Aviation Safety Investigation Report 199600613

Boeing Co B747

**27 February 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.

<b>Occurrence Number:</b>	199600613	Occurrence Type:	Incident	
Location:	18km W Sydney, Aerodrome	;		
State:	NSW	Inv Category:	4	
Date:	Tuesday 27 February 1996			
Time:	0900 hours	Time Zone	ESuT	
Highest Injury Level:	None			
Aircraft	Boeing Co			
Manufacturer:				
Aircraft Model:	747SP			
Aircraft Registration:	B2442E			Serial
				Number:
Type of Operation:	Air Transport Domestic High Capacity Passenger			
	Scheduled			
Damage to Aircraft:	Nil			
<b>Departure Point:</b>	Melbourne VIC			
<b>Departure Time:</b>				
Destination:	Sydney NSW			
Crow Dotails.				

**Crew Details:** 

	Hours on			
Role	<b>Class of Licence</b>	Туре Н	ours Total	
Pilot-In-Command (AICUS)	ATPL	7000.0	14000	
Co-Pilot/1st Officer	ATPL	9000.0	14000	

## Approved for Release: Friday, October 4, 1996

The foreign registered Boeing 747SP was on a flight from Melbourne to Sydney, and was under the control of Sydney Approach (APP). Whilst being radar vectored for an extended downwind leg to runway 16R, the aircraft was issued with a clearance to descend to 5,000 ft, which was read back by the flight radio operator. The controller then instructed the crew to change radio frequency, and re-confirmed the cleared altitude as 5,000 ft. The weather at Sydney was CAVOK.

The aircraft was subsequently observed on radar to descend to 2,600 ft, while on the downwind leg. Several attempts by the controller to contact the aircraft were unsuccessful. At about this time, the altitude readout of the aircraft's transponder ceased to be visible on the radar screen, with only primary returns being received.

About 2.5 minutes later, the Approach controller re-established radio contact and instructed the aircraft to climb to 3,000 ft, at which point the altitude readout re-appeared on the radar screen. The aircraft was then processed for a landing without further incident. The Approach controller subsequently reported that he had re-confirmed the instruction to descend to 5,000 ft because he was unsure the crew had understood the clearance.

For international operations the airline concerned delegates the responsibility for all English language radio transmissions to a flight radio operator. The radio operator on this flight had accumulated some 25 years experience, including several flights into Sydney over the last seven years. When the flight radio operator read back "five thousand" on the second occasion, the controller was satisfied that the clearance had been understood. Recorded radio communications confirmed that the controller had used correct radio phraseology and that the flight radio operator had correctly read back the descent clearance.

It was later found that the flight radio operator believed the instruction had been to descend to "two five thousand", which he initially interpreted as 25,000 ft, although the aircraft had already descended to 6,000 ft. He chose not to question the clearance as he rationalised the controller had meant 2,500 ft. He called out "two thousand five hundred" to the non-handling pilot, who entered these numbers in the altitude select window on the mode control panel. When the controller issued the frequency change, and confirmed the descent clearance, the flight radio operator believed that 5,000 ft was the altitude at or below which the frequency change was to be made. All crew members on the flight deck were listening on headphones at the time of the occurrence and said they were somewhat confused by the clearance instruction, but chose not to query it.

## SAFETY ACTION

As a result of the investigation, the Bureau issued the following Interim Recommendation to Airservices Australia on 17 July 1996:

## "IR960050

The Bureau of Air Safety Investigation recommends that Airservices Australia amend radiotelephony phraseology in the Australian Manual of Air Traffic Services and Aeronautical Information Publication to eliminate the possibilities for misunderstanding in the use of the word "to" in climb/descent instructions."

On 27 August 1996, Airservices Australia responded as follows:

"Reference is made to BASI Air Safety Interim Recommendation No. IR960050 relating to the use of the word "to" in climb/descent instructions.

This matter has been widely debated in a number of workshops held with the aviation industry, Defence and CASA during the review of phraseologies used in Australia. In the interests of international harmonisation and in concert with our agreed position with Australian aviation interests, Airservices will continue to align with ICAO and retain the use of the word "to" with level change instructions. Use of the word "to" in this context is consistent with ICAO Doc 4444, PANS RAC, Part IX Phraseologies Section 3, paragraph 3.1 .2.

Given the need for clarity in communications and to reinforce the point made by ICAO at Part IX, paragraph 2.1 " ATS personnel and other ground personnel will be expected to use appropriate subsidiary phraseologies which should be as clear and concise as possible and designed to avoid possible confusion by those persons using a language other than one of their national languages", the Bureau's Interim Recommendation has been forwarded to our ATS Training Section for further action.

With regard to the publication of instrument approaches on charts to assist VFR pilots, as discussed in IR 950206, I understand that CASA is in the process of reviewing this recommendation. In addition, publication of instrument approaches on charts is currently under discussion in the Airspace 2000 proposals on pages 36 and 68 of the document titled "Airspace 2000 - A Plan for the Future Management of Australian Airspace"."

The response has been classified as OPEN.