INTERNATIONAL NEWS AND REGULATORY UPDATES

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.*

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NextGen Avionics:
Canada's Facility and Regulatory Approach

The avionics equipment elements of NextGen avionics have been defined in North America through efforts led by the FAA and RTCA. They include leveraging existing aircraft capabilities, such as GPS/WAAS, LPV, RNAV and terminal RNP, VNAV and FIS-B, as well as the increased use of portable or installed EFBs. In addition, new aircraft equipment capabilities that are targeted include data communications through FMS integration, GNSS landing systems (GLS), ADS-B and TIS-B for aircraft without TCAS.

In Canada, air traffic management facilities and services are provided by Nav Canada, a nonprofit organization created in the mid-1990s. Regulatory oversight of Nav Canada is the responsibility of Transport Canada Civil Aviation. TCCA also has responsibility for certification of avionics equipment and installations, as well as regulations governing their operation.

GPS/WAAS and LPV

An agreement between the FAA and Nav Canada saw the installation and operation of WAAS stations at Winnipeg, Goose Bay, Gander and Iqaluit, with integration into the WAAS system in 2007.

With the current stations in the lower 48 and Alaska, WAAS now serves most of the western provinces, southern Ontario and a small area in southwestern Quebec. The addition of the four stations in Canada extended coverage to the eastern provinces to about 55N latitude, while the addition of more stations in Alaska extended coverage into the Yukon and the western part of the Northwest Territories.

WAAS makes possible localizer performance with vertical guidance (LPV) approaches with limits as low as 200 feet where terrain and runway equipment permit. Nav Canada has published a number of LPV approaches, supported by the WAAS signal, at locations such as Inuvik, NT, Prince George, BC, and Moncton, NB.

TCCA approved the use of WAAS in Canadian airspace in 2005, and has since approved specific air operators for LPV approach operations. TCCA also publishes guidance for certification of GPS/WAAS LNAV and VNAV equipment installations.

RNAV and RNP

Nav Canada has a policy of "RNAV everywhere and RNP where required," and it has issued a number of RNAV SID and STAR procedures that allow aircraft to transition between an airport and the en-route airspace, and vice-versa, on pre-determined routes programmed into the aircraft FMS.

To increase the efficient use of Canadian airspace, RNP 10 and RNP 4

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have been implemented as an acceptable navigation standard in some regions. Since 2002, an authorization to operate in Pacific RNP 10 airspace has been available. RNP 4 now can be utilized in the Western Atlantic Route System Plus area, and planning is taking place for its implementation in the southern, central east and northern Pacific areas. TCCA will issue authorizations by operations specifications to both commercial air operators and private operators.

Voice and Data Communications

In anticipation of increasing pressure on VHF communications bandwidth, Nav Canada has started a phased investment in new radio equipment that are fully compatible with all current and planned future analog and digital voice and text message formats, such as VHF VDL-3 modulation and 8.33 kHz channel spacing.

Additionally, the Remote Communications Outlet system is being redesigned to resolve frequency congestion and interference problems. This will result in an improvement in Nav Canada's ability to provide FIS en-route, including safety message broadcasts, communications searches and support of IFR operations.

ADS-B

With service commencing in January 2009, automatic dependent surveillance-broadcast (ADS-B) brought surveillance coverage for the first time to 250,000 square nautical miles of airspace over Hudson Bay in northern Canada. About 35,000 flights a year use this airspace. The majority of these flights link Europe and North America, while many transit to Asia, including those using polar tracks.

Currently, Nav Canada controllers use ADS-B tactically by applying reduced separation between equipped aircraft on an opportunity basis within the Hudson and Minto sectors. This means each aircraft will have the appropriate protected airspace around it applied based on its capability. As more aircraft equip, and in full consultation with customers, Nav Canada will move to segregate airspace vertically, likely requiring ADS-B for flights between FL350 and FL400 inclusive.

Segregation will provide maximum benefits to equipped aircraft and the incentive for others to equip. All flights at and above FL290 eventually will require ADS-B. The transition period will provide a reasonable timeframe for operators to obtain the necessary equipment and regulatory approvals for their aircraft and crew.

