FAA Announces Plan for Reduction in VOR and ILS in Favor of WAAS

A recent Federal Register Notice (FRN) published by the FAA describes a proposed federal rule for a long-awaited transition of the conventional navigation infrastructure of the National Airspace System (NAS) to Performance-Based Navigation (PBN) for NextGen. Benefits of this transition are increased capacity and efficiency, reduction in aircraft noise and emissions and enhancement of safety; all enabled or dependent upon the implementation of RNAV and RNP routes, arrivals, departures, instrument approaches and other procedures. While the FAA has alluded to a transition to PBN in the past, this FRN is the first time a formal transition plan has been defined.

The FAA’s proposed plan would transition from defining airways, routes and procedures using existing VOR and other legacy navigation aids toward a NAS based on RNAV and RNP procedures. The plan goes further to define the gradual removal of VOR facilities in the U.S. Currently, over eighty percent of the 967 VORs in the NAS are past their economic service life, costing the FAA more than $220M per year to operate. The phase out of VOR is planned to be completed by January, 1 2020.

By large, capabilities will be enabled through the Global Position System (GPS) and the Wide Area Augmentation System (WAAS). The FAA is also considering programmatic changes under the Airport Improvement Program (AIP) that would favor WAAS approaches at airports, rather than Instrument Landing Systems (ILS). Existing ILSs would provide an alternative approach and landing capability in support of recovery and dispatch of aircraft during GPS outages.

For more information, visit: [www.gama.aero/node/10909](http://www.gama.aero/node/10909).

Product News and Highlights

**Update: AHS-525 Attitude Heading Reference System**

Universal is pleased to share with its customers that preparations for delivery of the AHS-525 Attitude Heading Reference System (AHRS) is underway. Originally expected to be available at the end of 2010, a delay from a component supplier caused the initial delivery date to be rescheduled. The project is on track and milestones are now being met with TSO approval scheduled to occur in October 2012.

The AHS-525 was designed as a low-cost solution for next generation flight decks and to seamlessly replace difficult-to-maintain gyros. Designed with Microelectromechanical Systems (MEMS)-based technology, the AHS-525 provides the most accurate aircraft pitch, roll, and heading measurements available today. Onboard the aircraft, it provides increased accuracy and reliability.

Integrating with flight deck displays, flight control systems, flight management systems, weather radar, enhanced ground proximity warning system, flight data recorder and other avionics equipment, the AHS-525 helps to improve dispatch capability for the aircraft.

When interfaced with Universal’s Electronic Flight Information System (EFIS), data display and control is managed directly through the EFI-890R/-890H Flat Panel Displays, without the need for additional heading control panels that clutter the flight deck.


**Keep an Eye on UniNet**

Universal Avionics will introduce a redesigned UniNet in the coming weeks. UniNet is a free, secure customer portal with access to Nav Database, technical publications, and other essential information.

The redesigned layout will improve navigation, with shortcuts from the home page to commonly visited pages like Navigation Database downloads. In addition, customers will be able to pay invoices online.
Canada Anticipates TAWS Mandate

By March 2005, all turbine-powered U.S. registered aircraft with six or more passenger seats, excluding pilot and copilot, were required to be equipped with a certified terrain avoidance system. Since this mandate was put into action, the number of Controlled Flight Into Terrain (CFIT) accidents has significantly dropped.

On August 2, 2011 Transport Canada published Advisory Circular AC 600-003 for Terrain Awareness Warning System (TAWS) regulations in Canada. TAWS avionics is expected to be mandated in Canadian airspace this year. Operators will have two years from the date of publication of the mandate to equip with TAWS.

There are two Classes of TAWS: TAWS Class A and TAWS Class B. The Class A system provides the highest level of protection against CFIT accidents. In Canada it will be required in Commuter CAR 704 aircraft configured with ten or more passenger seats, excluding pilot and copilot, and in all aircraft operating under subpart 705 for airline operations.

The Class B system has less capability and will be required for private turbine-powered aircraft configured with six or more seats, excluding pilot and copilot. It will also be mandatory on all commercial subpart 703 air taxi aircraft configured with six or more passenger seats, as well as Commuter subpart 704 aircraft configured with six to nine passenger seats, excluding pilot and copilot.

Available for over 35 years, classic Ground Proximity Warning Systems (GPWS) have provided a reliable last line of defense from CFIT accidents. Don Bateman, a Canadian-born engineer, developed and is credited with the invention of GPWS. Since 1974, when the U.S. FAA made it a requirement for large aircraft to carry GPWS, there has not been a single passenger fatality in a CFIT accident by a large jet in U.S. airspace. Universal Avionics’ TAWS with its’ unique Terrain Awareness modes in addition to standard GPWS modes has been available since 2000. TAWS provides crews with a warning of terrain ahead of the aircraft as well as classic GPWS warnings.

Designed to complement the well-known WAAS/SBAS Flight Management Systems (FMS), Universal Avionics’ TAWS integrates with the FMS to provide an additional unique predictive alerting feature, based on knowing where the aircraft will be later in the flight plan.

Aircraft inputs such as position, attitude, air speed and glideslope, along with internal terrain and airport databases allows TAWS to predict a potential conflict between the aircraft’s future flight path and terrain. The resulting unprecedented look-ahead capability can provide warnings and alerts well in advance of potential hazards, allowing time for the pilot to make the necessary maneuvers or data corrections for terrain avoidance.

