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THE UNIVERSAL® FLYER

Volume 1, Issue 2

Does The FAA's New CVR/FDR Ruling Affect You?

The FAA's Notice of Proposed Rule Making (NPRM) for Cockpit Voice Recorders (CVR) and Digital Flight Data Recorders (FDR) became Final Rule on March 10, 2008. The ruling affects all aircraft with 10 or more seats. Forward-fit aircraft must comply to these mandates by March 7, 2010, while retrofit aircraft must comply by March 7, 2012. We've provided a brief summary of the mandates below.

- All forward-fit airplanes must have CVRs with recording capability of at least 2-hours. Retrofit aircraft where an FDR is required must also have a 2-hour CVR.
- All FDRs must record for at least 25 hours.
- All CVR forward-fit installations must have a Recorder Independent Power Supply (RIPS).
- Separate CVR and FDR recorders (where both are mandatory) are required for all installations except rotor aircraft.
- Data-link recording of certain message sets is required for all forward-fit installations in which data-link communication equipment is installed.

Look for more information from Universal Avionics about CVR/FDRs later this year.

LP/LPV Monitor Update

FAA approved the LP/LPV Monitor TSO May 9th. Orders are now being shipped.

New Product News

Universal Solutions for Small Spaces...

2-in-1 Functionality

Is space an issue? Universal's two new control panels offer 2-in-1 functionality in horizontal and vertical formats. Designed for single or multi-display EFI-890R installations, the controllers multiplex NAV / BRG source and Baro / Minimums set functions into single knobs. They also provide ADC and ATT/HDG Reversion buttons. By combining features of the Navigation Source and PFD Display Control Panels into one, these controllers fit perfectly in smaller instrument panels.

The new controllers are available in either horizontal or vertical format. Measuring 7.84" high by 1.125" wide, the vertical controller has the same height as the EFI-890R.

Perfect for small spaces. Economical for everyone.

New Flat Panel Glass Option

Universal introduced a new flat panel display late last year that incorporates EFI-890R hardware in a single stand-alone MFD configuration. The MFD-890R is TSO'd and recently STC'd in the Lear 60, Sikorsky S-76 and Boeing 737.

The MFD-890R meets the needs of operators who want to take advantage of the latest technology in glass displays but have limited time and budget for an entire cockpit retrofit. It is fully compatible with Universal's EFI-890R glass displays and can be used as part of a complete cockpit retrofit at a later time.

The MFD-890R supports FMS Maps and Progress data, NAV Bearing pointers, Radar display, ASU display (Electronic Charts, Checklists, E-docs and Broadcast Weather), Vision-1® SVS, and External Video (EVS Camera, Video Camera, Electro-Optical Special Mission sensors - FLIR and Day TV).

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Space-Based Augmentation Systems

Fundamentally, SBAS provides corrected GPS position that significantly improves the accuracy & reliability of GPS position estimates.

A Satellite-Based Augmentation System (SBAS) consists of a network of precisely surveyed ground reference stations strategically positioned to monitor, collect and process satellite signals. The ground reference stations send satellite signal data to ground master stations, which then take measurements of signal delay and other errors (such as ionospheric and/or solar activity) that may impact the signal. Using the signal error measurements, master stations develop corrections to the information obtained from the ground reference stations and send a corrected, or augmented, message to Geostationary Earth Orbit (GEO) communication satellites. These GEOs broadcast the message to the internal WAAS/SBAS receiver in the Universal Avionics WAAS-FMS. Together, ground-based reference stations, satellite-based signals and aircraft sensor systems comprise the SBAS architecture for aircraft navigation.

Currently, the FAA's Wide Area Augmentation System (WAAS) and Japan's Multi-functional Satellite Augmentation System (MSAS) are the only SBASs commissioned for aviation use. However, other SBAS projects underway include the European Geostationary Navigation Overlay Service (EGNOS) and Indian GPS Aided Geo Augmented Navigation (GAGAN). As part of a strong international effort to establish a seamless worldwide satellite-based navigation system, each regional SBAS broadcasts standard ICAO signals compatible with all SBAS receivers.