ADS-B will cover Hudson Bay airspace completely above FL370, but with a coverage gap approximately 100 nautical miles x 100 nm at FL290. A detailed coverage map is available from Nav Canada. At this time, TIS-B will not be implemented in this airspace.

Planned ADS-B deployments will be in the rest of Nunavut, the Northwest Territories and northern British Columbia, where there is no radar coverage today, and eventually in the rest of Canada as a replacement for, or complement to, conventional radar.

TCCA will issue operational approval to use ADS-B Out in the Hudson Bay airspace to those operators who have aircraft with appropriate ADS-B equipment installations that meet TCCA's requirements; who have established procedures in its company operations manual for the guidance of its personnel and any other procedures related to ADS-B necessary for safe operations; and who have established an acceptable periodicity for the maintenance of ADS-B equipment.

Additionally, Nav Canada is implementing limited use of wide-area multi-

lateration (MLAT), a system of ground stations that receive aircraft transponder information on Mode 3/A, C and S and ADS-B to determine aircraft position. This will enable Nav Canada to increase surveillance capability and IFR delays when weather is below VFR limits in areas not covered by secondary surveillance radar.

Initial MLAT operations are being conducted in Vancouver Harbour, the sea-to-sky corridor between Vancouver and Pemberton, and Fort St. John, BC. Nav Canada also has initiated projects to use MLAT for surface detection as a complement to ASDE commencing with a planned implementation at Montreal's Trudeau Airport by this summer, and also at Toronto's Pearson Airport within a year.

FIS-B

According to Nav Canada, the broadcast of weather graphics directly into the cockpit for general aviation in Canada would be left to third-party providers. For large air carriers, it is anticipated the air carrier's flight dispatch organizations will be equipped with weather-related processing and data transmission capabilities.

NextGen

Both Nav Canada and TCCA are actively addressing the move to NextGen avionics systems across North America, and they are participating in FAA and RTCA forums to ensure a common approach is adopted across the continent.

They are attempting to address the needs of such diverse operations as international air carriers and business jets transitioning into and out of the North Atlantic track system; commercial and private operations in remote areas, including the Arctic; and local and international operations into major urban areas. ❑

UNITED STATES
News & Regulatory Updates

FAA Updates AC 145-9, Inspector Guidance on Contract Maintenance

In late January, the FAA updated its inspector's policy for surveillance of Part 145 repair stations' contract maintenance functions. While the entire document has numerous edits, one of the most definitive is the clarification of what contract maintenance is. According to the order, "Contracting is defined as work performed by FAA certificated or non-certificated entities when the originating repair station assumes responsibility for the work performed by issuing an approval for return-to-service."

This is an important distinction. If the third-party facility is issuing a return-to-service for the product, it is not contract maintenance. As an extension of this clarification, warranty work performed by an OEM would not be considered contract mainte-

nance and would no longer need to be listed in the repair station's manuals.

FAA Order 8900.1, Volume 6, "Surveillance," Chapter 9, "Part 145 Inspections," as well as Change 1 to Advisory Circular 145-9, are very important to any repair station outsourcing maintenance. The change makes significant changes to previous understanding of contract maintenance, which will need to be revised in the repair station's manuals.

The Aircraft Electronics Association is including this topic as part of its regulatory update sessions during the AEA International Convention & Trade Show this month, as well as during its U.S. regional meetings this fall.

FAA Working on Drafts of Various Policies and Guidance

The FAA currently is working on various policies and guidance. The following policies and guidance are in draft forms without final policies or guidance:

• Policy Statement on Approved Model List Supplemental Type Certificate Approval of Avionics Installa-

tions on Rotorcraft: This policy statement provides guidance on approved model list supplemental type certificate approval of avionics installations on type-certificated rotorcraft. This guidance is a result of experience with rotorcraft AMLs and the issues encountered with AML STC applications and projects.

• Airworthiness Approval of Enhanced Vision System, Synthetic Vision System, Combined Vision System, and Enhanced Flight Vision System Equipment: This advisory circular provides guidance for installing enhanced and synthetic vision systems in aircraft. Specifically, it provides one acceptable means for complying with Title 14 of the Code of Federal Regulations, Part 23, or 14 CFR, Part 25, airworthiness regulations when installing a synthetic vision system, enhanced vision system, combined vision system or enhanced flight vision system in an aircraft.

