

CAUSES AND CONTRIBUTING FACTORS

The accident was caused by the loss of control of the airplane by the crew following the improvised demonstration of the functioning of the angle of attack protections, while the blockage of the angle of attack sensors made it impossible for these protections to trigger.

The crew was not aware of the blockage of the angle of attack sensors. They did not take into account the speeds mentioned in the programme of checks available to them and consequently did not stop the demonstration before the stall.

The following factors contributed to the accident:

- The decision to carry out the demonstration at a low height;
- The crew's management, during the thrust increase, of the strong increase in the longitudinal pitch, the crew not having identified the pitch-up stop position of the horizontal stabiliser nor acted on the trim wheel to correct it, nor reduced engine thrust
- The crew having to manage the conduct of the flight, follow the programme of in-flight checks, adapted during the flight, and the preparation of the following stage, which greatly increased the work load and led the crew to improvise according to the constraints encountered;
- The decision to use a flight programme developed for crews trained for test flights, which led the crew to undertake checks without knowing their aim;
- The absence of a regulatory framework in relation to non-revenue flights in the areas of air traffic management, of operations and of operational aspects;
- The absence of consistency in the rinsing task in the airplane cleaning procedure, and in particular the absence of protection of the AOA sensors, during rinsing with water of the airplane three days before the flight. This led to the blockage of the AOA sensors through freezing of the water that was able to penetrate into the inside of the sensor bodies.

The following factors also probably contributed to the accident:

- Inadequate coordination between an atypical team composed of three airline pilots in the cockpit;
- The fatigue that may have reduced the crew's awareness of the various items of information relating to the state of the systems.