Aviation Safety Investigation Report 199502659

Boeing Co
B767

17 August 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.

Aviation Safety Investigation Report

199502659

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:	199502659	**Occurrence Type:**	Incident
Location:	15km N Sydney, Aerodrome		
State:	NSW	**Inv Category:**	4
Date:	Thursday 17 August 1995		
Time:	0712 hours	**Time Zone**	EST
Highest Injury Level:	None		

Aircraft Manufacturer:	Boeing Co		
Aircraft Model:	767-338ER		
Aircraft Registration:	VH-OGH	**Serial Number:**	24930
Type of Operation:	Air Transport High Capacity International Passenger Scheduled		
Damage to Aircraft:	Nil		
Departure Point:	Auckland NZ		
Departure Time:			
Destination:	Sydney Australia		

Approved for Release: Thursday, January 11, 1996

The Boeing 767 was being processed by the Approach North controller (APPN) for a visual approach to runway 16R. A clearance was issued to descend to 2500 ft, together with radar vectoring to position the aircraft for left base. At the same time a helicopter was operating in the Middle Harbour area at altitudes between 1000 ft and 1500 ft.

The Boeing was equipped with a Traffic Collision Avoidance System, version two (TCAS II). TCAS II contributes to collision avoidance protection by issuing traffic alerting and conflict resolution advice to the flight crew.

As the Boeing descended on an extended base leg the crew informed APPN that they were responding to a TCAS Resolution Advisory (RA), and had initiated a climb. Although the controller reported that the Boeing was 1000 ft above the helicopter, the crew responded with, "Roger, have 500 ft indicated". Shortly after, the pilot of the helicopter reported sighting the Boeing and indicated there was no confliction. The Boeing was instructed to descend to 1500 ft and subsequently carried out an approach and landing without further incident.

Later analysis of radar data indicated that the Boeing had been descending at approximately 1000 fpm but discontinued its descent at 2800 ft pressure altitude and commenced to climb, consistent with receiving the RA. The helicopter had been maintaining level flight at approximately 1000-1200 ft pressure altitude. At the time the crew of the Boeing initiated the climb the vertical separation with the helicopter was 1700 ft, with a horizontal separation of 1.27 NM. The minimum required separation standard was 1000 ft vertical separation or 3 NM horizontal.

Because TCAS II software cannot anticipate that an aircraft may level off, the predicted flight paths of the Boeing and the helicopter, as determined by the TCAS II software, was most likely sufficient to activate the RA. It could not be determined why the crew of the Boeing reported the helicopter being 500 ft below their aircraft, as indicated on their TCAS II cockpit display.