Transport Canada Publishes New Regulations for TAWS

On July 4, 2012, Transport Canada’s Terrain Awareness Warning System (TAWS) rule was published in the *Canada Gazette II* and became regulation. Aircraft manufactured before July 4, 2012 have two years after the date of the Final Rule to have a TSO-C151b-compliant TAWS system installed and Transport Canada-certified.

The Transport Canada mandate differs from the FAA’s TAWS regulatory action in the requirement for Enhanced Altitude Accuracy (EAA). All TAWS systems must be compliant with the EAA requirement within five years of the date of Final Rule. According to the *Canada Gazette II*, “The EAA function uses various sources of altitude information including the Global Positioning System (GPS), radio altimeter readings and static air temperature readings to compute a very accurate altitude input, despite various atmospheric conditions of temperature and pressure that can lead to error.”

In addition, altitude references necessary for accurate altitude measurements are automatically set. Universal Avionics’ TAWS meets the EAA requirement defined by the regulations, per Part V - Airworthiness Manual Chapter 551, 551.102 (b)(3).

Another significant difference from the FAA and ICAO requirements is Transport Canada’s inclusion of all passenger-carrying aircraft in commercial operations. This affects most commercial air taxi, commuter and/or airline operations under CAR 703, 704 and 705. Additionally, it applies to private operators of turbine-powered aircraft with six or more passenger seats. The FAA and ICAO requirements are limited to turbine powered aircraft only.

For more information about the new regulations and Universal Avionics’ TAWS, visit: www.uasc.com/taws.

Product News and Highlights

*Matching Advanced Avionics to Customer Needs*

Test Aircraft Takes First Flight

On August 23rd, Universal conducted its first flight of the company’s new test bed aircraft, a Cessna Citation VII complete with Universal livery, after being grounded for 18 months while the flight deck was upgraded. Currently, the aircraft is being used for product development purposes, but is intended to become a demonstration aircraft in the future.

The first flight of the Cessna Citation VII starts a new era for Universal, as the company’s primary test bed aircraft for many years had been a sturdy and reliable Beechcraft King Air 350. However, the time had come to take Universal’s flight test development and demonstration capability directly to the corporate jet market, a large market the company serves.

*Those involved in flight test have confidence that this will be the reliable test aircraft that it’s expected to be, and to be able to provide Universal’s customers with a fantastic demonstration experience that will showcase Universal’s world class products,* said Paul Damschen, Universal Avionics’ Manager of Airworthiness and Product Management.

Universal’s Cessna Citation VII during first flight

Updated Terrain Geodatabase

Universal Avionics’ terrain geodatabase provides a worldwide terrain database for use in TAWS and Vision-1® systems. To capture the latest advances in mapping technology and bring it to TAWS and Vision-1 operators, Universal regularly updates the geodatabase used in these products. The latest update to the database includes:

- **New Data Sources:** An upgrade to the source brings even more accuracy to the terrain database. Nearly all the source data has been replaced with higher quality source data.
- **High-Resolution Data Coverage:** The 6 and 15 arc second data coverage was updated to include:
  - 6 Arc second data for a radius of at least two nautical miles for all U.S. airports and any airports identified as being in a mountainous area or in an area of rugged terrain.
  - 15 Arc second data for a radius of at least seven nautical miles for all airports worldwide.
- **Inconsistencies:** Inconsistencies between the elevation and runway data, elevation and water data, and water and runway data have been identified and resolved.
Functions and Benefits of FMS Databases

Universal Avionics’ Flight Management System (FMS) can contain four databases: Navigation, Pilot Defined, Company Routes and Advanced Performance.

The following information describes the function and benefit of these four databases.

Navigation Database
A self-contained worldwide navigation database (FMS SCN 801 and later) provides the FMS with information about nearly 200,000 waypoints, nav aids and airports, and over 50,000 SIDs, STARs and approaches. A special helicopter database is available for helicopter operators.

Navigation database update subscriptions are available in worldwide and regional coverage areas. The navigation database updates for the subscription area are distributed on a 28-day cycle and are available to be shipped directly to the customer’s location or downloaded from UniNet 14 days prior to the effective date.

Navigation database subscription service for all FMS SCN operators is available directly from Universal Avionics, or from Navtech for operators of FMS SCN 802/902 and later.

Pilot Defined Database
The Pilot Defined Database consists of all flight planning data created by the pilot. It has the capacity to store up to 200 pilot created flight plan routes comprised of up to 98 route elements each, and up to 200 pilot defined waypoints, 100 arrivals/100 departures, 100 approaches, 100 runways, 100 airports, 100 alignment points and 100 tactical waypoints.

Up to 25 radar waypoints that are cleared at power-up can also be stored.

The Pilot Defined Database is created either with the Universal Flight Plan (UFP) PC software program and then loaded into the FMS or created on the aircraft directly in the FMS. Loading a Pilot Defined Database created with UFP will erase all existing pilot data stored in the FMS.

The pilot defined data, including routes, can be edited and saved by any operator on the FMS.

The individual operator and flight departments benefit from using the Pilot Defined Database function, as it saves substantial time and offers convenience by eliminating manual entry of new flight plans or waypoints on every trip.

Company Routes Database
The Company Routes Database has the capacity to store a maximum of 2,000 routes, 200 company waypoints and 100 company airports. Each route defined in the Company Routes Database can consist of up to 98 legs (route elements). Company Routes Database functionality was added in FMS SCN 601 (only supporting routes) and later added waypoints and airports in FMS SCN 604.

