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.*

Why Won't My Authority Accept a U.S. AML-STC?

At this year's AEA European Meeting in Cologne, Germany, I continued to hear: "Why won't my authority allow me to use a U.S. AML (approved model list) STC (supplemental type certificate) to import an avionics product?"

The use of multiple-model STCs always has been questioned, and the AML-STC is just a special case of a multiple-model STC.

An AML-STC is a misleading name causing significant confusion. The FAA advisory circular AC 21-40A classifies STCs as "one-only" STCs for modification of a specific serial numbered aircraft, aircraft engine or propeller, or "multiple-model" STCs when the applicant intends to modify two or more aircraft, aircraft engines or propellers.

An AML-STC is simply a special type of multiple-aircraft STC, and very few countries have ever blindly accepted a multiple-aircraft applicable STC without specific aircraft validation.

The design and substantiating data of a one-only STC might be of a quality that prevents parts from being reproduced, or the applicant might only want one. According to FAA policy, a one-only STC cannot be amended.

The design and substantiating data of a multiple-model STC must be of a quality that enables parts and the installation to be reproduced on multiple models of the same aircraft.

Multiple-model STCs may be amended to add new models and show revised data. The FAA will amend the certificate with the original STC number and an amendment date. One-only STCs will not be amended to become multiple STCs.

The FAA will not issue new one-only STCs for the same modification by the same applicant. If the applicant wants a multiple-model STC for the same type one-only STC installation, the applicant will be required to upgrade the data and apply for a separate new multiple-model STC with a new STC number.

As with any other multiple-model STC application, the applicant must submit sufficient data to verify manufacturing and installation of the design can be duplicated on the subsequent aircraft, engines or propellers.

To amend the "applicability list" of an STC, the applicant had to continually open the STC. This proved costly, and it prohibited the use of multiple-model STCs for the installation of modestly priced avionics products. As a result, the industry adopted the practice of using one-only STCs and performing follow-on installations of the avionics systems in other aircraft using the original STC as the basis of a FAA field approval.

As new technology was introduced, hardware costs continued to come down. In contrast, the avionics installation approval process became increasingly more rigorous and costly for applicants seeking installation approval of new systems in Part 23 and CAR 3 aircraft. In addition, the field approval process often provided an inconsistent level of FAA oversight for follow-on avionics installations.

Typically, field approvals are based on a single STC with little or no follow-on FAA Aircraft Certification Organization involvement. For more complex avionics installations, a follow-on field approval did not always adequately address interface considerations to existing equipment. This, along with the increased cost of STC approvals, warranted a change in the avionics approval process for Part 23 and CAR 3 aircraft.

The "Industry and FAA Avionics Approval Guide," co-authored by the Aircraft Electronics Association, described the certification process for design and installation approval of modern avionics systems. It suggested the expanded

use of a simplified process to streamline Part 23 avionics installation approvals. This process is the modern-day AML-STC.

An AML-STC is a hybrid type of STC process combining the simplicity of a one-only STC with the wide application of a multiple-model STC. The AML-STC allows a single STC to address several different TCs by generally documenting the data and limits suitable to each of the several different aircraft.

The FAA determined the installation instructions for these relatively low-risk installations far exceeded legacy installation manuals, and therefore, the AML-STC was a more efficient use of resources for avionics installations compared to issuing multiple single-model STC approvals for installations that are similar or identical for several different models of aircraft.

To keep track of the various models, an approved model list is created and attached to the supplemental type certificate. Whenever another model is added or a document is amended, the AML is changed, not the STC. This lessens the number of STC approvals and is a more efficient use of FAA resources compared to issuing multiple single-model approvals.

STC approvals with an AML have the same data requirements as an STC applicable to a single model of aircraft. It was the belief of the industry and the FAA, when making avionics modifications, it is possible to combine the current STC approval process with some of the advantages of the field approval process.

Field approvals typically allow for data from a single STC to be reused for multiple approvals when supplemented with Part 43 "acceptable data." The AML provides an advantage by requiring the applicant to evaluate and document the differences in aircraft installations and including appropriate installation instructions for all approved models.

