Aviation Safety Investigation Report 199402178

Boeing Co
B737

03 August 1994

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Aviation Safety Investigation Report

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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:	199402178	**Occurrence Type:**	Incident
Location:	Canberra		
State:	ACT	**Inv Category:**	4
Date:	Wednesday 03 August 1994		
Time:	1710 hours	**Time Zone**	EST
Highest Injury Level:	None		

Aircraft Manufacturer:	Boeing Co		
Aircraft Model:	737-377		
Aircraft Registration:	VH-CZI	**Serial Number:**	23661
Type of Operation:	Air Transport Domestic High Capacity Passenger Scheduled		
Damage to Aircraft:	Nil		
Departure Point:	Sydney NSW		
Departure Time:			
Destination:	Canberra ACT		

Approved for Release: Wednesday, December 20, 1995

VH-CZI was a substitute aircraft for VH-CZC which had been originally planned to operate the flight Sydney to Canberra. Because no modification message had been originated, the Canberra aerodrome controller (ADC) was neither expecting a call from, nor held a flight progress strip (FPS) for, VH-CZI.

The Canberra approach (APP) controller, located in the Melbourne Area Approach Control Centre (AACC) since July 1994, attempted a voice co-ordinated hand-off of VH-CZI to the ADC at approximately 30 nautical miles (NM) from Canberra. The ADC was busy on another task at the time so he instructed APP to standby. APP terminated the Canberra call and dealt with other traffic co-ordination. Although the hand-off of VH-CZI was not completed, the FPS was annotated as though the co-ordination had been completed, without restrictions imposed by the ADC. APP continued processing VH-CZI for a visual right circuit for runway 35 at Canberra in the normal manner. About this time there was a change of ADC personnel and neither the uncompleted co-ordination exchange nor the presence of VH-CZI entering the circuit area were noted.

APP then transferred VH-CZI to the Canberra ADC frequency, but the aircraft had a minor radio problem during the transfer which did not significantly affect the actual frequency transfer. Subsequently, the first communication from the aircraft to the ADC was in the nature of a radio communications check, rather than a normal base report and was insufficient to cause any concern. The call could have had its origins from the aircraft located anywhere within VHF range of the ADC frequency such as would occur from an aircraft within approximately 200 NM if overflying at high level. The initial radio check call was then followed by a call which alerted the ADC that VH-CZI was in fact on right base for Canberra runway 35. Until that time, neither the former nor latter ADC had been aware of VH-CZI.

Hard copy departure (DEP) messages are required to be originated for all regular public transport (RPT) flights. Sometimes the DEP messages are delayed to the extent that voice co-ordination occurs first due to the short flight time involved between Sydney and Canberra. On this occasion, a modification (CHG) message, advising of the aircraft substitution, should have been generated when first advice was received. But this was not done, presumably because of either the short flight time intervals or the intention to include the CHG information in the DEP message. It is standard operating procedure (SOP) for APP to co-ordinate estimated times of arrival (ETA) to the ADC for all arriving aircraft with a flight time of 30 minutes or less, unless a hard copy message has been generated.

The SOPs also prescribe that inbound aircraft are transferred from APP to ADC at about 40 NM, where aircraft normally become visible on the ADCs non labelled radar display. In the prevailing visual conditions APP was required to obtain any restrictions for further descent for inbound aircraft from the ADC. At the time of the incident, there was no standard phraseology indicating absence of a descent restriction. This situation has since been rectified by the Civil Aviation Authority.

New technology radar facilities with jurisdictional label displays are programmed for commissioning in the Canberra control tower early in 1995. Provision of new radar facilities will not remove the necessity for failsafe transfer of jurisdiction SOPs between APP and ADC because of the requirements for the ADC to maintain continuous visual surveillance of circuit traffic.

CONCLUSIONS

Findings

1. A modification message advising of the aircraft substitution was not originated.

2. The approach controller terminated the co-ordination call and then incorrectly notated the flight progress strips to indicate that transfer of jurisdiction was completed.

3. Neither the uncompleted co-ordination nor the presence of the aircraft entering the circuit area were detected during the transfer of responsibilities between the aerodrome controllers.

4. The first communication from VH-CZI to Canberra tower was insufficient to alert the controller to the presence of the aircraft in the circuit area.

5. The standard operating procedures prescribed for jurisdiction transfers were not failsafe.

SIGNIFICANT FACTORS

The following factors were considered relevant to the development of the incident:

1. There were inadequate back-up procedures to prevent degradation of system safety levels caused by delays or omissions in generating hard copy modification and departure messages.

2. The existing control tower radar display facilities and co-ordination procedures were inadequate to alert the controller/s to the inbound aircraft.

SAFETY ACTION

As a result of this investigation the Civil Aviation Authority has introduced standard phraseology for co-ordination exchanges where descent restrictions have not been imposed.

As a result of this investigation, the Bureau established that pending system changes by the Civil Aviation Authority would provide fail safe back-up procedures to prevent similar occurrences caused by delays or omissions in generating hard copy modification and departure messages. The outcomes of the system changes would be monitored for effectiveness by both organisations.