certification of Airplane Electrical Wiring Systems," as an acceptable means of compliance to the 14 CFR Part 23 sections concerning electrical wiring systems.

With this notice, the FAA finds the standards to be acceptable methods and procedures for design, alteration and certification of electrical wiring systems for normal, utility, acrobatic and commuter category airplanes.

A notice of availability will be issued only for new or revised standards. Reapproved standards issued with no technical changes or standards issued with editorial changes only are considered accepted by the FAA without need for an NOA.

The FAA also issued another notice announcing its intention to accept ASTM International's F2696-08, "Standard Practice for Inspection of Airplane Electrical Wiring Systems," as an acceptable means of compliance to the 14 CFR Part 23 sections concerning electrical wiring systems. With this notice, the FAA finds the standards to be acceptable methods and procedures for inspection of electrical wiring systems for normal, utility, acrobatic and commuter category airplanes.

In a third notice, the FAA announced its intention to accept ASTM Internationals F2799-09, "Standard Practice for Maintenance of Airplane Electrical Wiring Systems," as an acceptable means of compliance to the 14 CFR Part 23 sections concerning electrical wiring systems. With this notice, the FAA finds the standards to be acceptable methods and procedures for maintenance of electrical wiring systems for normal, utility, acrobatic and commuter category airplanes.

These notices announce the availability of consensus standards. The FAA expects a suitable consensus standard to be reviewed at least every two years. The two-year review cycle will result in a standard revision or reapproval. A standard is issued under a fixed designation (such as F2639-07); the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A reapproval indicates a two-year review cycle completed with no technical changes.

These consensus standards are copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, Pa., 19428.

FREQUENTLY ASKED QUESTIONS

United States

Non-TSO Electronic Displays in Amateur-Built Experimental Aircraft

The following information is from Federal Aviation Administration and Federal Aviation Regulations legal interpretations.

QUESTION:

Does a non-TSO electronic flight display meet the requirements of §91.205(d) for instrument flight rules operations in an aircraft with special airworthiness certificates?

ANSWER:

No, a non-TSO electronic flight display cannot be used for IFR operations in an aircraft with a special airworthiness certificate.

The following explanation is from a Feb 9, 2009, interpretation:

Paragraph (a) of §91.205 states, "No person may operate a powered civil aircraft with a standard category U.S. airworthiness certificate in any operation described in paragraphs (b) through (f) of this section unless that aircraft contains the instruments and equipment specified in those paragraphs (or FAA-approved equivalents) for that type of operation, and those instrument and items of equipment are in operable condition."

This section specifically addresses aircraft with standard category airworthiness certificates and does not apply to aircraft with a special (experimental) airworthiness certificate.

The FAA directs the petitioner to §91.9, which requires any person operating a civil aircraft to comply with the aircraft's operating limitations. FAA policy governing the issuance of experimental amateur-built operating limitations specifically addresses your reference to an EAA article about homebuilt aircraft and §91.205. Under this policy, the FAA may impose any additional limitations deemed necessary in the interest of safety.

Paragraph 153(b)(8) of this order is included specifically in the operating limitations for any experimental amateur-built aircraft, stating: "After completion of Phase I flight testing, unless appropriately equipped for night and/or instrument flight in accordance with §91.205, this aircraft is to be operated under VFR, day only.

While §91.205 is not directly applicable to amateur-built experimental aircraft, through FAA policy (FAA Order 8130.2F), the agency does require compliance with §91.205 for instrument flight rules operations of an aircraft with special airworthiness certificate.

CANADA

News & Regulatory Updates

Transport Canada Proposes Amendments to 406 MHz ELT Requirements

Transport Canada Civil Aviation has issued proposed rulemaking to mandate installation of 406 MHz emergency locator transmitters, with certain exceptions. This rule is anticipated to come into effect in 2011, with a phase-in period to be announced.

Associated with this rulemaking, TCCA has issued a notice of proposed amendment to revise the airworthiness standards for ELTs, their batteries, beacon coding and registration, and installation. NPA 2010-19 has the following proposals:

• 406 MHz ELT Design Standards: TCCA will recognize FAA TSO-C126, or subsequent revisions, as appropriate for aviation use in Canada, and proposes to amend the airworthiness manual or CAR STD 551.104 accordingly. The installation criteria proposed will include consideration for 406 MHz ELT-specific technologies, such as possible use of a programming module, and to address the differences between the design approval standards of FAA TSO-C126 and TSO-C126a.

