

**Aviation Safety Investigation Report
199302223**

**Boeing Co
B767
McDonnell Douglas Corporation
Hornet**

24 July 1993

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Sydney sector provided Brisbane sector with a radar identification of Pirate section when those aircraft were approximately 50 NM from the boundary. The leader of Pirate section then requested climb to FL 350 and, after all the appropriate coordination was carried out, this was approved by ATC.

Pirate section realised that they were making time against their flight plan and attempted to pass an amended estimate for GWYDIR to ATC. VHF communications between the aircraft and ATC were poor and, despite two or three attempts, this message was not received by ATC.

During this period the Brisbane sector controllers [procedural and radar] realised that the type of formation being used by Pirate section may involve an infringement of the 2,000 ft vertical separation standard required for the passing of the section with VH-OGD. Because of the poor communications with Pirate section, it required several transmissions to ascertain the type of formation being used and, as no definite answer was received from the crew, it was assumed that the aircraft were in Standard Formation. This meant that one aircraft could be up to 500 ft above the other and would therefore infringe the separation standard in use. Brisbane ATC decided to initiate a cruise level change to guarantee vertical separation and instructed Pirate section to descend to FL 340 with a requirement to reach that level by time 1140 hours. This instruction was acknowledged by Pirate section and complied with.

Brisbane sector had calculated the time of 1140 hours based on a time of passing which was calculated on the respective estimates at GWYDIR for both Pirate section and VH-OGD. Although GWYDIR was within radar coverage, the track that the aircraft were using left radar coverage approximately 30 NM north west of GWYDIR and therefore a procedural standard was required.

The Brisbane sector radar controller was monitoring the progress of Pirate section following the radar hand off from Sydney but did not inform the procedural controller that the section was significantly early in relation to their estimate for GWYDIR.

When Pirate section reported at GWYDIR at 1139 hours the Brisbane sector procedural controller realised that they were five minutes early and recalculated the time of passing on which the level change requirement was based. This resulted in the correct time for the Pirate section to reach FL 340 being 1137 hours and as they had not reported at that level until 1139 hours [their actual position at GWYDIR] a breakdown in separation may have occurred.

Pirate section were on radar at the time and VH-OGD appeared on the radar screen at about the same time approximately 30 NM north west of the position of Pirate section. This distance did constitute a radar standard but this could not be guaranteed until VH-OGD was identified by the radar controller [a situation that occurred after Pirate section had passed GWYDIR].

The crew of Pirate section stated that they had actually been maintaining FL 340 prior to GWYDIR and, although they cannot remember exactly how long before, it is probable that a breakdown in separation did not occur.

Significant Factors

1. The poor VHF communications between ATC and Pirate section inhibited the passing of significant operational information.
 2. The communication between the Brisbane sector radar and procedural controllers was ineffective.
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