

**Aviation Safety Investigation Report  
199701518**

**Boeing Co  
B737**

**30 April 1997**

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**NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at [www.atsb.gov.au](http://www.atsb.gov.au).**

The Bureau did not conduct an on scene investigation of this occurrence. The information presented below was obtained from information supplied to the Bureau.

**Occurrence Number:** 199701518                      **Occurrence Type:** Incident  
**Location:** Enroute Darwin to Adelaide  
**State:** NT    **Inv Category:** 4  
**Date:** Wednesday 30 April 1997  
**Time:** 1400 hours                              **Time Zone**                      CST  
**Highest Injury Level:** None

**Aircraft Manufacturer:** Boeing Co  
**Aircraft Model:** 737-33A  
**Aircraft Registration:** VH-CZW                      **Serial Number:** 23832  
**Type of Operation:** Air Transport Domestic Passenger  
**Damage to Aircraft:**  
**Departure Point:** Darwin  
**Departure Time:** 1250 CST  
**Destination:** Adelaide

**Approved for Release:** Thursday, September 18, 1997

### Occurrence Brief

The Boeing 737 departed Darwin for Adelaide at 1250 CST. During cruise at FL330, with Autopilot A selected in Command mode, the crew reported that the aircraft exhibited dutch roll tendencies and that an Air Data Computer malfunction had occurred. Autopilot A was disengaged and the aircraft was flown manually for approximately 2 minutes before Autopilot B was selected in Command Mode. Some time later Autopilot A was re-engaged with no problems observed. (Each Autopilot receives inputs from a different Air Data Computer.)

Engineering staff removed the digital flight data recorder from the aircraft in Adelaide and sent a copy tape to the Bureau for analysis. The data showed that at 1357 CST five cycles of left then right roll of increasing amplitude occurred. The total duration of the five cycles was 40 seconds. Approximately 1 1/2 minutes later a similar disturbance occurred followed quickly by a third disturbance of lesser magnitude. The maximum roll experienced during these disturbances was 3 degrees. Only very small heading changes were associated with this roll. Autopilot A provided aileron control inputs to counteract the roll.

Occasional large fluctuations in recorded Air Data Computer parameters (Pressure Altitude, Computed Airspeed, Mach Number, Total Air Temperature and Static Air Temperature) were observed in the recorded data commencing at 1401 CST. These indications are consistent with a malfunctioning Air Data Computer.

Neither Rudder Position nor Yaw Damper status are directly recorded so the cause of the dutch roll could not be positively determined however the yaw damper does have airspeed as an input. While rudder pedal position is recorded there is no mechanical feedback from the yaw damper to move the rudder pedals.

At 1600 CST shortly before top-of-descent Autopilot A was re-engaged in Command mode. No anomalies were observed in the recorded data at this time.

The Air Data Computer suffering the malfunction was removed from the aircraft in Adelaide and quarantined for fault-finding. During subsequent examination, a fault was found with this unit. The aircraft's in-service performance has been closely monitored by the operator since this occurrence and no anomalous behaviour has been reported to date (2 July 1997).

There was no safety action as a result of this occurrence.

