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02/25/2010

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Death in the Atlantic

The Last Four Minutes of Air France Flight 447

By Gerald Trautetter

Part 5: Minute Four: Impact

More than 200 tons of metal, plastic, kerosene and human bodies smashed into the sea. The sheer force of the impact is described in the forensic report, which lists in graphic detail how lungs were torn apart and bones were shredded end to end. Some of the passengers were sliced in half by their seatbelt.

Much of the debris that has been recovered is no larger than a square meter (10 square feet). The shear-lines run at a conspicuous angle. This shows that the plane did not plunge vertically into the sea, but rather hit the water like a flat hand, with the nose of the aircraft pointing upwards at a five-degree angle. Of particular interest is the large tailfin that was recovered from the ocean by the Brazilian navy. This was ripped from its anchoring and catapulted forwards. From this, it can be deduced that the A330 was brought to a halt with a force more than 36 times that of normal gravity: 36g.



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Graphic: The last four minutes of Air France flight 447.

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Photo Gallery: The Final Minutes of Flight 447

5 Photos

Although Airbus continues to play down the significance of the pitot tubes in the crash of its A330, the company's engineers have since developed new technologies that will detect the breakdown of airspeed sensors even before takeoff. Airbus registered a patent for this technology in the US on Dec. 3, 2009. In the words of the patent application, errors in speed measurements "can have catastrophic consequences."

For several years now, Airbus has offered its customers a special safety program - called "Buss" -- at a cost of €300,000 per aircraft. If the airspeed indicator fails, this software shows pilots the angle at which they must point the plane.

Up to now, Air France has chosen not to invest in this optional extra for its fleet.

Translated from the German by Jan Liebelt

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Part 1: The Last Four Minutes of Air France Flight 447

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Part 5: Minute Four: Impact

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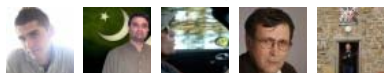
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03/10/2010 from rd2gosoan: GPS For airspeed?

GPS will give earth-centric velocity, but not airspeed. The INS may or may not give airspeed, but usually give earth-centric velocity, BUT, INS (all I know of) also give wind speed and direction, but this info is derived from the [...] more...

03/10/2010 from parkermorris: Can't be Pitot Tubes... Can It?

I still bear the scar that I received after grabbing a heated pitot tube on an American Eagle Jetstream 31 (J31) aircraft shortly after it had landed from a 30 minutes flight. I find it so incredible that this advanced Air France [...] more...

03/02/2010 from jjflys:

Measuring speed by GPS would give you groundspeed which at this altitude is wildly different from the indicated airspeed that you would see on the gauges. Pitot tubes measure the impact pressure of the air, and since air is less [...] more...

03/02/2010 from netshade:

---Quote (Originally by schwammy)--- "To this day, the relevant licensing bodies still only test pitot tubes down to temperatures of minus 40 degrees Celsius (minus 40 degrees Fahrenheit)..." I'm pretty sure that -40F and [...] more...

03/01/2010 from doug: Of Pitot Tubes and Temps...

Bukahaka: Good question on heated pitot tubes, I know that military aircraft (F-111 and the F-15 among others) heat their pitot tubes to 400F to prevent just such icing problems. Does the Airbus in question have heated pitot [...] more...

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