

**Aviation Safety Investigation Report  
199800283**

**Boeing Co  
B747  
Douglas Aircraft Co Inc  
DC8-73**

**26 January 1998**

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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).**

**Occurrence Number:** 199800283      **Occurrence Type:** Incident  
**Location:** Oakland Oceanic Airspace  
**State:** Other      **Inv Category:** 4  
**Date:** Monday 26 January 1998  
**Time:** 1413 hours      **Time Zone:** UTC  
**Highest Injury Level:** None

**Aircraft Manufacturer:** Boeing Co  
**Aircraft Model:** 747-438  
**Aircraft Registration:** VH-OJO      **Serial Number:** 25544

**Type of Operation:** Air Transport High Capacity International Passenger Scheduled  
**Damage to Aircraft:** Nil  
**Departure Point:** Los Angeles USA  
**Departure Time:**  
**Destination:** Sydney NSW

**Aircraft Manufacturer:** Douglas Aircraft Co Inc  
**Aircraft Model:** DC8-73  
**Aircraft Registration:** N796FT      **Serial Number:**  
**Type of Operation:** Commercial Unknown  
**Damage to Aircraft:** Nil  
**Departure Point:** Auckland New Zealand  
**Departure Time:**  
**Destination:** Honolulu USA

**Approved for Release:** Thursday, August 20, 1998

#### FACTUAL INFORMATION

The Boeing 747 (B747) was maintaining flight level 350 (FL350) when the crew received a traffic alert and collision avoidance system (TCAS) resolution advisory, warning of conflicting traffic crossing their track at an altitude 400 ft below. They were able to contact the other aircraft, which was a Douglas DC8 maintaining FL330 in accordance with air traffic control (ATC) instructions. Both crews were able to maintain their respective levels and no evasive action was required.



When the DC8 departed Auckland, ATC verified that the secondary surveillance radar altitude readout had correlated with the reported altitude from the crew. However, on arrival at Honolulu, ATC noted a 1,500 ft difference in the altitude reported by the crew to that showing on the radar display. The aircraft transponder was providing an erroneous altitude, but the crew had no flightdeck display to enable them to check what information the transponder was emitting.

The equipment failure had occurred between departing radar coverage at Auckland and the point at which the B747 crew received the TCAS alert.

Initial maintenance action by the company indicated a faulty encoder, but an ongoing investigation in the USA revealed that the central air data computer had been providing faulty inputs to both transponders.

#### **SAFETY ACTION**

As a result of this occurrence, the Bureau of Air Safety Investigation is investigating a perceived deficiency involving the lack of information available to flight crews regarding the serviceability of altitude encoders. In addition, the Bureau is investigating the lack of information displayed to crews regarding altitude information being transmitted by transponders.

Any recommendations issued as a result of these investigations will be published in the Bureau's Quarterly Safety Deficiency report.

