Aviation Safety Investigation Report 199601944

Boeing Co
B747

26 June 1996

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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

199601944

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:	199601944	**Occurrence Type:**	Incident
Location:	Modbury, Locator		
State:	SA	**Inv Category:**	4
Date:	Wednesday 26 June 1996		
Time:	0822 hours	**Time Zone**	CST
Highest Injury Level:	None		

Aircraft Manufacturer:	Boeing Co		
Aircraft Model:	747-400		
Aircraft Registration:	VR-HOU	**Serial Number:**	
Type of Operation:	Air Transport High Capacity International Passenger Scheduled		
Damage to Aircraft:	Nil		
Departure Point:	Hong Kong		
Departure Time:			
Destination:	Adelaide SA		

Approved for Release: Thursday, July 18, 1996

Approaching Adelaide, the aircraft made numerous diversions from track to avoid weather. On first contact with Adelaide approach, the pilot reported "....taking up a heading of 205 to intercept the localiser for runway 23, descending to 5000" The pilot was instructed to "...maintain 5000 make pilot intercept of the localiser, at this stage expect one holding pattern at Modbury". The holding pattern was required for separation with other traffic.

The controller stated that the aircraft intercepted the runway 23 localiser beyond 20 NM from Adelaide. When the aircraft was approximately 17 NM from Adelaide, the controller advised the pilot "...cancel the holding and expect ILS approach, descend to 3000". The pilot then requested confirmation they were cleared for an ILS approach. The controller instructed the aircraft to "...descend to 2000 on the ILS" and a readback of that instruction was obtained.

A short time later the pilot reported maintaining 2000 ft. The pilot was instructed to maintain 2000 ft and was then asked if they were visual. The pilot confirmed that they were visual and the aircraft was then cleared to continue on a visual approach to runway 23.

Recorded radar data showed that the aircraft made a continuous descent from 5000 ft to 2000 ft and passed through 3000 ft at approximately 13 miles from Adelaide. The aircraft reached 2000 ft at approximately 10 miles from Adelaide. The Adelaide control zone extends to 11 miles from Adelaide on the runway 23 localiser and from 11 miles to 20 miles the lower limit of controlled airspace is 2500 ft. The descent profile depicted in the recorded radar data suggests that the aircraft was probably below the 2500 lower limit of controlled airspace for a few seconds prior to entering the control zone.

The captain advised that they were using Jeppesen charts and the runway 23 ILS chart has a note which says that aircraft arriving from the northwest may be radar vectored to intercept the localiser at 2000 ft. The captain said that when they were cleared to descend to 2000 ft they were established on the localiser and both flight crew members thought they were cleared down to 2000 ft at that time. They had obviously misinterpreted the intent of the instruction. He also pointed out that it is not normal to have a descent restriction imposed once cleared for an ILS approach.

The captain said that cockpit workload was high at the time in that the aircraft was being controlled by the flight management system for an automatic ILS approach. Both glide slope and localiser had been captured and when the holding requirement was imposed, this created a potential extra workload in reprogramming the flight management system to get out of the approach mode and set up for a holding pattern. Fortunately the holding requirement was later cancelled.

Factors

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

1. The flight crew misinterpreted an instruction from air traffic control.

2. There was a high workload in the cockpit at the time.

3. The air traffic controller did not notice the aircraft continue its descent below 3000 ft and in fact did not become aware the aircraft had reached 2000 ft until the pilot reported at 2000 ft.

4. The instruction given by the air traffic controller to "... descend to 2000 on the ILS", although correctly read back by the pilot, was open to misinterpretation.

Safety action

The controller was counselled concerning the phraseology of the instruction he gave to the aircraft. The captain was apprised of the situation from the air traffic controller's viewpoint and a cassette tape of recorded communications relevant to the incident was sent to him for review.