When evaluating an AML-STC for use on the importation of avionics products, you need to first understand it is a uniquely "generic" STC and it might not contain the specific aircraft installation data necessary to satisfy your country's regulatory body. However, the STC might contain valuable information to help you develop your own STC — although it is not eligible for validation as written.

For more information regarding the AML-STC, read FAA AC 21-40A, available at www.faa.gov.

UNITED STATES
News & Regulatory Updates

FAA: Sandel Avionics Airworthiness Directive Revised

On June 13, 2008, the FAA issued a revised airworthiness directive on Sandel Avionics Inc.'s Model ST3400 terrain awareness warning system/radio magnetic indicator (TAWS/RMI) units approved under technical standard orders C113, C151a or C151b and installed on various small and transport category airplanes.

The existing AD currently requires installing a warning placard on the TAWS/RMI and revising the limitations section of the airplane flight manual. The existing AD also requires installing upgraded software in the TAWS/RMI. The new AD allows installing later revisions of the software described in the existing AD.

The new AD results from a report that an in-flight bearing error occurred in a Model ST3400 TAWS/RMI configured to receive bearing information from a high-frequency omni-directional range (VOR) receiver interface via a composite video signal. The error was reportedly a combination of an input signal fault and a software error.

The FAA is issuing the revised AD to prevent a bearing error, which could lead to an airplane departing from its scheduled flight path and result in a reduction in separation from, or a possible collision with, other aircraft or terrain.

The AD went into effect July 18, 2008, and revises AD 2006-16-18, which applies to Sandel Model ST3400 TAWS/RMI units approved under technical standard order(s) C113, C151a, or C151b as installed on various small and transport category airplanes.

The following information has been extracted from AD 2006-16-18R1. In part, AD 2006-16-18 R1 states:

• Installing Placard: Within 14 days after Sept. 25, 2006 (the effective date of the original AD 2006-16-18), install a placard on the TAWS/RMI, which states, "Not For Primary VOR Navigation," in accordance with Sandel ST3400 Service Bulletin SB3400-01, Revision B, dated Sept. 15, 2004.

• Revising Airplane Flight Manual: Within 14 days after Sept. 25, 2006, revise the limitations section of the applicable AFM to include the following statement: "Use of ST3400 TAWS/RMI for primary VOR navigation is prohibited unless the indicator has 3.07 or A3.06 software or later." This may be done by inserting a copy of this AD into the AFM.

• Updating Software: Within 90 days after Sept. 25, 2006, in accordance with Sandel ST3400 Service Bulletin SB3400-01, Revision B, dated Sept. 15, 2004, field-load the TAWS/RMI with updated software having revision 3.07 (for units having serial numbers under 2,000) or revision A3.06 (for units having serial numbers 2,000 and subsequent). Revisions of software

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later than revision 3.07 or A3.06, as applicable, are considered acceptable for compliance with the requirements of this paragraph. The placard and AFM limitations revision installed as required by paragraphs (f) and (g) of this AD may be removed after the software upgrade required by paragraph (h) of this AD has been accomplished.

• Parts Installation: As of 90 days after Sept. 25, 2006, no person may install, on any airplane, a Model ST3400 TAWS/RMI unit unless it has been modified in accordance with Sandel ST3400 Service Bulletin SB3400-01, Revision B, dated Sept. 15, 2004.

You must use Sandel ST3400 Service Bulletin SB3400-01, Revision B, dated Sept.15, 2004, to perform the actions required by this AD, unless the AD specifies otherwise.

FREQUENTLY ASKED QUESTIONS
United States

TOPIC:
Approved Model List (AML) Supplemental Type Certificate (STC)

The following information is from the Federal Aviation Regulations.

QUESTION:

There appears to be a conflict between the Garmin GNS 430W STC upgrade and the Cirrus Service Bulletin regarding WAAS upgrades. Do I follow the service bulletin or do I follow the STC?

ANSWER:

Both.

During the past few months, this is a question I have received from a number of shops. According to the Garmin STC upgrade, previously approved GPS antenna installations are acceptable once you upgrade the antenna to a WAAS antenna.

According to the Cirrus Service Bulletin, the original GPS mount location is not acceptable for WAAS, and the antenna must be externally mounted.

This appears to be a conflict, leaving many shops wondering what to do.

