Aviation Safety Investigation Report 199700044

Boeing Co
B767
Boeing Co
B737-400

07 January 1997

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Aviation Safety Investigation Report

199700044

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:	199700044	**Occurrence Type:**	Incident
Location:	Brisbane, Aerodrome		
State:	QLD	**Inv Category:**	4
Date:	Tuesday 07 January 1997		
Time:	0753 hours	**Time Zone**	EST
Highest Injury Level:	None		

Aircraft Manufacturer:	Boeing Co		
Aircraft Model:	767-338ER		
Aircraft Registration:	VH-OGO	**Serial Number:**	25577
Type of Operation:	Air Transport Domestic High Capacity Passenger Scheduled		
Damage to Aircraft:	Nil		
Departure Point:	Cairns QLD		
Departure Time:			
Destination:	Brisbane QLD		

Aircraft Manufacturer:	Boeing Co		
Aircraft Model:	737-476		
Aircraft Registration:	VH-TJF	**Serial Number:**	24431
Type of Operation:	Air Transport Domestic High Capacity Passenger Scheduled		
Damage to Aircraft:	Nil		
Departure Point:	Cairns QLD		
Departure Time:			
Destination:	Brisbane QLD		

Approved for Release: Wednesday, October 1, 1997

ACTUAL INFORMATION

A Boeing 737 (B737) was following a Boeing 767 (B767) for arrival at Brisbane. Both aircraft were from Cairns and were being radar vectored by the Sector 3B controller. The controller was undergoing a periodic check and had seven aircraft on frequency with five being radar vectored for sequencing. The periodic check required the controller's perfomance at the position to be monitored and assessed by another rated controller (check controller).

The aircraft being vectored were in two groups that were approaching Brisbane via different reporting points; SMOKA and PERCH. There was a considerable number of radio transmissions and co-ordination calls relating to the management of the two traffic sequences. The two Boeing aircraft were the last two aircraft in the SMOKA sequence.

The controller of an adjacent sector was required, by local instructions, to establish a 20 NM trail between arriving aircraft. This controller asked the Sector 3B controller if this was required. The Sector 3B controller replied that that this was not required. Sector 3B is required to establish a 15 NM trail between aircraft by 40 NM from Brisbane.

The following B737 was maintaining a slightly higher groundspeed on descent than the B767 and the distance between the aircraft was reducing. The Sector 3B controller instructed the crew of the B767 to turn onto a heading of 090 degrees, for sequencing, which caused the aircraft to cross the intended track of the B737. The check controller assessed that the separation would be maintained and continued to monitor the Sector 3B controller's actions. The Sector 3B controller reassessed the situation and instructed the crew of the B737 to maintain FL220. The B767 was on descent to FL170 and the Sector 3B controller instructed the crew to continue descent to FL130. The controller believed that the flight profiles of the aircraft, while complying with his instructions, would achieve vertical separation of 1,000 ft between the two aircraft. This would be attained by the B767 passing through FL210 prior to the horizontal separation reducing to less than 5 NM.

A controller on an another position had been observing the situation, with the diminishing horizontal and vertical separation between the two aircraft, and queried the Sector 3B controller as to whether the latter was satisfied with the situation. The Sector 3B controller did not acknowledge this query but immediately instructed the crew of the B737 to turn right a further 10 degrees. He intended to maintain horizontal separation by vectoring the B737 behind the B767.

The check controller assessed that the horizontal separation standard would be infringed while there was no vertical separation standard being applied and instructed the Sector 3B controller to issue traffic information to the crew. The provision of traffic information was in accordance with the Manual of Air Traffic Services (MATS). The MATS states that when a separation standard does not exist and in a controller's opinion the proximity of aircraft warrants, traffic information shall be issued to the relevant crews. The crew of the B737 were aware of the B767 and had been watching the aircraft as they approached. The crew of the B737 had reduced speed and as they were discussing that separation appeared to be reducing the Sector 3B controller issued traffic information. The two aircraft passed with horizontal separation of 3.8 NM and vertical separation of 600 ft. There was a breakdown of separation.

ANALYSIS

The Sector 3B controller increased his overall workload by cancelling the requirement for the adjacent sector controller to establish all aircraft in a 20 NM trail. The establishment of a 20 NM trail by the adjacent sector controller would have assisted the Sector 3B controller in managing his workload. His level of work and complexity was compounded by having to achieve the required spacing between aircraft and to manage the two arrival sequences.

He did not recognise that the horizontal separation between the B737 and the B767 was reducing. Also, he did not employ appropriate separation assurance techniques before issuing radar vectors to the crew of the B767 that would cause that aircraft to cross in front of the B737 with minimal horizontal separation.

The intervention by another controller prompted both the Sector 3B and the check controller to act to maintain separation. However, the turn provided to the crew of the B737 was too late and the check controller was required to instruct the Sector 3B controller to pass traffic information to the crew.

The situational awareness of the crew of the B737 assisted in the safe resolution of the incident.

SIGNIFICANT FACTORS

1. The Sector 3B controller cancelled the requirement for the adjacent sector controller to establish aircraft in a 20 NM trail.

2. The Sector 3B controller did not use appropriate separation assurance techniques.

3. The check controller and the Sector 3B controller were slow to react to the reduction in separation between the two aircraft.