



Australian Government

Australian Transport Safety Bureau

# Safety Advisory Notice

To manufacturers and operators of larger air transport aeroplanes

Number: AO-2018-053-SAN-004

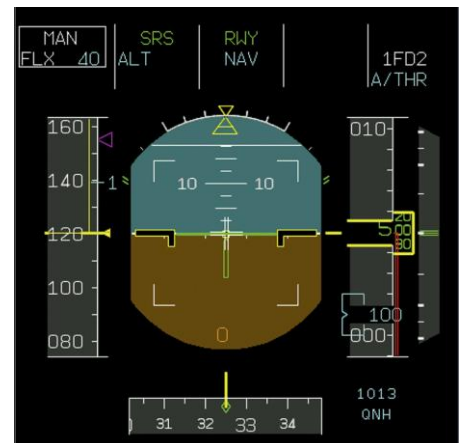
## Alerts and guidance for unreliable airspeed indications on take-off

**Delayed flight crew responses can lead to hazardous high-speed rejected take-offs or flight with unreliable airspeed indications.**

### What happened

On the night of 18 July 2018, an Airbus A330 commenced take-off from Brisbane, Queensland with covers left on the aircraft's three pitot probes (airspeed sensors). The primary flight displays showed red speed flags in place of the airspeed indication early in the take-off, and either speed flags or unrealistically low airspeeds for the remainder of the flight. The standby airspeed display was also invalid throughout the flight.

The flight crew did not see or respond to the speed flags until the aircraft's speed was too high for a safe rejection of the take-off. The take-off was continued and the aircraft returned to Brisbane.



Source: Airbus

### Why did it happen

Surprise, uncertainty, time pressure, and ineffective communication between the two pilots during the take-off probably led to stress and high cognitive workload. Numerous take-offs have been continued, or rejected at high speed, with single or multiple airspeed anomalies. Flight crews who continued generally turned back.

The ATSB found that flight crews were not detecting unreliable airspeed early enough in the take-off, or if they did, other factors prevented or delayed a decision to reject the take-off. This is probably because:

- aircraft alerts related to unreliable airspeed were either not available during take-off, or were not prominent enough to gain both the flight crew's attention in a manner that the presence and importance of the problem were both immediately apparent
- there was limited guidance provided to flight crews to aid in the detection and decision-making processes in response to unreliable airspeed indications.

These concerns are very likely to be relevant to many aircraft types.

### Safety advisory notice

**AO-2018-053-SAN-004:** The Australian Transport Safety Bureau encourages all manufacturers and operators of larger air transport aeroplanes to consider what types of unreliable airspeed events can occur, how the information is presented to flight crews, and what responses are the safest in different phases of the take-off and in a range of potential situations. Aircraft alerting systems, flight crew procedures, and flight crew training should be designed to provide sufficient assurance that flight crews become aware of and understand how to appropriately respond to unreliable airspeed on take-off in a timely manner.

Read more about this ATSB investigation:

[https://www.atsb.gov.au/publications/investigation\\_reports/2018/air/ao-2018-053](https://www.atsb.gov.au/publications/investigation_reports/2018/air/ao-2018-053)

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Australia's national transport safety investigator

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