TAWS provides an exceptionally crisp and clear graphical depiction of actual terrain, in three view formats, on the FMS CDUs or flight deck displays. TAWS also provides man-made obstacles alerting (towers, wind turbines etc.).

For more information on Universal’s TAWS, visit: www.uasc.com/products/taws.aspx.
Notes from Product Support

Q & A: 525 CJ1 and CJ2: Coupled Approach Capability with Pro Line 21®

The Cessna 525 CitationJet (CJ) was the first model of the 525 series of aircraft built by Cessna, starting with serial number 0001 through 0359. A Part 23 single pilot jet, the 525 CJ included a Honeywell SPZ-5000 EFIS and Flight Guidance system.

What is the 525 CJ1?

The 525 CJ1 is a block point change/upgrade from the original 525 CJ, starting with serial number 0360 through 0558. The CJ1 consists of a Collins Pro Line 21 EFIS system. Most of these also had either a Universal UNS-1K FMS installed at the factory, or upgraded to the next generation “Super FMS” UNS-1L, later on.

What is the 525 CJ2?

The 525 CJ2 is a block point change/upgrade that mirrors a “stretched” CJ1, starting with serial number 0001 through 0144. All of the avionics are virtually identical, including the Universal FMS.

Were there any original Pro Line 21 limitations?

The FMS displays VNAV, both enroute and in approach, but does not couple to the autopilot. This is due to a limitation in the Pro Line 21 system.

The latest generation of FMSs, the WAAS/SBAS-FMS, was certified in 2008 and installed in many CJ1 and CJ2 aircraft since it was introduced. However, the interface to the Pro Line 21 system is still limited; while the FMS displays LPV, it won’t couple with the autopilot. Known to be a highly desired feature among CJ operators, Universal Avionics actively sought a solution to the interface issue that prevents coupled LPV approaches.

What is the solution?

In January of 2011, Cessna, Rockwell Collins and Universal Avionics came together in an effort to provide a solution for CJ owners. The agreement paved the way for Rockwell Collins to make the necessary modifications to the Pro Line 21 EFIS and Flight Guidance System interface to allow coupled approach capability with Universal Avionics’ FMS. It is expected to become available during the second quarter of 2012.

Universal Avionics Highly Ranked in 2012 Pro Pilot Avionics Product Support Survey

Universal Avionics has once again received praise from its operators, as demonstrated by a strong ranking in Professional Pilot Magazine’s 2012 Avionics Product Support Survey. Results of this survey show that for the third straight year, Universal Avionics ranks first in Tech Reps and Speed in AOG Services. Compared to the 2011 Avionics Product Support Survey, Universal saw increased scores in Cost of Parts and Support from Manufacturer. These improvements and consistency in overall ranking proves Universal’s commitment to providing stellar product and customer support services.

Each year, Pro Pilot Magazine mails out a questionnaire asking operators to rate the product support provided by avionics manufacturers. Categories included in this questionnaire consist of product reliability, speed in AOG service, cost of parts, manuals or CDs, tech reps, and support from the manufacturer. Of the 8,930 survey forms that Pro Pilot sent out in October 2011, 607 were returned that met Pro Pilot’s established criteria for ranking in the 2012 Product Support Survey.

Thank you to our loyal customers for your support; we look forward to another great year of serving you.

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Software and Hardware Updates

EFI-890R

A minor part number change incorporates Night Vision Goggle (NVG) capability. TSO submittal/approval is scheduled to occur in March.

UL-80X SCN 30.1

Flight testing of UniLink UL-80X SCN 30.1 is complete. The TSO approval package was submitted to the FAA and delivery will begin in March.

FMS

SCN 1000.6/1100.6 TSO submittal/approval occurred the week of March 12, 2012. This minor software change allows the testing of LOS discretes via the CDU and updates the vertical path turn sequence to comply with AC 20-138B.

Service Bulletins are published for all software releases and hardware modifications. Visit www.uasc.com to view the Service Bulletin for the software and hardware updates listed here, in addition to associated Service Letters and archived Bulletins.
LPV Saves: Your Story

West Wind Aviation: Reducing Delays and Missed Approaches by Over 20%

“The first day WAAS approaches became available,” says Lloyd Epp, Director, Flight Operations, “our chief pilot was going out to Cigar Lake Mine to do a line-indoctrination. There was excitement around flying those approaches for the first time.”

On that day back in 2007, ceilings at Cigar Lake hovered between 250 and 300 feet. West Wind Aviation’s ATR 42s, armed with dual UNS-1Lw FMSs, taxied out and completed the scheduled flight. “Had it not been for WAAS, he would have had to wait on the ground.”

West Wind Aviation is a large Saskatchewan commercial aviation group with a fleet of 21 aircraft including three ATR 42 aircraft. It operates charter flights for staff working at mine sites in Northern Canada.

Up until WAAS, Cigar Lake had a circling NDB as its most desirable approach but even that had high minimums and often times a low ceiling.

Unlike a scheduled airline which may cancel flights due to weather, West Wind needs to make every flight happen or workers are left in the camps away from their families, shortening their time at home, and extending overtime hours which can add substantially to labor costs.

“Today, we reduce flight delays and missed approaches by at least 20%,” says Chief Pilot Guylain Boutin.

~Contributed by Guylain Boutin, Chief Pilot of West Wind Aviation

Send your story to universalflyer@uasc.com to be featured in this special section sharing LPV Saves.