

**Aviation Safety Investigation Report
199503423**

**Boeing Co
B747
Saab Aircraft AB
340**

09 October 1995

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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.

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: 199503423 **Occurrence Type:** Incident
Location: 18km SW Sydney
State: NSW **Inv Category:** 4
Date: Monday 09 October 1995
Time: 0848 hours **Time Zone** EST
Highest Injury Level: None

Aircraft Manufacturer: Boeing Co
Aircraft Model: 747-438
Aircraft Registration: VH-OJJ **Serial Number:** 24974

Type of Operation: Air Transport High Capacity International Passenger
Scheduled

Damage to Aircraft: Nil
Departure Point: Melbourne VIC
Departure Time: 0736 EST
Destination: Sydney NSW

Aircraft Manufacturer: Saab Aircraft AB
Aircraft Model: SF-340B
Aircraft Registration: VH-TCH **Serial Number:** 362
Type of Operation: Air Transport Domestic Low Capacity Passenger Scheduled
Damage to Aircraft: Nil
Departure Point: Sydney NSW
Departure Time: 0844 EST
Destination: Wagga Wagga NSW

Approved for Release: Thursday, April 11, 1996

Circumstances

VH-OJJ was cleared to track inbound via the 229 VOR radial, while maintaining 6,000 ft. The Approach South radar control sector controller (APP S) was processing the aircraft for landing on runway 16R. Due to operational requirements, the APP S controller delayed turning the aircraft onto a right downwind for that runway.

VH-TCH had departed runway 16R, cleared initially to climb to 5,000 ft. The Departures South radar control sector controller (DEP S) cleared the aircraft for an early right turn and unrestricted climb to its planned cruising level. The aircraft was then to be vectored left to intercept the 207 VOR radial.

A short time later, as the APP S controller was about to instruct the crew of VH-OJJ to turn downwind and VH-TCH was turning left to intercept the 207 VOR radial, the crew of VH-OJJ advised that they had received a TCAS Resolution Advisory (RA) alert.

Recorded radar information indicated that each aircraft had penetrated its respective airspace boundary buffer, and closed to within 2.5 NM while both were at 6,000 ft.

The runway 16 airspace agreement has a narrow corridor in the APP S airspace to the west of the airport. This airspace design limits the flexibility available to APP S controllers when vectoring aircraft to downwind for runway 16. The latitude that the DEP S controller may apply when turning departing aircraft onto south-westerly tracks, and providing climb, is also restricted.

Separation was not ensured before VH-TCH was cleared for an unrestricted climb. The situation was possibly worsened by the southerly wind which would have drifted VH-TCH closer to the APP S airspace boundary.

Findings

1. The unrestricted climb instruction provided to VH-TCH by the DEP S controller was premature.
2. The vectoring of VH-OJJ onto downwind for runway 16 by the APP S controller was initiated late.
3. The airspace agreement boundary for runway 16 operations did not afford adequate separation assurance.

Factors

1. The radar surveillance techniques used by both controllers were inadequate to prevent the loss of the prescribed separation standards.

Safety action

As a result of the investigation, the Bureau of Air Safety Investigation made the following interim recommendation.

IR950212

The Bureau of Air Safety Investigation recommends that Airservices Australia amend the runway 16 airspace agreement boundaries to ensure that arriving and departing aircraft cannot be on, or near, reciprocal tracks. The amendment should address excursions into either buffer area.

Airservices Australia responded to this recommendation as follows:



"A Standard Instrument Departure (SID) has been developed for non-jet southern departures which will provide greater separation assurance and reduce controller workload. At this stage we expect the new SID to be included in DAP EAST Amendment List 52.

I should, however, point out that there remains a requirement for air traffic control to apply vertical separation between departing aircraft and arriving aircraft until the departing aircraft is clear of approach airspace. Vertical separation is applied at the clearance delivery phase of flight. Jet aircraft are required to maintain 5,000' and propeller driven aircraft are required to maintain 3,000'. The need for crossovers between arriving and departing aircraft within the Sydney TMA is unavoidable."

