

SYNOPSIS

Date of accident

1st June 2009 at 2 h 14 min 28¹

Site of accident

At reference 3°03'57'' N, 30°33'42'' W,
near the TASIL point, in international
waters, Atlantic Ocean

Type of flight

International public transport of
passengers
Scheduled flight AF 447

Aircraft

Airbus A330-203
Registered F-GZCP

Owner and Operator

Air France

Operator

Air France

Persons on board

Flight crew: 3
Cabin crew: 9
Passengers: 216

On 31 May 2009, the Airbus A330 flight AF 447 took off from Rio de Janeiro Galeão Airport bound for Paris Charles de Gaulle. The aeroplane was in contact with the Brazilian ATLANTICO control centre on the INTOL – SALPU – ORARO - TASIL route at FL350. At around 2 h 02, the Captain left the cockpit. At around 2 h 08, the crew made a course change of 12 degrees to the left, probably to avoid returns detected by the weather radar.

At 2 h 10 min 05, likely following the obstruction of the Pitot probes by ice crystals, the speed indications were incorrect and some automatic systems disconnected. The aeroplane's flight path was not controlled by the two copilots. They were rejoined 1 minute 30 later by the Captain, while the aeroplane was in a stall situation that lasted until the impact with the sea at 2 h 14 min 28.

The accident resulted from the following succession of events:

- Temporary inconsistency between the measured airspeeds, likely following the obstruction of the Pitot probes by ice crystals that led in particular to autopilot disconnection and a reconfiguration to alternate law,

¹ All times in this report are UTC, except where otherwise specified. Two hours should be added to obtain the legal time applicable in metropolitan France on the day of the event, and three hours subtracted for Rio de Janeiro time.

- Inappropriate control inputs that destabilized the flight path,
- The crew not making the connection between the loss of indicated airspeeds and the appropriate procedure,
- The PNF's late identification of the deviation in the flight path and insufficient correction by the PF,
- The crew not identifying the approach to stall, the lack of an immediate reaction on its part and exit from the flight envelope,
- The crew's failure to diagnose the stall situation and, consequently, the lack of any actions that would have made recovery possible.

The BEA has addressed 41 Safety Recommendations to the DGAC, EASA, the FAA, ICAO and to the Brazilian and Senegalese authorities related to flight recorders, certification, training and recurrent training of pilots, relief of the Captain, SAR and ATC, flight simulators, cockpit ergonomics, operational feedback and oversight of operators by the national oversight authority.