

**Aviation Safety Investigation Report
199400210**

**Boeing Co
B767
Boeing Co
B737**

27 January 1994

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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.

Occurrence Number: 199400210 **Occurrence Type:** Incident
Location: 35km NW Rockhampton
State: QLD **Inv Category:** 4
Date: Thursday 27 January 1994
Time: 1133 hours **Time Zone** EST
Highest Injury Level: None

Aircraft Manufacturer: Boeing Co
Aircraft Model: 767-338ER
Aircraft Registration: VH-OGJ **Serial Number:** 25274

Type of Operation: Air Transport High Capacity International Passenger Scheduled
Damage to Aircraft: Nil
Departure Point: Brisbane QLD
Departure Time: 0052 EST
Destination: Port Moresby PNG

Aircraft Manufacturer: Boeing Co
Aircraft Model: 737-376
Aircraft Registration: VH-TAH **Serial Number:** 23479

Type of Operation: Air Transport Domestic High Capacity Passenger Scheduled
Damage to Aircraft: Nil
Departure Point: Townsville QLD
Departure Time: 1052 EST
Destination: Brisbane QLD

Approved for Release: Monday, March 13, 1995

Synopsis.



At about 1125 EST (Eastern Standard Time), Rockhampton radar technicians requested approval from the Brisbane Area Approach Control Centre (AACC) Coordinator to close down the Mt Alma radar for five minutes, so that a noise emanating from the antenna turntable could be investigated. The Mount Alma radar near Rockhampton is the sensor used by Sector 3A to control traffic in the Sector 3 area of responsibility. The coordinator then alerted the Sector 3A radar controller to the request. The Sector 3A position was being operated by a trainee (unrated controller) under supervision. He then called the Sector 7 (Mackay) radar controller to advise him that the Sector 3 radar would be going off for 5 minutes, and requested his assistance to monitor separation while the radar was off. Subsequently, a separation breakdown occurred when the Sector 3 controller failed to adequately separate a Boeing 767 and a Boeing 737.

Traffic Disposition.

Traffic in Sector 3A area of responsibility at the time included JAL772 a Boeing 747 northbound on route Bravo 462 (B462) at Flight Level 350 (FL350), VH-OGJ a Boeing 767 northbound on the same route at FL350, 36 miles behind JAL772, and a Boeing 737 VH-TAH which was cleared to track direct from Townsville to Gladstone also at FL350. The track of VH-TAH intersected route B462 approximately 22 NM north of Rockhampton and thus there was potential confliction with VH-OGJ and JAL772.

The Sector 7 controller asked the Sector 3 controller to rectify the potential confliction with VH-TAH and to advise him when this had been done. The Sector 3 controller then turned VH-TAH right onto a heading of 190 degrees. At this time, VH-TAH was approximately 50 miles northwest of Rockhampton, JAL772 was approximately 10 miles north of Rockhampton and VH-OGJ was 32 miles South of Rockhampton. After VH-TAH and JAL772 had passed clear of each other the Sector 3 controller cleared the pilot of VH- TAH to track direct to Gladstone and to resume his own navigation. He then gave approval for the Mt Alma radar service to be turned off, and made an all stations broadcast to that effect.

At about 1130 the Sector 3 controller called the Sector 7 controller, asking him to separate two other aircraft, and advising that the radar had been switched off. The Sector 7 controller then noticed on his radar display that the tracks of VH-OGJ and VH-TAH would conflict and instructed the Sector 3 controller to immediately descend VH-TAH to FL330 and to turn VH-OGJ onto a heading of 270 degrees.

The instructions were carried out but lateral and vertical separation standards between the aircraft were broken. At approximately 1132:23 VH-OGJ passed directly over VH-TAH in the opposite direction with approximately 1,500 ft vertical separation. The minimum vertical separation required is 2,000 ft.

The pilot of VH-OGJ reported that his Traffic Conflict Alert System (TCAS) had been activated when the aircraft were closing. It indicated a vertical separation of 600 ft. The crew of both aircraft visually sighted the other as the aircraft passed.

The Sector 3 controller had neglected to arrange procedural separation of VH- TAH and VH-OGJ before allowing the radar to be turned off. The traffic conflict was recognised by the Sector 7 controller when it was too late for the Sector 3 controller to achieve a separation standard. The radar was returned to service at 1136 after no fault was found.

Flight Progress Strips



Local Operating Instructions (LOI) for Sector 3A state that, in the event of radar outage 'controllers will make up additional strips as required to highlight conflicts'. In this instance, the Sector 3A controller did not consider it necessary for procedural flight progress strips to be made up as Sector 7 would be monitoring the separation of the aircraft. In the event, the conflict might not have been overlooked if procedural strips had been available.

Traffic Management.

The pilot of VH-TAH had planned the route at FL370, a standard level for the particular route, and had been offered this flight level by ATC some minutes earlier. However he said that he was content to remain at FL350, a non standard level for aircraft on that particular track, and one which ultimately brought the aircraft into conflict with the two northbound aircraft. (The 1992 Review of the Australian Air Traffic Services System recommended greater emphasis on traffic planning and conflict avoidance, rather than encouraging situations necessitating conflict resolution).

Systemic Issues.

The occurrence raised several issues of a systemic nature which might have been relevant, such as the recently introduced teams concept, the new sectorisation of the airspace involved, the experience level and training of controllers, and standardisation. These issues were addressed in BASI Investigation Report BS/930154 - An Investigation of Systemic Factors underlying Air Safety Occurrences in the Brisbane Area Approach Control Centre.

Relevant Factors

1. The Sector 3A controller (supervisor) did not maintain adequate situational awareness of traffic in his area of responsibility.
2. The supervision of the unrated controller operating Sector 3A was inadequate.
3. The traffic was not procedurally separated before approval was given for the radar to be turned off.
4. Procedural flight strips were not prepared and placed on the flight progress board prior to the radar being turned off.

Safety Action

LOIs were amended following the incident to now require strips to be prepared and placed on the flight progress board prior to a known radar outage.