The primary objective in establishing SBAS is to increase safety for aviation. Current GPS systems are neither accurate nor reliable enough to be accepted as a sole means of navigation. By improving the accuracy, availability and integrity of GPS, SBAS increases the navigation capability for all classes of aircraft in all phases of flight.

According to the FAA, the WAAS broadcast message improves GPS system accuracy from 100 meters to 7 meters. Some measurements have shown to improve GPS signal accuracy to approximately 1.5 - 2 meters in both the horizontal and vertical dimensions. The WAAS also detects smaller errors faster than the basic GPS signal and notifies users within 6.2 seconds. The amount of time the WAAS signal is expected to be received and usable - its availability - is 99.999%. What does this mean? Ultimately, SBAS provides the accuracy and safety to allow GPS to be used as a primary means of navigation from takeoff through approach.

By The Numbers...

27 - Number of years Universal has been incorporated

2000 - Year in which Universal delivered its 10,000th FMS

8,295 - Number of FMSs sold since

Software and Hardware Updates

LP/LPV Monitor

TSO approval for LP/LPV Monitor, P/N 3116-52-1110, was received 5/9/08. The LP/LPV Monitor is used in single FMS installations for LP and LPV approach capabilities.

EFI-890R

Controllers P/N 5030, 5031, 5032 and 5033 approved 5/30/08.

SCN 1017.1.1 for P/N 8904-35533-0X approved 4/3/08. This minor software change primarily affects Manual Low Speed Awareness (MLSA) depiction.

SCN 1017.1.2 expected end of 2nd quarter. This minor software change adds support for Learjet C21A aircraft.

Vision-1

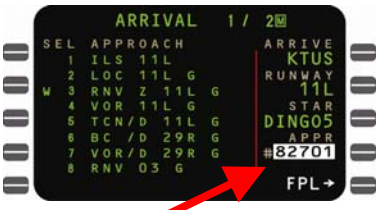
SCN 11.2 approved 5/29/08. This minor software change adds support for low-speed TAWS bus and label 260 to the GPS input bus; and modified how the software handles invalid track angle on the ground.

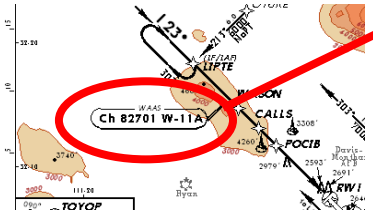
Notes From Training

How do I fly a WAAS approach?

From an operational perspective, WAAS approaches are very similar to non-WAAS approaches. However, there are a few differences operators will notice when setting up the flight plan and flying an RNAV (GPS) approach. We explain them here.

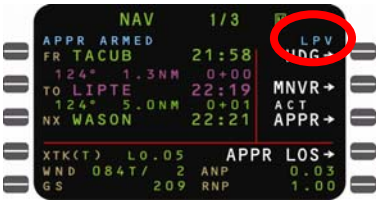
First, WAAS approaches are identified with a "W" to the left of the approach on the ARRIVAL page.





The approach can be selected like any other approach, ***or*** it can be selected by entering the 5-digit WAAS channel ID number in the APPR field.

Second, when a WAAS approach is armed, the predicted Level Of Service (LOS) will be presented in the upper right corner of NAV page 1 and 2.



Third, LOS annunciators will indicate the approach is armed and the LOS (LPV, LNAV/VNAV or LNAV) is selected.

Fourth, during a missed approach, the FMS will maintain approach scaling and alerting until crossing the missed approach point (MAP), as indicated on NAV page 1 and 2 in the ANP and RNP fields.

Universal Works with Student Team On RFID-Based System To Save Board Components

Universal recently worked with a team of engineering students from the University of Arizona in Tucson, AZ to design an RFID-based system that tracks how long moisture-sensitive microchip circuit board components are exposed to air.

