

Ongoing Trial for RLongSM

Recently, the Federal Aviation Administration (FAA) released Information for Operators (InFO) 12016, *Reduced Longitudinal Separation Minimum (RLongSM) Trial*. InFO 12016 announces that Gander and Shanwick Oceanic Control Area (OCA) centers have implemented a trial of reduced longitudinal separation standards, a five-minute longitudinal separation minimum to be applied between eligible aircraft. This trial is in support of the development of a separation minimum to aid in obtaining optimum vertical profiles.

The trial's five-minute longitudinal separation minimum becomes available once the eligible aircraft has entered the Gander or Shanwick OCA and the aircraft is equipped with FANS 1/A and a datalink connection is established with Air Traffic Control (ATC). Eligible aircraft must have a flight plan, use Automatic Dependent Surveillance-Contract (ADS-C) and Direct Controller

Pilot Communications (DCPC) provided via Controller Pilot Datalink Communications (CPDLC). Additionally, flights must have reported passing a common point from which they follow the same or continuously diverging routes.

To become part of this trial, operators should simply request a change in altitude, be properly equipped and have Minimum Navigation Performance Specifications (MNPS) approval. No application is necessary to become part of this trial.

Operators of eligible aircraft benefit from more fuel-efficient levels, the ability to climb through/follow another eligible aircraft at the same level and change mach or altitude due to turbulence or bad weather.

Info 12016, along with other InFO's, may be found online at: www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info/all_infos/.

Product News and Highlights

Matching Advanced Avionics to Customer Needs

Precision Airdrop for Mission Success

Available with the next major software release, Software Control Number (SCN) 1101, Airdrop is a new optional module for the WAAS/SBAS-capable Multi-Mission Management System (MMMS). Developed to enhance operational efficiency and support special mission operations, Airdrop calculates an Air Release Point (ARP), and provides guidance and steering to a position offset where the delivery should exit the aircraft for a landing at the desired drop zone. Airdrop also features:

- An internal database which includes known characteristics of specific parachutes and aircraft data that will be used for Low Altitude Computed Air Release Point (CARP) and High Altitude Computed Air Release Point (HARP) deliveries.
- Dynamic guidance to the ARP updated continuously until 15 seconds prior to the release.
- An automatic "holding pattern" reversal and repeat for more than one pass over the target zone.

Universal Avionics' MMMS offers precision Airdrop for mission success. Universal Avionics' Airdrop module will be available second quarter 2013. For more information, please contact a Universal Avionics Regional Sales Manager.



WAAS/SBAS-MMMS Family: LP/LPV Monitor, UNS-1Lw, UNS-1Fw and UNS-1Ew

Save Fuel with FlexPerf™ Trip Performance

The new FlexPerf Trip Performance Module for Universal's WAAS/SBAS-Flight Management System (FMS) and MMMS provides advanced fuel saving predictions for aircraft performance in Climb, Cruise and Descent phases of flight. Available with SCN 1001/1101, FlexPerf Trip Performance features a "flexible" intelligent design that uses actual "realized" aircraft fuel burn to apply improvements to the baseline aircraft performance database. In addition, FlexPerf senses the smallest changes to the aircraft that can affect fuel performance like paint and engine health.

The module includes:

- A customized performance database tailored to the specific aircraft configuration.
- Maximum flight profile performance from take-off to climb, cruise, descent and landing.
- Improved flight plan pages that display best performance speed limitations for each waypoint.

FMS SCN 1001/1101 with FlexPerf Trip Performance will be available second quarter 2013. For more information, please contact a Universal Avionics Regional Sales Manager.

Link 2000+: What It Means for Operators

The EUROCONTROL Link 2000+ Programme mandates the European implementation of CPDLC in upper airspace. CPDLC supplements traditional voice communication between pilots and ATC, thereby increasing Air Traffic Management (ATM) capacity by automating routine tasks and improving safety and efficiency.

Data Link Services Implementing Rule

Using the Aeronautical Telecommunication Network (ATN) and VHF Digital Link Mode 2 (VDL Mode 2), the EUROCONTROL Link 2000+ Programme is currently deploying CPDLC services in the European Airspace.

The Single European Sky (SES) Data Link Services Implementing Rule (DLS IR) requires all existing aircraft operating above FL 285 to be retrofitted for the Link 2000+ Programme by February 7, 2015. More information can be found at: www.eurocontrol.int/articles/data-link-services-implementing-rule.

Although certain aircraft may have an exemption, the rule will be "best equipped-best served". Therefore, the cost of non-compliance means unfavorable routing/longer distances, delays in getting clearances into the airspace, or having to fly below FL 285, resulting in higher fuel costs. It is essential that operators take these recommended actions to avoid additional operating costs.

Benefits

CPDLC is a significant benefit to the aviation industry. The main benefits of CPDLC include:

- *Additional communications channel:* A second, independent communication channel to controllers and pilots, reduces the strain on busy sector frequencies.
- *Enhanced safety:* Offers an alternative, unambiguous communication channel with no risk of misunderstanding.
- *Increased capacity:* A reduced voice-frequency load increases capacity.
- *Greater efficiency:* Given the ability to read the text messages, the workload is reduced for both pilots and controllers.

Universal Avionics' Solution

Universal Avionics' UniLink UL-800/801 Communications Management Unit (CMU), is slated to be one of the only integrated airborne datalink systems to provide CPDLC and Context Management (CM) functions required to meet the upcoming Link 2000+ Programme mandate. These functions will be incorporated in an upcoming software upgrade to the CMU, to coincide with upcoming mandates. This gives operators of a wide-range of aircraft types the availability to meet the mandate.

