



# INSIDE THE BLACK BOX

e-newsletter from  
L-3 Aviation Recorders

Fall 2008



## New Requirement Regulated by the FAA

Beginning April 10, 2010, all new-manufactured aircraft are required to be fitted with a Recorder Independent Power Supply (RIPS), a 10-minute battery backup power supply for the Cockpit Voice Recorder (CVR). The 10 minutes of recording power can give incident and accident investigators information that might otherwise be unavailable in the case of a power interruption or complete power failure on the aircraft. The L-3 RIPS has been developed in accordance with ARINC 777 and FAA requirements. L-3 is the world's leading manufacturer of CVRs and is the first to be issued a patent for the ARINC Type II RIPS. L-3 offers RIPS in an ARINC Type II Tray Configuration or Type I/III Flangemount configuration. For more information on how the L-3 RIPS can help you meet the FAA mandate, email us at: [Marketing.AR@L-3com.com](mailto:Marketing.AR@L-3com.com)



## Upcoming Events

**NBAA 61<sup>st</sup> Meeting & Convention**  
October 6-8  
Orlando, FL  
Booth #4200

**SAAB 340 Global Operators Conference**  
October 6-9  
Clearwater, FL

**Aero India 2009**  
February 11-15  
Air Force Station  
Yelahanka, Bangalore

## FYI

If you are interested in obtaining technical specification sheets on L-3 products, please click here or visit [www.L-3ar.com](http://www.L-3ar.com)

## To Our Customers, Industry Colleagues and Friends

**Greetings!** Welcome to the inaugural edition of the L-3 Aviation Recorders e-Newsletter. This short but informative quarterly report will highlight technology trends and product offerings from L-3 and also provide readers with aerospace industry information relevant to flight recording systems.

Our lead article this quarter identifies recent changes to FAA airworthiness regulations for the installation of Cockpit Voice Recorder (CVR) and Flight Data Recorder (FDR) systems relating FAR Operations Parts 91, 121, 125 & 135. These rules have been pending for many years and became effective 12 March 2008. While there are a number of changes, the most significant are the requirements for a minimum 2-Hour CVR recording duration and the fitment of a 10-minute battery back-up power supply for the CVR. See the article for a summary and contact L-3 for any additional information you require.

Another article summarizes our CrewMate 840 Electronic Flight Bag system. We are proud to have our EFB selected by Bombardier on the Global Express, in conjunction with the Global Vision flight deck program. We invite you to visit us at NBAA Booth #4200 this October for additional exciting news about this emerging and expanding product line. Please contact us in the interim with any EFB questions relative to your program needs.

Finally, note our article on the achievement of a company milestone of which we are most proud: the delivery of our 70,000th flight recorder in June of this year. The delivery is a testament of our commitment to providing the aerospace industry with state-of-the-art flight recording technology for general aviation, regional, large transport, helicopter and military aircraft worldwide. This achievement could not have been envisioned in 1959, when we delivered our first flight recorder, and it certainly would not have been possible without the loyal support of our customers since that time. We thank you.

We are interested in any suggestions you might have for future articles. In the meantime, we trust you will find our newsletter informative. Thank you for taking time to review it.

Sincerely,

Mike Smith  
Senior Vice President, Business Development, L-3 Aviation Recorders  
[Mike.Smith@L-3com.com](mailto:Mike.Smith@L-3com.com)

## An Easier Way to Manage Your Cockpit Data, Both In and Out of the Cockpit

The aerospace industry concept for an Electronic Flight Bag (EFB) has developed over the past several years to become a preferred method for replacement of the traditional paper-laden, 40 pound carry-on flight bag that pilots have, until now, carried with them every day for each flight. This traditional flight bag, containing critical aircraft and aircrew operating manuals, navigational charts and other important documentation, can be eliminated in favor of a Portable Electronic Device (PED), weighing far less and storing far more data and documentation.



The L-3 Crewmate 840 Electronic Flight Bag is a PED that stores and displays data commonly required by pilots. All of the required data for approach plates, flight/operations manuals, checklists and other maps and documentation can be stored on the EFB. The Crewmate integrates an XGA AMLCD 1020 x 768 resolution, high contrast, extremely wide viewing angle display with a 64 GB high-density solid state flash memory in a rugged yet lightweight case. System interfaces for the Crewmate include ARINC 429 (receive only), RS-232/422 Serial, USB 2.0, Ethernet 10/100, IEEE 802.11 Wi-Fi, and Bluetooth. When removed from aircraft power, the Crewmate will operate for 1-hour on self-contained battery power.

The L-3 Crewmate can host several new L-3 cockpit applications, including real-time cockpit weather and airport moving map display data such as the ACSS SafeRoute applications. SafeRoute is a set of Automatic Dependent Surveillance-Broadcast (ADS-B) software applications designed to improve safety and efficiency of flight operations. On application, Surface Area Movement Management (SAMM), is designed to reduce the likelihood of runway incursions by displaying on the EFB a map of the airport surface together with an individual aircraft's "own ship" position on ramps, taxi ways and runways. Advanced SAMM applications can identify all airport active traffic and highlight in color on the EFB display any caution and keep-out areas as aircraft move around the airport.

For more information on the L-3 Crewmate 840 Electronic Flight Bag click here or email: [Marketing.AR@L-3com.com](mailto:Marketing.AR@L-3com.com)

## L-3 Produces its 70,000th "Black Box"

One of the greatest safety inventions for the commercial airline industry has been the accident-survivable flight recorder (more commonly referred to as the "black box").



The history of the aircraft flight data recorder (FDR) began in 1940, with the first-generation foil recorders. At that time, airworthiness officials considered that basic flight profile data such as heading, altitude, airspeed, vertical acceleration, and time should be captured and stored. This data was embossed during aircraft flight onto a special metal foil which was used only once. In 1987, when modern and expanded regulations were developed, foil recorders were no longer considered viable. They could not record additional flight profile data, and they did not survive in a majority of accident situations. The age of accident-protected magnetic tapebased FDRs began.

Meanwhile, in the late 1950s, regulators determined that FDR data alone did not provide all accident information that was needed by investigators. Tape cockpit voice recorders (CVR) began to be installed in commercial transport aircraft. The CVR recorded ambient noise along with the crew conversation and air traffic control communications. By 1965, all commercial airline operators were required to install a CVR which recorded the prior 30-minutes of crew voice communications and the ambient noises within the cockpit.

The modern era of solid-state FDR and CVR "black box" technology began in 1990. The tape media was replaced by semiconductor memory chips. The moving parts for the tape-based recorder were replaced by integrated circuits that interface electrically with aircraft sensors to receive flight and voice data to be stored on the memory chips. This technology allows more data to be captured and stored more reliably, and also ensures recovery of flight and voice data in the event of an accident.

L-3 introduced its first commercial solid-state flight data recorder in 1990 and has been one of the aerospace industry's largest manufacturers of flight data recorders for almost 50 years. Today, L-3 has approximately 71% of the worldwide market share for flight recorder products.

In 2000, L-3 Aviation Recorders donated its 50,000th solid-state flight recorder to the Smithsonian's National Air and Space Museum in Washington D.C. where it remains on display. L-3 Aviation Recorders recently produced its 70,000th flight recorder in June of this year.

L-3 expects to mark delivery of its 100,000th flight recorder by 2014. We thank you, our loyal customers, for making these incredible achievements possible.