

**Aviation Safety Investigation Report  
199700295**

**Boeing Co  
B727  
Boeing Co  
B747**

**03 February 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.

<b>Occurrence Number:</b>	199700295	<b>Occurrence Type:</b>	Incident
<b>Location:</b>	37km W Melbourne, Aerodrome		
<b>State:</b>	VIC	<b>Inv Category:</b>	4
<b>Date:</b>	Monday 03 February 1997		
<b>Time:</b>	1908 hours	<b>Time Zone</b>	ESuT
<b>Highest Injury Level:</b>	None		

<b>Aircraft Manufacturer:</b>	Boeing Co		
<b>Aircraft Model:</b>	747-338		
<b>Aircraft Registration:</b>	VH-EBT	<b>Serial Number:</b>	23222

**Type of Operation:** Air Transport High Capacity International Passenger  
Scheduled

**Damage to Aircraft:** Nil  
**Departure Point:** Melbourne, VIC  
**Departure Time:** 1759 ESuT  
**Destination:** Bangkok, Thailand

<b>Aircraft Manufacturer:</b>	Boeing Co		
<b>Aircraft Model:</b>	727-277		
<b>Aircraft Registration:</b>	VH-ANA	<b>Serial Number:</b>	22641

**Type of Operation:** Air Transport Domestic High Capacity Passenger  
Scheduled

**Damage to Aircraft:** Nil  
**Departure Point:** Melbourne, VIC  
**Departure Time:** 1759 ESuT  
**Destination:** Adelaide, SA

**Approved for Release:** Sunday, October 5, 1997

FACTUAL INFORMATION

A Boeing 747 (B747) aircraft departed from runway 16 at Melbourne for Bangkok on climb to 3,000 ft. Runway 27 was the nominated departure runway but the aircraft required a departure from runway 16 for operational reasons. Additionally, the crew advised that they could not comply with the requirement to not exceed 250 kts below 10,000 ft. The crew of the B747 tracked the aircraft via a standard instrument departure (SID) that required them to turn right and intercept the outbound track, to the northwest of the aerodrome.

Shortly after the B747 became airborne the aerodrome controller (ADC) requested departure instructions, from the DEP N controller, for a pending Boeing 727 (B727) aircraft departure to Adelaide from runway 27. The B747 was climbing slowly and would cross the intended track of the B727. The ADC suggested to the DEP N controller that the B727 be maintained at 3,000 ft, on departure, after the crew of the B747 had been approved to, and had climbed that aircraft above 4,000 ft. However, the DEP N controller believed that the B727 would climb faster than the B747 and he intended to radar vector that aircraft behind the B727. The DEP N controller approved the departure of the B727 on the planned track. He then approved the crew of the B747 to climb to FL200 and cancelled the speed restriction. He also instructed the crew to cancel the SID and to turn left onto a heading of 270 degrees.

The DEP N controller had been operating at the console for approximately three hours. A busy traffic period had just finished and traffic numbers were reducing. Traffic levels were moderate when the B727 departed.

After the B727 departed the DEP N controller cancelled the speed restriction below 10,000 ft and approved the crew to track direct to Bordertown on climb to FL200. These measures were meant to assist in increasing the horizontal distance between the two aircraft which were on near parallel westerly tracks with the B747 to the south of the B727.

When both aircraft were approximately 20 NM to the west of Melbourne and at similar levels, the DEP N controller assessed that he could radar vector the B747 behind the B727. He instructed the crew of the B747 to turn right onto a heading of 340 degrees. As the crew was turning the aircraft, the DEP N controller observed that the separation standard of 3 NM was going to be infringed. He instructed the crew of the B747 to turn left onto a heading of 240 degrees. Both crews reported sighting the other aircraft. Separation reduced to 1.5 NM horizontally and 700 ft vertically before radar separation was re-established. There was a breakdown of separation.

## ANALYSIS

The DEP N controller did not establish vertical separation between the two aircraft before attempting to radar vector the B747 behind the B727. An instruction to the crew of the B747 to maintain a level 1,000 ft below the level of the B727 would have caused a minor delay to the climb of the B747, but would have ensured that separation was maintained.

## SIGNIFICANT FACTORS

1. The DEP N controller did not use appropriate separation assurance techniques.

