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## AIRSHOW-Air France crash sparks black box debate

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By Helen Massy-Beresford

PARIS, June 18 (Reuters) - While search teams scour the Atlantic ocean for the black boxes of Air France flight AF447 before their signals die out, aviation experts are considering satellite data streaming to collect vital flight data in future.

An airliner's black box -- which is made up of a flight data recorder and cockpit voice recorder -- is designed to withstand a crash and emit a signal for about 30 days afterwards. If it is not found by then, the data is unlikely to be recovered.

Many military aircraft already use data streaming, sending flight information real-time via satellite to ground stations.

But the massive bandwidth and sophisticated infrastructure needed to manage and process data from tens of thousands of commercial flights per day could make it prohibitively expensive.

"There have been studies on this for years. There are arguments both for and against, and also there are costs," Paul-Louis Arslanian, France's chief air disaster investigator said, after reporting that the search was progressing, but hampered by difficult search conditions.

"Data streaming is currently technologically possible, but technologically impractical," Dan Elwell, Vice President Civil Aviation of the U.S.-based Aerospace Industries Association (AIA) industry group, told Reuters at the Paris Air Show.

"There are opportunities there to improve the data stream and how we get it on and off the aircraft," said Bob Smith, Vice President for Advanced Technology at Honeywell, which made the black box that was on the Air France aircraft.

Bruce Coffey, President of the Aviation Recorders division of L-3 Communications -- the world's largest supplier of crash-survivable recording units -- told Reuters the use of data streaming in conjunction with traditional recording units could provide a "belt and suspenders" approach.

However, only one of L-3's black boxes has ever been lost after a crash -- from the American Airlines flight that ploughed into the World Trade Center on September 11 2001.

### CRUCIAL INFORMATION

Richard Hayden, President of Canada's Aeromechanical Services Ltd, thinks he has an answer to the question of cost.

The company's automated flight information recording system compresses data, allowing it to send 10 times more from an aircraft in the same bandwidth than with a standard satellite communication, dramatically cutting the cost to the operator.

Hayden said the system can be programmed to start transmitting data non-stop as soon as there's a problem on board, and that this could have sent crucial information about the June 1 Air France crash that killed all 228

people on board.

"Today we have a situation where there's a possibility, if not a probability, that the FDR won't be recovered. All we have left is a very small set of messages," Hayden said, referring to the automated maintenance messages the A330-200 sent in its final moments, charting problems in all onboard systems.

Data streaming may be able to supplement black boxes, but not replace them, L-3's Coffey said. "If you're not able to recover the black boxes, there are going to be a lot of questions that remain unanswered, that should be answered."

But industry specialists want guarantees that the highly sensitive data -- in particular the cockpit conversations -- will be properly protected, and pilots' privacy preserved.

"There is a huge sensitivity among pilots at the thought of every utterance being recorded and transmitted to some faraway place," said AIA's Elwell.

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