The answer is a bit complicated, but it includes a couple of basic issues:

• In general, service bulletins are not mandatory on aircraft operating under Part 91. However (and this is a really big however), the Cirrus Service Bulletin says the system will not work properly unless you move the antenna.

14 CFR 23.1301(d) states, "Each item of installed equipment must function properly when installed." This goes beyond the simple turning it on and off — it also includes the proper operation of the WAAS receiver in all flight regimes in all latitudes, and for the installed equipment to meet the performance requirements of the TSO as installed.

This is almost impossible for the average shop to demonstrate; therefore, to comply with 14 CFR 23.1301, the shop must accept what the aircraft OEM says and comply with the Cirrus Service Bulletin.

QUESTION:

But what about the STC? The STC does not "require" the external antenna.

ANSWER:

This is where an understanding of the STC is warranted. An AML-STC is different. The generic approach to AML-STCs is uniquely different than the specific nature of multiple-model STCs, which contain explicit directions applicable to each model of aircraft.

While it always has been the installer's responsibility to ensure an STC is applicable to a particular aircraft's configuration, in the generic approach of the AML-STC, the installer has the added burden of making the installation specific to the aircraft. While it is always the installer's responsibility to ensure the equipment functions properly after installation — regardless of the source of the data — the generic nature of the AML-STC places additional burden on the installer.

Avionics equipment traditionally had been installed using the general installation data from a base-line STC. Then, each shop would customize the data package for its unique installation. Then, the installer would submit this revised data package for a follow-on field approval.

The AML-STC is a hybrid STC. It has the generic approach of the base-line STC with some of the general procedures for installation and interface included in a follow-on field approval, as well as the ease of installation and approval of a multi-model STC. But it isn't without some unique requirements for the installer.

Ultimately, the installer is responsible for the installation of the equipment and the interface of all systems. The AML-STC assumes the installer will evaluate the general data contained in the AML-STC and amend it as necessary for the specific installation using acceptable data, such as AC 43.13-1B, or in this case, the aircraft OEMs service bulletin.

In this example, the STC has generic language implying acceptability of the previous antenna installation; however, the aircraft OEM has a service bulletin explicitly stating the antenna must be moved for the equipment to function properly.

While service bulletin compliance is not mandatory for Part 91 operations, the information in the service bulletin cannot be ignored. It is the installer (not necessarily the STC) who must address the specific aircraft requirements of 14 CFR 23.1301.

Transport Canada: Report Released on Implementation of SMS

As part of the Canadian government's annual self-audit process, the auditor general's annual audit report was published in May. One of the objectives of this audit was to determine the extent to which Transport Canada Civil Aviation is effectively managing the transition to a safety oversight approach based on safety management systems.

Transport Canada's responsibilities for air transportation safety include promoting safety, developing regulations, and overseeing compliance with them by airlines, aircraft maintenance companies, manufacturers, airports, air traffic control and other sectors of the industry.

TCCA now is adopting a new approach to oversight based on the implementation of safety management systems. The approach will require aviation companies to have a system in place for managing the safety risks linked to their operations.

TCCA's oversight role will change from one focused solely on conducting inspections and audits to one of assessing the processes companies have in place for ensuring safety — although direct inspections and audits still might be carried out if necessary.

The auditor general's audit examined how Transport Canada has managed the transition to the new approach with the first sectors to make the shift: airline operators and associated aircraft maintenance companies. The audit did not examine the level of air transportation safety in Canada, nor did it look at security — that is, protection against deliberate acts, such as terrorism.

According to the International Civil Aviation Organization, the rapidly expanding aviation industry and the limited resources of oversight authorities make it increasingly difficult to sustain the existing approach to managing safety. By 2009, according to the ICAO, each member country must establish a safety program requiring aviation companies to implement a safety management system acceptable to the country's regulating authority.

For effective oversight, the audit report stated it is critical the transition to the new approach be well managed; for oversight to continue throughout the transition; and for Transport Canada to understand and mitigate the risks inherent in the transition.