• Establishing the Certification Basis of Changed Aeronautical Products, AC 21.101-1A: This advisory circular provides guidance for the

application of the "Changed Product Rule," 14 CFR, §21.101, for changes made to type-certificated aeronautical products. It aids the applicant and FAA Aircraft Certification Office personnel in classifying the design change and defining the appropriate certification basis.

• Designing and Demonstrating Aircraft Tolerance to Portable Electronic Devices, AC 20-XX: This advisory circular identifies RTCA's Document RTCA/DO-307, "Aircraft Design and Certification for Portable Electronic Device Tolerance," dated Oct. 11, 2007, and RTCA/DO-307, Change 1, dated Dec. 16, 2008, as an acceptable means for designing and demonstrating aircraft tolerance to potential electromagnetic interference from portable electronic devices. This AC was written for aircraft manufacturers and modifiers who want to design and demonstrate their aircraft can tolerate passengers and flight crew using PEDs without adverse electromagnetic interference to aircraft systems.

• Airworthiness Approval of Positioning and Navigation Systems, AC 20-138B: This advisory circular provides guidance material for the airworthiness approval of installed positioning and navigation equipment, which will replace AC 20-129, AC 20-130A, AC 20-138A and AC 25-4. Additionally, this AC incorporates, but does not replace, required navigation performance airworthiness information from ACs 90-101A and AC 90-105.

This AC addresses the following equipment: global navigation satellite system sensors or stand-alone GNSS navigation equipment; area navigation (RNAV) integrating data from multiple navigation sensors; RNAV intended for RNP operations; and barometric vertical navigation (Baro-VNAV) equipment.

The intent of this AC is to provide one-stop-shopping for positioning/navigation equipment and to incorporate lessons learned since AC 20-138A originally was published.

FREQUENTLY ASKED QUESTIONS
United States

Contract Maintenance

The following information is from Federal Aviation Regulations and FAA Order 8900.1.

QUESTION:

What is the regulatory basis for contract maintenance?

ANSWER:

According to 14 CFR, Section 145.201(a)(2), a certified repair station can arrange for another person to perform the maintenance, preventive maintenance or alterations of any article for which the certificated repair station is rated.

Advisory Circular 145-9, Change 1, defines "contracting" as: "Entering into an agreement between the originating certificated repair station and another person or people to perform maintenance functions on an article. The originating repair station will exercise the privileges of its certificate and assume responsibility for the work performed by the contracted person(s)."

This definition basically requires two steps to satisfy the definition:

• Entering into an agreement between the contractor repair station and a contracted person (including a business) to perform maintenance functions on an article.

• The contractor repair station, not the contracted person, will exercise the privileges of its certificate and assume responsibility for the work performed.

When a repair station sends a component to a certificated person — such as the equipment manufacturer's repair station — for maintenance or repair, and the certificated person returns the component to service, this is no longer defined as contract maintenance.

AC 145-9, Change 1, continues in its description of what is and what is not contract maintenance with the following note:

"Purchase of maintained parts from another repair station (including exchanges), brokerage and using another certificated repair station to perform work that is outside the original repair station's ratings are not maintenance functions requiring FAA approval. These are instances where the purchasing repair station is not exercising the privileges of its certificate. When a repair station requests work or sells a previously maintained article (including type-certificate products) it is acting solely as a distributor. Although the purchasing repair station may induct the part through its receiving inspection process, it is merely relying on the work previously performed at another certificated entity and is not exercising the privileges under 145.201(a)(2).

EUROPE
News & Regulatory Updates

EASA Issues Preliminary Safety Data for 2009

The European Aviation Safety Agency recently issued its preliminary safety data for 2009. According to the data, the lowest number of fatal accidents was recorded for the 31 EASA member states.

The accident of an Airbus A330 over the Atlantic Ocean overshadowed its good safety record. This was the only fatal accident for airplanes registered in an EASA member state in commercial air transport. Despite this, the number of fatalities in 2009 — 228 fatalities —is significantly above the decade average.