• ELT Battery Design and Installation Standards: AWM 551.104 currently prohibits the installation of lithium or magnesium batteries in any ELT packed inside a life raft in an aircraft. This requirement was introduced in the 1970s. At the time, lithium and magnesium batteries were new and unproven technologies. Hence, the requirements set out in AWM 551.104

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reflected the requirements believed necessary to address concerns with ELT batteries at the time.

Following the introduction of lithium batteries for use in ELTs, there were various incidents of lithium-battery fires and explosions. As a result, TCCA issued Airworthiness Directive CF-81-29, "Emergency Locator Transmitters," and Airworthiness Notice B014, "Emergency Locator Transmitters and Batteries." Since then, lithium battery technology has improved.

TCCA has determined that batteries meeting the minimum performance specifications of FAA TSO-C142, or later revisions, would have an acceptable level of safety. A TCCA review of past occurrences reveals no other issue with lithium and magnesium batteries. In addition, there is no known hazard when lithium or magnesium batteries come into contact with water.

TCCA issued Exemption No. 117-2009 in December 2009 to exempt persons operating an aircraft with ELT installations from the battery requirements of AWM 551.104(c) and 551.104(f)(3)(iii) as long as the battery meets the standards of either FAA TSO-C142, TSO-C142a, TSO-C173 or TSO-C179. This NPA proposes to amend AWM 551.104 accordingly.

• 406 MHz ELT Beacon Coding and Registration: This NPA proposes that each 406 MHz beacon be registered with the Canadian Beacon Registry and notification be made to the Canadian Beacon Registry of any change of aircraft ownership, aircraft registration or emergency contacts.

• Installation Requirements: TCCA proposes to replace its unique ELT installation requirements currently in AWM 551.104 with requirements aligned with those contained in FAA TSO-C126 or subsequent revision. In particular, this clarifies installation orientation if the ELT is equipped with a unidirectional g-switch, then its sensitive axis points in the specified direction. Earlier models of ELT contained only one sensitive axis, and TCCA required this sensitive axis be aligned so as to maximize the probability of ELT activation following a crash. New models of ELTs contain multi-axis sensors, which are capable of activating following impacts at any of several aircraft attitudes. The proposed amendment requires that the sensitive axis points in the direction specified, if there is only a unidirectional g-switch.

Transport Canada Adopts New Aviation Safety Alert Program

TCCA currently distributes aviation safety information to stakeholders through the use of several types of documents, which include Service Difficulty Advisories and Service Difficulty Alerts. As part of a continuous improvement process, TCCA has consolidated these documents into one single document, now called Civil Aviation Safety Alerts. These are non-mandatory notifications used to convey important safety information and recommended action items. According to TCCA, the information contained in a Civil Aviation Safety Alert is critical and will be conveyed to the appropriate recipients in a timely manner. Recipients are expected to take the alert's recommendations into consideration during ongoing operations and maintenance.

TCCA's public website now features a dedicated web page for Civil Aviation Safety Alerts: www.tc.gc.ca/civil-aviation-safety-alert.

EUROPE
News & Regulatory Updates

EASA Planning Part 21 DOA Implementation Workshop

EASA currently is planning a Part 21 design organization approval implementation workshop. A few details regarding the workshop recently were made public on the EASA website.

The topics to be discussed are:

- Rulemaking activities affecting Part 21
- Use of approved data
- Implementation of Operational Suitability Directives
- EASA Internal Occurrence Reporting System
- NVIS
- EWIS

EASA Publishes Internal Certification Working Procedures

EASA has reviewed and issued a number of its internal certification working procedures that might be of interest to AEA members. These working procedures explain how EASA carries out its certification tasks.

Samples of these recently published procedures can be found on the EASA website and include the following:

- Supplemental type certification
- Approval of repair design
- ETSO authorization
- Approval of flight conditions and permit to fly

In addition, Certification Standard 23 Amdt. 2 recently was issued with Executive Director Decision 2010/008/R. The main changes are the use of composite material now is covered largely in the structure section of the standard. This might be of importance to companies performing modification such as antenna installations. Furthermore, a reference to AC23-17B now is provided for the certification of automatic pilot systems.

EUROCAE/RTCA Issue EVS, SVS Performance Standards

RTCA recently issued DO-315A, "Minimum Aviation System Performance Standards for Enhanced Vision Systems, Synthetic Vision Systems, Combined Vision Systems and Enhanced Flight Vision Systems." It provides system design criteria for the use of enhanced flight vision systems for landing with reported visibility as low as 1,000 feet RVR (or 300 meters).