Some key findings from the audit report were:

• As the first civil aviation authority to put in place regulations requiring aviation companies to introduce SMS, Transport Canada developed its own approach. For example, it conducted pilot projects with airlines and small operators, then used the results to establish milestones. It also monitored activities and made adjustments to ensure all regions applied procedures consistently. However, in planning for the transition, TCCA did not document risks, such as the impact of the transition process on oversight of air transportation safety, nor identify actions to mitigate these risks. It also did not forecast the overall costs of managing the change.

• Resources have been shifted from traditional oversight activities to SMS activities. However, TCCA has not measured the impact of this on the frequency of traditional oversight activities.

• Transport Canada has not yet identified how many inspectors and engineers it needs nor what competencies they will need — during and after the transition. The impact of SMS is being addressed in the reorganization of the Civil Aviation Program now under way. However, it is not expected to be completed before the end of 2009; therefore, TCCA could find itself unable to recruit the right mix of skills when it needs them. TCCA did not explain how the day-to-day work of inspectors would change as SMS-related activities were integrated with traditional oversight activities. Inspectors were told during their SMS training the transition to SMS involved a shift from specialized and technically trained inspectors to systems auditors and analysts. Last year, however, TCCA found it necessary to clarify it would still need inspectors with specialized skills.

• The department has not developed short- and medium-term performance indicators — those signaling a need for closer attention or action in a particular area — to measure the impact of its civil aviation activities.

To be successful, the report stated it is important for TCCA to address the reported weaknesses for the transition in the first 74 companies and in the remaining sectors of the industry, which comprises more than 2,000 companies.

Transport Canada said it agrees with the recommendations contained in the report as they present additional opportunities to continually improve aviation safety.

TCCA said it is proactively addressing the auditor general's recommendations as part of the transition toward full implementation of SMS in all aviation sectors by 2010, as well as the completion of an internal reorganization to prepare the workforce to better deliver the 2010 program.

The full text of the auditor general's report on the "Oversight of Air Transportation Safety–Transport Canada" can be viewed at www.oag-bvg.gc.ca/internet/English/aud_ch_oag_200805_03_e_30699.html.

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EUROPE
News & Regulatory Updates

EASA: FAQs Updated on Website

Following the new basic regulation EC 216/2008 (successor of EC 1592/2002), EASA has issued a new set of "Frequently Asked Questions" on its website. The amended FAQs now contain information about the new agency responsibilities.

EASA also issued NPA 2008-14, which proposes an amendment to the current text of AMC-20 material. AMC 20-26 contains the acceptable means of compliance for the airworthiness approval and operational criteria for required navigation performance authorization-required operations.

AMC 20-27 contains the acceptable means of compliance for the airworthiness approval and operational criteria for RNP approach operations, including APV/Baro-VNAV operations.

These proposed AMCs are not fully harmonized with the requirements as specified in the ICAO Document 9613, "Performance-Based Navigation Manual," nor with that of the FAA.

A number of the RNP system performance requirements and functionality, as described in the proposed AMC 20-26, paragraphs 6.13, 7.1 and 7.2, are more stringent than those defined in both FAA AC90-101 and ICAO Doc. 9613.

FREQUENTLY ASKED QUESTIONS
Europe

TOPIC:
Harmonization of Technical Rules Throughout Europe

The following information is from a European Aviation Safety Agency FAQ, dated Feb. 15, 2005.

QUESTION:

What does EASA do in the field of harmonization of technical rules in civil aviation? How does the regulation apply to regional companies?

ANSWER:

The fact that the Community now has exclusive competence to regulate certain aspects of aviation safety, and executive powers have been given by the basic regulation to both the Commission and the Agency, leads to a fully uniform regulatory system as the technical rules — in the domains so covered — are exactly the same everywhere in the Community.

As far as regional companies are concerned it must be clarified that the basic regulation covers the certification and continued airworthiness of products designed or operated by Community undertakings; such rules do not differentiate between different kinds of Community operators, as the airworthiness requirements are the same independently of the nature of the operator.

The Agency, as agreed at the time of adoption of the basic regulation, issued Opinion 3/2004 suggesting to the Commission a legislative proposal to regulate the operation of all aircraft in the territory covered by the treaty and the issuing of flight crew licenses.

In its present form, these suggestions, based on the current practice in all member states, do not differentiate between regional carriers and others, as the level of safety to be provided to European citizens is independent of the nature of the operator. ❑