The software upgrade for UniLink will be certified in 2014, in time for operators to comply with the Link 2000+ Programme mandate. Operators of aircraft not in compliance with the mandate must otherwise file for an exemption to the rule, yet will still be limited to certain flight paths.

The upgrade will offer the following new capabilities:

- CPDLC and CM functions to support the DLS IR in Europe.
- Updated VDL Mode 2 with multi-frequency capability.
- Future Air Navigation System (FANS) / ATN CPDLC message harmonization.
- FANS operation in domestic U.S. airspace (FAA Data Communications).

To learn more about Universal Avionics' UniLink UL-800/801, visit: www.uasc.com/products/unilink.aspx.



UniLink UL-800/801 Communications Management Unit (CMU) Airborne Datalink System

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.

Feedback

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

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From the Flight Deck

Discussing ADS-B Out with Universal Avionics' Manager of Airworthiness and Flight Operations

For this issue of *The Universal Flyer*, we asked Paul Damschen, Universal's Manager of Airworthiness and Flight Operations, to sit down with us



Paul in the flight deck of Universal's Beechcraft King Air F90

and discuss the current and future importance of Automatic Dependent Surveillance-Broadcast (ADS-B) Out. Here's what he had to say:

The Universal Flyer: What is ADS-B Out?

Paul: ADS-B Out is the backbone of the FAA's NextGen National Airspace System and will be

mandatory in all Class A, B and C airspace. It involves the transmission of a GPS position from an aircraft in order to display the aircraft's location to ATC on the ground or to pilots in the cockpits of aircraft equipped with ADS-B In. This technology will provide aircraft position with high integrity to ATC as well as ADS-B In equipment.

The Universal Flyer: How does ADS-B Out benefit operators?

Paul: ADS-B Out benefits operators in a number of ways, it:

- Complies with the FAA and EASA mandates for equipage and support of NextGen navigation capability.
- Improves situational awareness, increasing safety as ADS-B In allows pilots to see what ATC see – other aircraft in the sky around them. For ADS-B Out and In equipped aircraft, there are a number of new capabilities planned that will allow for closely-spaced parallel approaches, as well as Airport Surface Alerts, and In-Trail Procedures in remote airspaces such as the NAT tracks to Europe.
- Reduces separation between aircraft as a result of improved accuracy, integrity and reliability of satellite signals over radar.

- Increases coverage since ADS-B ground stations are much easier to place than radar. Therefore, remote areas without radar coverage will be covered with ADS-B.
- More direct flights which saves time and money while reducing fuel burn. This is also directly related to Required Navigation Performance (RNP) airspace requirements as NextGen moves forward.
- Installation of a Satellite-Based Augmentation System (SBAS)-FMS (TSO C145/C146 SBAS/GPS required for ADS-B) also provides for Localizer Performance with Vertical Guidance (LPV) approach capability, of which there are over 3,000 such approaches in the U.S. alone. The European Geostationary Navigation Overlay System (EGNOS) is now online and LPV approach capability is becoming available in Europe as well.

The Universal Flyer: What is the FAA mandate for ADS-B Out?

Paul: The FAA has mandated ADS-B Out by January 1, 2020. EASA may mandate ADS-B Out as early as 2015.

The Universal Flyer: What actions do operators need to take to equip their aircraft for ADS-B Out?

Paul: The minimum set of equipment for ADS-B Out to satisfy the mandate is an extended squitter Mode S transponder, which accepts GPS position information from an SBAS GPS sensor, such as Universal's line of WAAS/SBAS-FMS. At this time, only an SBAS GPS sensor meets the ADS-B Out requirements. Earlier TSO C129 GPS systems will not. Light aircraft utilize alternatives, such as a transceiver known as UAT. However, this is limited to aircraft flying below FL180 and is not a viable option for transport aircraft.

Look for more pilot tips, tricks and advice from Paul in future issues of *The Universal Flyer*.

Magnetic Variation Differences

On SID/STAR Charts

Information for operators regarding magnetic variation differences between ground-based Navigational Aid (NAVAID) Instrument Flight Procedures (IFP), Area Navigation (RNAV) IFPs and RNAV systems were published in the FAA's InFO 12009. InFO 12009 explains some of the variation differences between the magnetic courses charted on Standard Instrument Departure/Standard Terminal Arrival (SID/STAR) charts and magnetic courses displayed by some RNAV systems. This brief overview explains to operators why the FMS doesn't always match the chart and why NAVAID-based IFP charts don't match RNAV IFP charts even when the same waypoints are used in the procedure.

In most cases, these differences are related to charting convention and RNAV system design differences as they apply to magnetic variation.

According to InFO 12009:

"Each leg of an instrument procedure, regardless of type, is first charted along a desired ground track with reference to true north. The resulting true course is then corrected for magnetic variation in order to determine the magnetic course to be depicted on the IFP plate. The magnetic variation used for this correction, however, may vary somewhat depending on whether the procedure is a 'conventional' NAVAID-based IFP or RNAV IFP. As a result, there will often be slight variances in magnetic course between NAVAID-based and RNAV IFP legs."

InFO 12009, along with other InFO's, may be found online at: www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info/all_infos/.

Midwest Support Center

Now Accepting Repairs for International Shipment

Although the facility is smaller, Universal Avionics' Midwest Support Center in Wichita, Kansas offers the same services to customers as the Main Support Center in Tucson, Arizona. These services include customer support, technical support, field support, a repair station, warranty exchange, warranty loaner, rental equipment and training.

Similar to the support provided by the Main Support Center, the Midwest Support Center's repair station also now assists with repairs for international shipment. Should you need repair services, contact either Support Center to determine where to send your equipment for the best turnaround time for your schedule.



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