Included are touchdown zone requirements, as well as use of a radio altimeter and flare prompt. The flight-test matrix was expanded and a transport aircraft appendix was added. Vertical flight path guidance, flare guidance, pilot monitoring display requirements and design assurance requirements also were addressed. Synthetic vision performance requirements were not changed, but are planned for future revisions.

FREQUENTLY ASKED QUESTIONS
INTERNATIONAL

Modifications Made in the United States

The following information is from an EASA FAQ recently published on its website.

QUESTION:

My aircraft has been modified in the United States by Form 337 action. Can EASA accept this?

ANSWER:

There is no automatic acceptance from EASA of Form 337 approvals, except under certain limited conditions. They need to be assessed individually and might need to be separately approved, normally by application for a minor change or by an approved organization under its DOA.

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.

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Implementation of SMS in Canada

BY JOHN CARR, AEA CANADA REGULATORY CONSULTANT

Part V: *Safety Oversight*

This is the fifth 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 series, which commenced in the August issue of *Avionics News*, has helped to explain how a comprehensive quality management system designed to meet CAR 573.09 "Quality Assurance Program" requirements, can form a sound basis for the future SMS program. TCCA's requirement for a gap analysis also has been discussed, and sample gap analyses for development of a safety management plan and the documentation elements of SMS were provided.

This month's sample gap analysis addresses the initial safety oversight elements of SMS. It is noted where these SMS elements may be satisfied by the AMO's existing quality assurance program.

Sample Gap Analysis Form (573 AMOs)

Safety Management System Requirements	Response (Yes/No)	If yes, state where the requirement is addressed. If no, record SMS processes that need further development.	
		Small AMO (1-10 persons)[1]	Large AMO (>10)[2]
Component 3, Safety Oversight – Element 3.1, Reporting (CAR 107, CAR/STD 573.16[3])			
Safety oversight is fundamental to the safety management process. Safety oversight provides the information required to make an informed judgment on the management of risk in your organization. Additionally, it provides a mechanism for an organization to critically review its existing operations, proposed operational changes and additions or replacements, for their safety significance. Safety oversight is achieved through two principal means: *1. Reactive processes for managing occurrences, including event investigation and analysis;* *2. Proactive processes for managing hazards, including procedures for hazard identification, active monitoring techniques and safety risk profiling.* *The following must be reported:* *• any incident or accident involving injury or damage to personnel, equipment or facilities;* *• any incident or accident involving injury or damage to non-organization personnel, equipment or facilities, resulting from organization operations.* *When an occurrence, incident or accident occurs it must be documented by completing the OCCURRENCE REPORT AND HAZARD IDENTIFICATION FORM [4]*			
Does the organization have a reactive process or system that provides for the capture of internal information including incidents, accidents and other data relevant to SMS? Is the reactive reporting process simple, accessible and commensurate with the size of the organization? *NOTE:* *These items also are applicable to Element 3.2, Proactive Processes.*	No	***1- person AMO:*** In an organization of minimal or moderate complexity, a simple documentation tool, such as an incident and hazard record book for reactive process management, may be considered. *Refer to AC 107-002, App. A, Sec. 3.1*	***AMO > 10 persons*** We will maintain an occurrence/ hazard reporting system (reactive/ proactive) to collect and analyze data and carry out investigations. *Larger organizations may employ a more sophisticated, on-line safety reporting system.* *Refer to AC107-001, Sec 6.2.*

[1] Not all SMS elements will be required for small AMOs. AC107-002 addresses alleviations for AMOs with 1-person and 2-10 persons.
[2] AC107-001 addresses requirements for large AMOs.
[3] CAR 573.16 will address SMS requirements for "573" AMOs. It has not yet been published. Requirements are taken from the NPAs for CAR 573.16 and STD 573.16.
[4] Sample Forms will be provided on the AEA Regulatory Affairs web site at the conclusion of this series.