Route elements, reference waypoints, airways and terminal area procedures (SIDs, STARs and approaches) are accessed from the Navigation Database by use of reference pointers.

Company routes can be given names of up to eight characters in length. A Company Route can be copied into the active flight plan, where it can be edited, but the pilot cannot alter the stored route database.

This eliminates possible route errors from flight plan edits by one crew, being retrieved by a later crew.

The Company Routes Database can be created with the UFP PC software program. It is loaded through the Data Transfer Unit (DTU) by using the same procedures as loading the navigation data that was used for its creation.

Flight departments and airlines benefit the most from the Company Routes Database as it eliminates the time required to enter the flight plan or waypoints for commonly flown routes.

Advanced Performance Database
Developed by Universal Avionics and available for certain aircraft models from select OEMs, the Advanced Performance Database is used by the FMS to provide the flight crew with takeoff and landing data, including V-speeds and N1 settings. The operator inputs aircraft state information (flap settings, runway condition, etc.) along with verifying items such as altitude and temperature to enable the FMS to perform the performance calculations.

The benefit for operators of the Advanced Performance Database is that they are able to obtain climb/cruise and Take-Off and Landing Data (TOLD) for the aircraft. This reduces the amount of time to calculate and look up the speeds and runway requirements for a vast array of possibilities for take-off and landing.

Feedback
Your feedback is appreciated. Email your comments to: universalflyer@uasc.com.

Update
Receive The Universal Flyer by mail or email. Email universalflyer@uasc.com or call the Marketing department at (800) 321-5253 or (520) 295-2300 to update your profile.

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About
The Universal Flyer is a quarterly publication produced by Universal Avionics Systems Corporation. This newsletter provides information about Universal Avionics as a company, its products and services as well as regulatory and educational information relevant to the owners and operators of business, regional and air transport aircraft.
With the cost of obtaining zip disks and floppy disks increasing, Universal’s $700 media fee implemented last year will increase to $1,000 in 2013 for certain subscriptions. You may be surprised to learn that customers can avoid the media fee and save on navigation database costs by downloading updates directly from UniNet, Universal’s secure customer portal. Log onto UniNet today at www.uasc.com/uninet.

For more information on downloading navigation data from UniNet, contact:
Nav Data Services and PC Engineering
(520) 295-2300 • (866) 525-7905
navdata@uasc.com.

Save Money with UniNet
Avoid the Navigation Data Media Fee

Universal Avionics again ranked as one of the top three cockpit avionics manufacturers in the AIN 2012 Product Support Survey, published in the September 2012 issue of the magazine. Over the past year, the company has made a handful of internal changes aimed at improving customer support. Two such changes have included:
• A redesigned UniNet website to increase integration to support customer needs for responsive and comprehensive information about Universal Avionics.
• The promotion of Robert Nierenhausen to the position of Warranty Manager, a newly created position to help customers and dealers with warranty inquiries.

Thank you for your support; Universal Avionics looks forward to another great year of serving you.

“The support from Universal before and after the sale has truly been amazing. Each person with whom I’ve had contact along the way has been the same – knowledgeable, professional, enthusiastic… all with customer satisfaction and service in mind.”
- Mark Steele, Chief Pilot, Murphy Co.

"From the Flight Deck"

Meet Universal Avionics’ Manager of Airworthiness and Product Management

Many of Universal’s products, both features and capabilities, are conceived in the cockpits and cabins of the company’s corporate aircraft; Beechcraft King Air F90, Bombardier Challenger CL-601 and Cessna Citation VII. These aircraft are utilized for extensive flight evaluation of the company’s products, beginning in the development stages and continuing through final design and certification. All of Universal’s products are built to exacting specifications, each undergoing numerous flight test phases prior to receiving aircraft certification.

Universal Avionics’ Manager of Airworthiness and Product Management, Paul Damschen, is an active flight test pilot for the company, utilizing these aircraft on a daily basis. Paul joined the company in 2010 with over 25 years of experience in the aviation and aerospace industry.

While attending Montana State University, Paul’s faculty advisor in engineering happened to be the faculty advisor for the University’s flying club, the Flying Bobcats. That’s where Paul learned to fly, and has been at it ever since his freshman days at MSU. Paul’s passion for flying has only grown since then, he now holds an Airline Transport Pilot certificate with Boeing 767/757/737 ratings, a Citation CE650 rating and a King Air B300 rating. In addition, he has a Certified Flight Instructor (CFI) certificate and a Commercial Seaplane rating.

As Manager of Airworthiness and Product Management with Universal, Paul manages the flight test operations and product development aspects of the company’s product lines. In addition, Paul manages the certification aspects which includes not only the FAA, but also foreign government equivalents in Europe, Brazil and elsewhere.

Prior to joining Universal Avionics, Paul held positions as Certification Program Manager, Flight Test Pilot, Instructor Pilot and Systems and Software Engineer.

Look for pilot tips, tricks and advice from Paul in future issues of The Universal Flyer!
NBAA Customer Appreciation Event

Universal Avionics invites its customers and dealers to “Discover Universal” at a special Customer Appreciation Event at the 2012 NBAA 65th Annual Meeting & Convention.

When: Wednesday, October 31, 2012 at 2:30pm
Where: Universal Avionics Booth 2500

Learn more about Universal’s latest product releases and see the company’s new AHRS up close and personal with an interactive model aircraft simulator. A new holographic display will also be in the booth, allowing you to watch Universal’s Bombardier Challenger CL-601 come to life.

Don’t forget to “Discover Universal” and learn more about the company at the information kiosk before you leave!

For more information, visit www.uasc.com/nbaa2012