When circuit board components are overexposed to humidity, they no longer fuse together properly during the soldering process. In order to adhere to Universal's strict quality standards, parts near the exposure limit must be put through the soldering process immediately or thrown away. In the past, Universal used a time-consuming system that stored parts in vacuum-sealed bags identified by paper labels to measure the exact length of time components are exposed to air.

With the new RFID-based system, parts are stored in desiccators, also known as dry boxes, that use nitrogen gas to displace moisture filled air. An RFID tag attached to each tray of parts tracks how long parts are outside the dry box.

"This new process saves us time and money," says Brenda Hughes, Material Control Manager, "and the student team did an excellent job on this project. We are very pleased with the outcome."

To display the RNAV APPR LOS page, select "APPR LOS" from the NAV page. At approach arm, the FMS automatically selects the best predicted LOS for the approach, but a different LOS may be selected from this page if desired.

A manual selection of LOS may avoid automatic LOS downgrade when vertical integrity cannot be established, and allow baro guidance to be used for the approach.

Service Bulletins and Letters

SB/SL No.	Release Date	Title
SB3237 Rev A	3/24/08	Installation of Mod 1 into Slimline CVR Control Unit
SB3289	3/26/08	Installation of SCN 1010.2.5 in the EFI-550, -600 and -640
SB3285	3/28/08	Introduction of SCN 803.1/903.1 in the FMS/MMMS
SB3288	3/31/08	Installation of Mod 1 in the ARINC Radio Tuning Unit (ARTU)
SB3290	4/28/08	Installation of SCN 1017.1.1 for EFI-890R PFD and ND
SB3259 Rev A	5/12/08	Installation of Mod 11 in the 4-Inch FPCDU
SB3291	6/2/08	Installation of SCN 11.2 in Vision-1

Did you know...

You can receive Service Bulletins and Letters by email?

Receive Service Bulletins and Letters as soon as they are released instead of waiting for a hard copy in the mail.

To sign up, email Tech Pubs at **techpubs@uasc.com** (include the appropriate email address for the receipt of Service Letter and Bulletin e-copies).

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New Procedures for IFR Flight Plans

The FAA recently changed procedures for IFR flight plans. Effective June 29th, 2008, pilots wishing to be assigned advanced RNAV routing must file an FAA Form 7233-4, International Flight Plan (ICAO Flight Plan), with appropriate entries in blocks 10 and 18. Users may continue to file the older 7233-1 form, but will not be automatically entered into the ATC system as advanced RNAV users.

Some flight planning service providers are questioning their customers about the proper entries for their aircraft.

Here are common FAQs about RNAV capabilities and RNP authorizations for users of Universal FMSs:

What RNAV capabilities should I file for? The ability to file for RNAV capabilities is dependent upon compliance with AC 90-100A. UASC Service Letter 2804, provides detailed information on compliance with RNAV. For the majority of UASC FMS users the correct RNAV levels are D1, E2 and A1.

What RNP levels is my aircraft approved for? RNP certification is a separate question from RNAV capabilities. Any certification for an aircraft to operate in RNP airspace or to fly RNP procedures such as RNAV (RNP) approaches requires specific aircraft and pilot approvals. A review of the AFMS for an aircraft should clearly indicate these approvals such as "Oceanic RNP-10" or "RNP-4" capability. Supplements may also contain references to European BRNAV (RNP 5) or European PRNAV (RNP 1). Note that no RNP level is required for operation in U.S. Domestic airspace other than RNAV (RNP) approaches IAW AC 90-101.

Universal expects to post further information about this topic on our website at *www.uasc.com*.

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UNIVERSAL® AVIONICS SYSTEMS CORPORATION
3260 E. Universal Way
Tucson, AZ 85756

Corporate Offices
Marketing/Support
3260 E. Universal Way
Tucson, AZ 85756 U.S.A.
Tel: (520) 295-2300
(800) 321-5253
Fax: (520) 295-2395

Internet
www.uasc.com
E-mail: info@uasc.com