Aviation Safety Investigation Report 199301992

Boeing Co B747 Boeing Co B737

06 July 1993

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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:	199301992	Occurrence Type:	Incident		
Location:	Parkes				
State:	NSW	Inv Category:	3		
Date:	Tuesday 06 July	1993			
Time:	1620 hours	Time Zone	EST		
Highest Injury Level:	None				
Aircraft Manufacturer:	Boeing Co				
Aircraft Model:	737-376				
Aircraft Registration:	VH-TAJ			Serial	23484
Type of Operation:	Air Transport Scheduled	Domestic High Capacity	Passenger	Number:	
Damage to Aircraft:	Nil				
Departure Point:	Brisbane QLD				
Departure Time:					
Destination:	Adelaide SA				
Aircraft Manufacturer:	Boeing Co				
Aircraft Model:	747-438				
Aircraft Registration:	VH-OJL			Serial	25151
Type of Operation: Damage to Aircraft:	Air Transport Scheduled Nil	High Capacity Internation	nal Passenger	Number:	
Departure Point:	Sydney NSW				
Departure Time:					
Destination:	Singapore				

Approved for Release: Wednesday, October 2, 1996

Factual information

VH-TAJ and VH-OJL were tracking via crossing airways T41 and W46 respectively, VH-TAJ maintaining FL350 and VH-OJL initially maintaining FL330.

The Sydney air traffic control sector responsible for the airspace in which the aircraft were flying was being operated by a rated officer under familiarisation following a period of absence. This officer was under the supervision of a suitably rated and current training officer.

At 1557, the crew of VH-OJL reported passing PARKES with an estimate for ALBEE of 1640 and requested further climb to FL 350. This placed the aircraft in possible conflict with VH-TAJ where the two routes crossed, and the controller initially refused the request until positive separation with VH-TAJ could be assured.

The controller then consulted a lateral separation diagram for the confliction point and decided that VH-TAJ would need to exit the area of conflict before VH-OJL could be given climb. In performing this task the controller misread the reporting point name and the distance specified in the diagram. He instructed VH-TAJ to report 41 NM from reporting point T41B instead of 72 NM from T41A. As a result, the aircraft would still be within the area of conflict with VH-OJL at that point.

At 1621 the crew of VH-TAJ reported 41 NM from T41B and the controller, believing that he had established that aircraft clear of the area of conflict, immediately cleared VH-OJL to climb to FL350. As the controllers assessed the current clearances of aircraft under their control, some doubt arose as to the relative positions of VH-TAJ and VH-OJL and distance checks were implemented.

At 1622 VH-OJL reported 166 NM west of PARKES, placing the aircraft 21 NM inside the area of conflict and not yet at the crossing point.

At 1623 VH-TAJ reported 51 NM from T41B, placing the aircraft 59 NM prior to the exit point, inside the area of conflict and not yet at the crossing point. Calculations placed VH-TAJ at the crossing point at 1624, approximately two minutes ahead of VH-OJL. The point of closest contact was at about 1626 when the aircraft were approximately 10 NM apart. The required standard is 2,000 ft vertically, or one aircraft must clear the area of conflict before the other enters. In this case the area of conflict was 102 NM long on the track of VH-TAJ and 103 NM on the track of VH-OJL. As the vertical separation was less than 2,000 ft and the aircraft were still within the area of conflict, a breakdown in separation occurred.

Neither crew was informed of the situation by air traffic control, no traffic advice was given and no corrective action was implemented by the controllers. VH-TAJ was instructed to report at 72 NM from T41B, a position the controller believed was required to establish that aircraft clear of the area of conflict. In fact this was still within an area of conflict as the controller was still referring to T41B when the position required was in relation to the reporting point T41A.

VH-TAJ reported at 72 NM from T41B at 1626 and no further action was taken by air traffic control as they incorrectly believed VH-TAJ to be clear of the area of conflict.

Analysis

Having decided on the Lateral Separation diagram to use, the controller then misread the figures, transposing the 41 in the reporting point name [T41A] to the distance required and the letter A to a B. This placed VH-TAJ at a point prior to the intersection of the routes, not at the area of conflict exit point as required. Even if the controller had correctly read the 72 NM reference, the error in using B in lieu of A would have still placed VH-TAJ in the area of conflict when he gave VH-OJL climb to FL350.

After issuing climb instructions the controllers realised that an error may have been made and checked the position of the two aircraft. When this check revealed a confliction and breakdown in separation, no remedial action was taken. Three minutes elapsed before VH-TAJ reported at 72 NM from T41B but there was no advice to either crew of the confliction or the breakdown in separation. Three minutes should have been adequate time for all these actions to have been instigated.

The Lateral Separation Diagrams provided at the console were hand drawn and had many numerals, some of which refered to distance, others to reporting points. This could lead to a situation where a controller may become confused under certain workload conditions.

It was also apparent that someone had written 135 T41B on the diagram under the official position of 72 T41A. This is the same point in space but measured from the other reporting point and anecdotal evidence suggests that it is used as much as the official entry/exit point. There is no reason why this position cannot be used to calculate the area of conflict, but it is not on the official diagram.

Significant Factor

1. The controller misread the lateral separation diagram when determining the area of configuration for the two aircraft.