According to EASA, the high number of non-fatal accidents in 2009 — 24 accidents — indicates further progress in safety is necessary. In comparison, the decade 1999-2008, on average each year, recorded 27 non-fatal and five fatal accidents with 92 fatalities.

For other world regions, the safety record in 2009 was marred by an accident of an Airbus A310 in Comoros and a Tu-154 in Iran. In total, there were 41 fatal accidents involving aircraft reg-istered outside EASA member states. This is below the decade average of 51 fatal accidents (1999-2008), but not the lowest in the decade. In these accidents, there were 573 fatalities.

Preliminary data shows, in 2009, the number of fatal accidents worldwide in commercial air transport with helicopters was the second lowest for the decade: only in the year 2000 was the number of fatal accidents lower. When looking at the three-year moving average, it appears, for the past five years, the average is more or less constant. Two fatal helicopter accidents occurred in Europe in 2009. Two people died in Poland when an emergency medical helicopter crashed. In April, 16 people died when a helicopter crashed during an offshore flight from an oil platform to Aberdeen, Scotland.

Additional information regarding civil aviation safety will be included in the "Annual Safety Review 2009," which EASA will publish later this year.

EASA Presents Consolidated Version of Rule, AMC

A novelty of sorts recently was presented on the EASA website. For the first time since it was established in 2003, EASA presented a consolidated version (rule and AMC) in a single document. The first regulation it chose to provide in this format was the Part M regulation. The next regulation provided on the same basis will be Part 145.

According to EASA, it will come forward with more regulations in a consolidated version in the near future. This follows repeated requests from the industry to provide such a document for easier reference.

EASA also has released samples of classifications of changes to general aviation aircraft on its website. The samples are provided under the headline "General Aviation - FAQs." The table is provided with the following explanation: "The following table provides typical examples where an applicant or DOA holder gets help in the decision process to classify a design change as 'minor' or 'major.'"

It is noted on the website that these examples can be amended or changed without "expressive notice." The legal status of these examples is not clear; therefore, they should be evaluated by each applicant separately. AEA members should check the current interpretation of EASA for such changes before concluding on the classification.

EASA's "General Aviation - FAQs" can be found at www.easa.europa.eu/ws_prod/c/c_general_aviation_faq.php.

SOUTH PACIFIC
News & Regulatory Updates

New Agreement Strengthens Air Safety in Australia

Australia's aviation safety system has been strengthened with the signing of a new agreement be-tween the Civil Aviation Safety Authority and the Australian Transport Safety Bureau. The agreement focuses on making the most effective use of the findings of accident investigations and clarifying the different but complementary roles of CASA and the ATSB in improving air safety.

The agreement also provides a framework of cooperation between CASA and the ATSB on aviation safety education, research and data analysis.

John McCormick, director of aviation safety for CASA, and Martin Dolan, chief commissioner of ATSB, signed the memorandum of understanding. McCormick said the memorandum of understanding

builds on the existing good relationship between the two organizations.

"This memorandum of understanding ensures the Australian public gets the best possible results from the important work of both CASA and the ATSB," McCormick said. "It will improve communication between our organizations and make sure that all efforts are aimed at achieving the best possible safety outcomes.

"From CASA's point of view, the agreement demonstrates our commitment to learning the lessons from accident investigations and taking appropriate safety actions."

The memorandum of understanding also covers issues such as the roles of CASA and the ATSB in accident investigations, assistance during investigations and safety education.

CASA is Australia's aviation safety regulator, with responsibility for setting safety standards, carrying out safety oversight of the aviation industry, issuing licenses and registrations, and providing safety education, advice and training programs designed to encourage a greater acceptance by the aviation industry of its obligation to maintain high standards of safety.

ATSB's function is to improve safety through investigating accidents, collecting safety data, conducting analysis, fostering safety awareness and knowledge.

FREQUENTLY ASKED QUESTIONS

International: Canada

Suspected Unapproved Parts

The following information is taken from TCCA's Aviation Safety Letter.

QUESTION:

How do I identify and report a suspected unapproved part, and what is the follow-up action?

