FINAL REPORT

Accident on 1st June 2009
to the Airbus A330-203
operated by Air France
flight AF 447 - Rio de Janeiro - Paris
Sequence of events leading to the accident
1. The temporary inconsistency between the measured speeds, following the obstruction of the Pitot probes by ice crystals
1. The temporary inconsistency between the measured speeds, following the obstruction of the Pitot probes by ice crystals

⇒ autopilot disconnection and reconfiguration to *alternate* law
2. control inputs destabilizing the flight path
3. The lack of any link, by the crew, between the loss of displayed airspeed information and the appropriate procedure.
4. The late identification of the deviation from the flight path by the PNF and insufficient correction applied by the PF
5. The crew not identifying the approach to stall, their lack of immediate response and the exit from the flight envelope

6. The crew’s failure to diagnose the stall situation and consequently a lack of inputs that would have made recovery possible
These events can be explained by the combination of these associated factors:

- The feedback mechanisms of all of those involved
- An absence of training, at high altitude, in manual aeroplane handling and the procedure relating to speed indication anomalies
- Task-sharing weakened by the startle effect and by incomprehension of the situation
- Lack of a clear display in the cockpit of the airspeed inconsistencies identified by the computers
- The crew not taking into account the stall warning
New Safety Recommendations

- Initial and recurrent training for pilots
- Aeroplane systems
- The feedback process
- Surveillance of the operator
- Launching SAR operations and wreckage localisation
- ATC