

**Aviation Safety Investigation Report
199602870**

**Boeing Co
B737
British Aerospace Plc
BAe 146**

07 September 1996

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The crew of the BA146 requested a clearance from the Alice Springs aerodrome controller (ADC) and were cleared via ANGAS and their planned route at flight level (FL) 200. The BA146 taxied late for departure and the crew requested track shortening via the direct route to reduce the delay to the schedule. At FL200 the BA146 would leave controlled airspace at 120 NM Alice Springs (which is 60 NM from Ayers Rock). This was also the point at which the crew of the BA146 expected to commence descent to Ayers Rock.

The ADC had a flight plan for a B737 flight from Ayers Rock to Alice Springs at FL270 and he was aware of the route procedure. The B737 had earlier departed from Alice Springs, but later than scheduled. The ADC surmised that as the aircraft had departed Alice Springs late, then it would depart Ayers Rock late as well. If this was the case, the ADC assessed the BA146 and the B737 would not conflict on the direct track. Also, there was some uncertainty amongst controllers regarding which aircraft were required to track via ANGAS. The ADC understood that aircraft operating at FL200 and below could be cleared on the direct track if requested by the pilot. He recleared the crew of the BA146 to track direct to Ayers Rock at FL200.

Shortly after the BA146 departed Alice Springs the B737 taxied at Ayers Rock and requested a clearance from sector control. The clearance request for the B737 was relayed via flight service in accordance with air traffic service (ATS) procedures. Ayers Rock aerodrome is located outside controlled airspace (OCTA) and the sector responsible for the area does not have radio facilities which would enable direct speech with aircraft on the ground. The B737 crew was instructed to track from Ayers Rock to Alice Springs and to maintain FL190 due to the BA146 at FL200. The crew of the B737 was provided with traffic information on the BA146 plus other pertinent aircraft. After departing, the crew of the B737 reported to flight service that the aircraft was maintaining FL190.

Following discussion between the ADC and the sector controller, it was agreed that the B737 would be transferred to the ADC, from flight service, to obtain a clearance into controlled airspace (CTA). The sector controller concurred with the ADC's intention to clear the B737 into CTA on climb to FL270 after separating the aircraft from the BA146. The crew of the BA146 reported at 120 NM Alice Springs. At this point the BA146 was leaving CTA for OCTA and the ADC was no longer required to provide separation from other aircraft. The ADC issued traffic information on the B737 including the departure time from Ayers Rock and that it was tracking in the opposite direction on climb to FL270. He then instructed the crew to contact flight service. The ADC did not advise the crew of the BA146 that the B737 had been instructed to expect a clearance at FL190 or that aircraft's estimate for Alice Springs.

The crew of the BA146 changed to the flight service frequency and reported their position as 56 NM east of Ayers Rock, left FL200 and estimating the aerodrome at 0344 UTC. Prior to leaving CTA the crew of an IFR category aircraft is required to report position on the flight service frequency. This is to ensure that other aircraft, which may be flying in close proximity of the boundary between CTA and OCTA, can take action to avoid the aircraft leaving CTA. Alternatively, the change to the flight service frequency enables the crews of any potentially conflicting aircraft to converse and arrange their own separation. Also, the crew of an aircraft which intends to change level OCTA is required to report the intended change to flight service one minute prior to commencing the change of level. Again, this is to ensure that other aircraft which may conflict have time to avoid or to arrange separation from the aircraft changing level. The crew of the BA146 did not complete either of these actions before leaving CTA or descending from FL200.



The BA146 crew advised flight service that they had traffic information on the B737 on climb to FL270. Flight service immediately advised the crew that the B737 was on climb to amended level FL190. The BA146 crew asked whether the B737 had departed Ayers Rock. Flight service advised the departure time of the B737, that the aircraft was maintaining FL190 and that the B737 crew was operating on the flight service frequency. The BA146 crew then transmitted that they had left FL180. The two crews subsequently advised their respective distances from Ayers Rock which indicated they were 10 NM apart and yet to pass each other. The crew of the BA146 had descended their aircraft through the level of the B737 prior to establishing the relative positions of the two aircraft.

There was no breakdown in separation.

ANALYSIS

After falling behind schedule, the crew of the BA146 requested air traffic control approval to track direct to Ayers Rock in an endeavour to make up time. This request was contrary to the preferred routing detailed in ERSA. The crew were aware that the diversion route was implemented to minimise the potential for conflict between aircraft operating between Alice Springs and Ayers Rock. However, they felt that the commercial interests of the airline would be better served in regaining the schedule. They did not give due consideration to the flight safety aspects inherent in their decision.

The ADC was unsure of the correct procedure regarding which flights could operate on the direct track from Alice Springs to Ayers Rock. This was despite the fact that the ERSA stated that the preferred route for aircraft operating between Alice Springs and Ayers Rock was via ANGAS. He assessed that the B737 would not conflict with the BA146 but he had no means to ensure that this remained the situation; especially during the period of each aircraft's flight outside controlled airspace. Use of the diversion route via ANGAS by the BA146 would have ensured that the two aircraft did not conflict outside controlled airspace.

The ADC did not provide accurate traffic information to the crew of the BA146 before the aircraft left CTA. The advice that the B737 was to climb to FL270 may have led the crew of the BA146 to expect that the B737 would be above their level before they left CTA. Also, the ADC did not advise the crew of the BA146 of the B737's estimate for Alice Springs. Provision of this information would have enabled the crew of the BA146 to estimate the time they would pass the B737 which would have assisted them in assessing the potential for conflict OCTA.

The inaccurate traffic information provided by the ADC about the B737 may have lulled the crew of the BA146 into thinking that there was no likelihood of conflict OCTA. Consequently, they may not have been as vigilant in their adherence to procedures as usual. The lack of the report by the BA146 crew, on the flight service frequency, at least one minute prior to commencing descent was a failed defence for the safe conduct of the flight. A second failed defence was the lack of the transmission of a position report on the flight service frequency prior to leaving CTA. Had the crew of the BA146 made either of these reports there was every possibility that the crew of the B737 would have transmitted their position details. This would have alerted the crew of the BA146 to the fact that the two aircraft may conflict once their aircraft descended and the two crews could have arranged appropriate separation.

SIGNIFICANT FACTORS

1. The crew of the BA146 requested the direct track contrary to the preferred routing instructions in the ERSA.
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2. The ADC was not sure of the requirements relating to aircraft tracking to/from Ayers Rock.
3. The ADC did not provide adequate traffic information to the crew of the BA146.
4. The crew of the BA146 did not comply with radio reporting procedures detailed in AIP

SAFETY ACTION

Local safety action

1. Airservices Australia issued a temporary local instruction to air traffic controllers instructing that aircraft operating between Alice Springs and Ayers Rock at altitudes above 10,000 ft, and intending to land at Ayers Rock, are to be cleared via ANGAS unless weather conditions preclude the use of the track.
2. The operator of the BA146 issued two notices to pilots. The first notice clarified the radio procedures to be used by pilots when operating in CTA prior to descending OCTA. The second notice instructed pilots that they must track via ANGAS (unless ATC requires alternative routing) and also reminded them of the requirement to report to flight service prior to leaving CTA.