ANSWER:

Parts that meet the requirements of the Canadian Aviation Regulations, Part V, Subpart 71, (CAR 571) are approved parts and acceptable/eligible for installation. When it is not clear whether a part meets CAR 571 requirements, it becomes a suspected unapproved part (SUP). From this point on, it is a shared task between the industry and TCCA to remove the suspicion by identifying it as either approved or unapproved.

TCCA definitions an unapproved part as follows:

"'Unapproved part' means any part installed or intended for installation in a type-certified aeronautical product that was not manufactured or certified in accordance with the applicable regulations of the state of production or that is improperly marked or that is documented in such a manner as to mislead with regard to the origin, identity or condition of the part."

Based on this SUP definition, parts maintained or repaired and returned-to-service by CAR-authorized persons or facilities but subjected to sub-standard maintenance (such as incorrect or missing processes) are not considered SUPs. Although considered un-airworthy parts, they should not be reported to TCCA as SUPs. However, they should be treated as un-airworthy and appropriate action should be taken to correct the circumstances leading to the sub-standard maintenance.

The SUP program traces a SUP to its supply-line point of origin, at which its certification or approval was issued, and corrects the circumstances that created the SUP or allowed the part to enter the system.

Reporting the SUP is the first step in the process. In Canada, the mechanism for reporting a SUP is through the service difficulty report system. TCCA requires a SUP be reported for each specific occurrence. The aviation industry is responsible for reporting an SUP using TCCA Form 24-0038 (service difficulty report) or at www.tc.gc.ca/wsdrs.

When a SUP report is made, care should be taken to identify the person(s) or organization(s) from which the part was obtained, which should lead to where the part was certified. There could be several sources in a supply chain; however, there should be only one at the origin, which becomes the focus of follow-up activities. The SUP shall be removed from service, isolated and quarantined for further follow-up and corrective actions as necessary.

Once TCCA has received the report, the local Transport Canada Centre is responsible for following up on SUPs submitted under its jurisdiction. This follow-up is coordinated through TCCA headquarters, particularly when it involves multiple regions or international organizations. Normally, the follow-up is a routine function within Canada; however, many SUP follow-ups require coordination with stakeholders outside Canada.

When the SUP source and origin are outside Canada, TCCA headquarters forwards a detailed report and supporting investigative materials to the appropriate foreign civil aviation authority to investigate. TCCA will ensure the follow-up action is completed and closures are made.

Because the Canadian aviation industry buys a large portion of its aviation-related equipment and parts from suppliers in the United States, which fall under the authority of the Federal Aviation Administration, TCCA maintains a close relationship with FAA SUP counterparts. When the source of a SUP is American, TCCA provides the supporting materials, along with FAA Form 8120-11 (suspected unapproved parts notification), to the FAA SUP Program Office for it to investigate.

The Canadian aviation community also can use this form for voluntary reporting directly to the FAA. It can be found on the FAA SUP Program Office's website at www.tc.gc.ca/wsdrs.

TCCA does not list unapproved parts discovered through the program. Instead, once a SUP has been confirmed as an unapproved part, action is taken for the specific case, which can vary from taking corrective action with the responsible organization or notifying Canadian operators and maintainers to issuing a service difficulty alert or an airworthiness directive, with the level of notification depending on the nature of the SUP.

Some foreign civil aviation authorities utilize an unapproved parts notifications system, as does the FAA. These systems can be used to inform TCCA about unapproved parts. Normally, in these cases, the information is received and forwarded to Transport Canada Centres via the applicable regional office to further inform Canadian organizations.

The FAA publishes its unapproved parts notifications on its website. As a courtesy, some of these unapproved parts notifications are published in the TCCA publication Feedback.

However, not all of the FAA unapproved parts notifications are published in Feedback; therefore, it is advisable to review the FAA website at www.faa.gov/aircraft/safety/programs/sups/upn.

Communications and partnering are key to eliminating SUPs from the Canadian aviation system. While the aviation community continues to report SUPs and provide information for follow-up, TCCA will continue to chase down leads, identify the source of unapproved parts and remove them from the system. ❑