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## **Air France Airbus That Crashed Was Awaiting Sensor Replacement**

By Laurence Frost and Andrea Rothman - Jun 06, 2009

June 6 (Bloomberg) -- The Air France plane that crashed into the Atlantic this week was awaiting replacement of a speed sensor that investigators identified as a likely contributor to the accident.

The sensor, made by [Thales SA](#), gave inconsistent readings on the speed of the Airbus A330 jet en route to Paris from Rio de Janeiro June 1. [Airbus SAS](#) had advised airlines more than a year ago to replace the sensors on A330 jets with

models that are less vulnerable to ice, two people with knowledge of the matter said yesterday.

France's chief crash investigator today told journalists at a briefing near Paris that the failure of the air sensor to convey reliable speed data may have kicked off the chain of events that led to the deaths of all 228 people aboard.

“The sensors had not been replaced” with the improved units, said [Paul-Louis Arslanian](#), head of France's air-accident investigation agency, at a briefing outside Paris. “But that doesn't mean that without them the plane was dangerous.” The inconsistent speed measurements may have played a role in the crash, though it's “too early to draw conclusions,” he added.

Air France spokeswoman [Veronique Brachet](#) declined to comment, referring all inquiries to investigators.

[Flight 447](#) disappeared with 216 passengers and 12 crew members over the Atlantic. Weather conditions at the time of the crash were no worse than what

pilots typically encounter when they fly through the area, known for its violent storms and strong winds, Alain Ratier, who heads France's weather forecasting agency, said at today's briefing.

## Broken Rudder

"It was a normal situation for the season and the place," Arslanian said. "That's not to say it was easy."

Today, the second briefing by the French office of air accident probes, was the first time investigators have discussed the possibility that speed sensors blocked or damaged by ice could have played a role in the disaster.

Over a four-minute period, the aircraft beamed 24 automated radio messages to computers on the ground logging a catalogue of system failures or shutdowns, beginning with the autopilot. One of the messages showed the rudder was broken, making control of the aircraft impossible, according to Brazil's [Folha de S. Paulo](#) newspaper. Arslanian said today the flight computer may have returned

control to the crew because it detected the discrepancies among speed measurements from the three sensors.

In its final transmission, the plane signaled a drastic drop in the pressure difference inside and outside the cabin, which can result from a plane's disintegration or from a rapid decline in altitude.

## Reminder to Pilots

Accurate airspeed readings are pivotal because flying too fast can damage a plane's airframe and traveling too slowly risks losing lift in a so-called aerodynamic stall.

The service bulletin about the [Thales](#) part was a recommendation, the people familiar with the memo sent to airlines said yesterday, asking not to be identified because the document was confidential.

“Recommendations are frequent and not issued in cases where there's a truly

pressing concern,” said [Richard Aboulafia](#), vice president at consultant Teal Group in Fairfax, Virginia. In critical cases, regulators issue binding orders.

Air France has been installing the new sensors as the jets undergo scheduled overhauls.

Airbus this week, in response to the accident, issued a reminder to pilots of the procedures to follow when speed data becomes unreliable, as detailed in its pilot manuals.

“If there are unreliable speeds indicated, one should maintain thrust and pitch, and level off if necessary and start trouble-shooting procedures,” Airbus spokesman [Stefan Schaffrath](#) said today. He confirmed the existence of a service bulletin about sensor replacements.

## Other Incidents

The crash probe is looking at other incidents reported with A330s, Arslanian

said. The accident doesn't mean that other planes of this model are unsafe, even if their speed sensors haven't been upgraded, he added.

“My sister and her son are going to take an A330 next week to go on holiday,” Arslanian said. “I told them to go ahead and fly.”

The sensor on the A330 is a so-called [Pitot tube](#), named after the French engineer who discovered in the early 1700s that the pressure of a gas or liquid through a tube could be used to determine velocity. According to Thales, its unit includes an electric heating system to “limit the risk of icing.”

## Overshooting the Runway

Thales will be asked to supply information to crash investigators, one of the persons with knowledge of the inquiry said. [Christophe Robin](#), a spokesman for the Neuilly-sur-Seine, France-based company, didn't immediately return a call to his mobile phone after regular business hours.

Blocked or damaged Pitot tubes have been blamed for air disasters including the 1996 crash of a [Boeing Co.](#) 757 flown by Alas Nacionales, which plunged into the Atlantic after takeoff from the Dominican Republic, killing all 189 people on board. Readings overstating the plane's speed caused the pilots to fly too slowly and stall, investigators found.

In 1999, a blocked sensor contributed to the crash of a Boeing MD-11 flown by [FedEx Corp.](#) that overshot the runway as it attempted to land in the Philippines.

Brazilian and French search teams have yet to recover any confirmed debris from Flight 447, which was lost in an area without radar coverage.

According to the Airbus Web site, more than 600 A330s are in service around the world with 65 carriers, including [Delta Air Lines Inc.](#) and [US Airways Group Inc.](#) Both companies declined to comment.

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