Are reactive reports reviewed at the appropriate level of management? *NOTE:* *These items also are applicable to Element 3.2, Proactive Processes.*	No	***1- person AMO:*** N/A ***2-10 person AMO:*** All events and emerging hazards shall be reported to an appropriate manager, as identified in the Safety Management Manual. The manager will then forward it for processing.	***AMO > 10 persons*** All events and emerging hazards shall be reported to an appropriate manager, as identified in the Safety Management Manual. The manager will then forward it for processing.
Is there a feedback process to notify contributors that their reports have been received and to share the results of the analysis? *NOTE:* *These items also are applicable to Element 3.2, Proactive Processes.*	No	***1- person AMO:*** N/A ***2-10 person AMO:*** There will be a feedback process to notify contributors that their reports have been received and to share the end results of the analysis.	***AMO > 10 persons:*** Self-identified reporters will receive a response acknowledging their submission within 5 days, and an update within 30 days or upon process completion, that will identify the end results of the analysis.
Is there a process in place to monitor and analyze trends? *NOTE:* *These items also are applicable to Element 3.2, Proactive Processes.*	No	***All AMOs:*** There will be a process in place to monitor and analyze trends. A risk assessment will be performed when: • trend analysis shows that previous corrective actions have not resolved similar concerns; • it is not clear what the root cause is; • the issue is complex; • the potential loss is severe; or • the person responsible for safety or other personnel feel it is necessary. *Sample tools that can be utilized to investigate events may be found in AC107-001, Sec 6.2.6*	
Are corrective and preventive actions generated in response to event/hazard analysis? *NOTE:* *These items also are applicable to Element 3.2, Proactive Processes.*	No	***All AMOs:*** A process will be in place to ensure that every event or hazard shall be investigated. The extent of the investigation will depend on the actual and potential consequences of the occurrence or hazard. This may be determined through a risk assessment. Reports that demonstrate a high potential will be investigated in greater depth than those with low potential.	

Component 3, Safety Oversight – Element 3.2, Hazard Identification and Proactive Processes (CAR 107, CAR/STD 573.16)

For a SMS to transition from a reactive to a proactive system, it must actively seek out potential safety hazards and evaluate the associated risks. This can be achieved through the application of safety assessment practices. A safety assessment allows for the identification of potential hazards and then applies risk management techniques to effectively manage the hazard. Even though the reactive process deals with events that have already happened and the proactive process looks for potential problems, the methods used to manage both are similar. While these processes are separate issues, many organizations will choose to combine them as much as practicable due to their similarities.

Hazard identification is the act of identifying any condition with the potential of causing injury to personnel, damage to equipment or structures, loss of material, or reduction of the ability to perform a prescribed function. In particular, this includes any conditions that could contribute to the release of an un-airworthy aircraft, to the operation of aircraft in an unsafe manner or unsafe practices in a maintenance environment.

When a hazard is identified it must be documented by completing the OCCURRENCE REPORT AND HAZARD IDENTIFICATION FORM [5]

NOTE:
Many of the items of Element 3.2 are also applicable to Element 3.1, Reporting, and are noted above. Only those additional items applicable to Element 3.2 are identified below.

Does the organization have a process or system that provides for the capture of internal information including hazard identification, occurrences and other data relevant to SMS? Is the proactive reporting process simple, accessible and commensurate with the size of the organization?	No	***1- person AMO:*** In an organization of minimal complexity, a simple documentation tool such as an incident and hazard record book for proactive process management may be considered. *Refer to AC 107-002, App. A, Sec. 3.2*	***AMO > 10 persons*** We will maintain an occurrence/hazard reporting system (reactive/proactive) to collect and analyze data and carry out investigations. *Larger organizations may employ a more sophisticated, on-line safety reporting system.* *Refer to AC107-001, Sec 6.*
Has the organization planned self-evaluation processes, such as regularly scheduled reviews, evaluations, surveys, operational audits, assessments, etc.? Is a process in place for analyzing changes to operations or key personnel for hazards?	No	***All AMOs:*** A process will be in place for safety assessment of all company processes used to perform a specific operation. This involves an ongoing assessment of the functions and systems, and any changes to them. Changes to operations or key personnel will be included in this process. *Refer to AC107-001, Sec 6.3*	

[5] *Sample Forms will be provided on the AEA Regulatory Affairs web site at the conclusion of this series.*

SUMMARY

The SMS safety oversight elements of reporting, hazard identification and proactive processes would be additions to the AMO's existing quality management system, and hence would require a separate system.

AC107-001 Sec. 6 contains guidance for implementation of the safety oversight elements that may be used by AMOs of all size and complexity as appropriate. Diagram 5 - SMS Process Flow, should be used to identify the necessary processes and their relationships.

The next article in this series will look at the Investigation and Analysis elements of the Safety Oversight system. ❑