



USER STORY

MPFR delivers weight savings with combined CVR/FDR for AgustaWestland AW139s

► THE PROGRAM

The AW139 is a new generation intermediate twin-turbine helicopter. Designed with inherent multi-role capability and flexibility of operation, the AW139 is capable of carrying up to 15 passengers.

► SYSTEM

All AW139 data is processed by the Honeywell Primus Epic avionics suit. One of the two integrated MAUs (Main Avionic Units) outputs an ARINC 573/717 data stream that acts as the input to the combined Cockpit Voice Recorder/Flight Data Recorder (CVR/FDR).

► RESULTS

- 100% positive accident data retrieval feedback from an installed base of hundreds of MPFRs
- Fast and accessible accident data saves time and money
- Small, light CVR/FDR easily provides customers with accident and flight data

“The MPFR was selected because of its small size, low weight, combined CVR/FDR functionality, seamlessly integrated software and ease of use.”

Marco Terzi
Accident incident investigator
AgustaWestland



THE PROGRAM

The AW139 is a new generation intermediate twin-turbine helicopter. Designed with inherent multi-role capability and flexibility of operation, the AW139 is capable of carrying up to 15 passengers.

The AW139 took its first flight in February 2001 and on-board was a combined Cockpit Voice Recorder/Flight Data Recorder (CVR/FDR) developed by Curtiss-Wright Controls Avionics & Electronics (CWC-AE), who have over 50 years' experience manufacturing crash recorder products. In 2001, CWC-AE was the first to create a combined CVR/FDR and obtain approval for solid state versions and therefore was selected to become a standard fit device on the AW139.

At the time of CVR/FDR selection, the CWC-AE Multi-Purpose Flight Recorder (MPFR) was the only

- Digital FDR
- Small, light, standalone CVR/FDR
- FDR with combined voice recording
- COTS FDR ready to interface with the ARINC 717 bus
- FDR that didn't require additional software

There are over 700 AW139s in the field in a wide range of applications including executive/VIP transport, EMS/SAR, offshore OGP support, firefighting, law enforcement, and military roles.

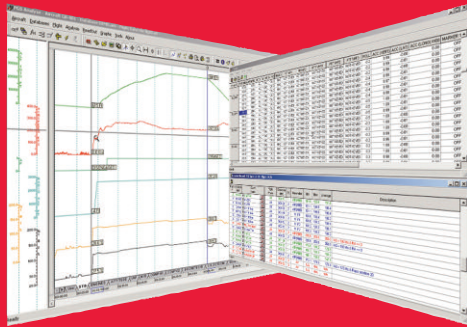
THE SYSTEM

All AW139 data is processed by the Honeywell Primus Epic avionics suit. One of the two integrated MAUs (Main Avionic Units) outputs an ARINC 573/717 data stream that acts as the input to the CVR/FDR. Over 700 aircraft parameters are captured by the CVR/FDR including those required for EUROCAE ED-55 and ED-56A FDR/CVR compliance as well as engine data, avionics information, installation parameters and fuel parameters. The recorder has the capacity to record 25 hours of flight data at 512 words per second in a continuous loop.

The MPFR is the most versatile recorder available, in the most compact package, fully approved for current and anticipated requirements. On-aircraft download from the MPFR is achieved in less than two minutes and can be networked directly to a remote operational base for remote diagnostics and fault reporting. Due to the availability of the data, many of AgustaWestland's customers' MPFRs are also used as a flight data monitoring data source.



► AW139



► APPLICATIONS & PRODUCTS

► APPLICATIONS

- Avionics
- Accident/Incident Recording
- Flight Data Recording

► PRODUCTS

- Multi-Purpose Flight Recorder (MPFR)

The MPFR is packaged as a compact unit ideal for the rotary wing or small/medium aircraft market. Weighing only 7lbs, the MPFR is one of the lightest on the market 30% to 50% lower than competing systems. AgustaWestland receive the MPFR already configured and installation is very easy requiring only the connection of one cable and four screws. The small system fits in the tail boom and the cable routing is easy; the single connection supplies data and power to the system. Importantly, this compact unit attaches directly to the airframe without the need for bulky equipment racks or anti-vibration mounts, thus reducing weight and permitting more optimum aircraft performance for lower operating costs.

For accident investigation, AgustaWestland uses third party, application specific software that is seamlessly integrated with the MPFR. To investigate more minor incidents, AgustaWestland uses PGS software, a data analysis and visualization suite. PGS is plug and play software that makes it simple to download the data and convert it into a graphical representation. AgustaWestland's AW139 customers also use PGS due to its ease of use, seamless integration and availability.

THE RESULTS

100% positive accident data retrieval
feedback from an installed base of over 500 MPFRs

To date, in every accident investigation case that required data retrieval off the MPFR, AgustaWestland has received 100% customer satisfaction and positive feedback. Even if the device was severely damaged or submerged in water, AgustaWestland investigators have been able to retrieve both audio and flight data although water contamination required a full recorder disassembly and memory boards cleaning.

To date AgustaWestland has never lost flight data due to memory corruption on the MPFR. The MPFR is standard fit on the AW139 which are flown in a number of roles including Law Enforcement, Emergency Medical Service, Executive Transport, Search and Rescue, Maritime and Offshore OGP. Although operating in these harsh environments, the MPFR has never been returned to AgustaWestland due to an operational fault or suspicious activity.

Fast and accessible accident data saves time and money

In the unfortunate event of an accident it is important to have reliable, easily accessible data pertaining to the aircraft's performance and pilot's actions to establish the cause. Information retrieval is made via a 10/100MB Fast Ethernet interface directly to a portable transfer device or analysis PC using standard network hardware and protocols. This means that AgustaWestland's accident investigators can download and process the data on the crash site, saving time and money typically incurred waiting for data retrieval and processing post-accident.

Small, light CVR/FDR easily provides customers with accident and flight data

The MPFR is the most versatile recorder available, in the most compact package, fully approved for current and anticipated crash recorder requirements. Data can be downloaded on-board in less than two minutes and it can be networked directly to a remote operational base for diagnostics and fault reporting. The MPFR comes with PGS data analysis and visualization software that's easy to use; AgustaWestland's customers are able to collect, access, and analyze data from the first flight it is used.

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