Aviation Safety Investigation Report 199602336

Boeing Co
B747

26 July 1996

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Occurrence Number:	199602336	**Occurrence Type:**	Incident
Location:	Sydney, Aerodrome		
State:	NSW	**Inv Category:**	4
Date:	Friday 26 July 1996		
Time:	0655 hours	**Time Zone**	EST
Highest Injury Level:	None		

Aircraft Manufacturer:	Boeing Co		
Aircraft Model:	747-400		
Aircraft Registration:	G-BNLN	**Serial Number:**	
Type of Operation:	Air Transport High Capacity International		
Damage to Aircraft:	Nil		
Departure Point:	Sydney		
Departure Time:	0653 EST		
Destination:	Brisbane		

Approved for Release: Monday, January 20, 1997

FACTUAL INFORMATION

The crew of an international Boeing 747 (B747) had submitted a flightplan to fly from Sydney to Brisbane. Prior to taxi the crew requested a clearance from the Departure Procedural (DEP P) controller and were issued with a West Maitland (WMD) 7 standard instrument departure (SID). The WMD 7 SID can be used for a departure from either runway 16L, 34L or 07, but not from runway 16R. The duty runways had changed to 16L and 16R about 5 minutes prior to the crew requesting the clearance. Previously, runway 34L was nominated for departures.

The DEP P controller was busier than normal due to problems with an airline computer that issued flightplans for company aircraft. He was having to delay the issue of clearances to crews until the flightplan was obtained. When the runway changed from 34L, to 16L and 16R for departures, he couldn't be sure that he had changed the clearance labels on the flight progress strip bays. Also, the DEP P controller did not have time to check clearances on the previously issued flight progress strips because of the flightplan problems.

Generally, after a runway change, the tower would check with the DEP P controller to confirm if any aircraft required new clearances. This action by the tower is not a requirement but is carried out by the majority of controllers in an endeavour to ensure that aircraft which received a clearance before the runway change are in receipt of a clearance compatible with the new runway. During this incident the tower did not confirm the clearances with the DEP P controller after the change in runways.

The clearance was annotated on the departure flight progress strip and ticked as being read back correctly by the crew. The DEP P controller then passed the flight progress strip to the departure north radar (DEP N) controller in readiness for the departure request from the aerodrome controller (ADC). The clearance issued to the B747 was not notified to the tower controllers. To reduce coordination between the tower and DEP P, the tower controllers assume jet aircraft are issued with an appropriate clearance for the runway and destination. Controllers were aware that occasionally the incorrect SID was issued; however, the error was usually detected by the radar controller or the flight crew, prior to the aircraft departing, when they realised that the assigned departure clearance and runway were incompatible.

The crew requested and was issued with a taxi clearance approximately 15 minutes later. The taxi clearance was for runway 16R. The crew were aware that the issued SID was not applicable for a departure from runway 16R but believed that air traffic control (ATC) would not issue an incorrect SID. The crew did not clarify with ATC the use of the WMD 7 SID with runway 16R.

The crew reported ready for departure to the ADC. In turn, the ADC advised the DEP N controller that the B747 was ready for departure from runway 16R and requested departure instructions. The DEP N controller notified the ADC that the B747 was "Unrestricted". That is, there were no conflictions with other traffic and the aircraft could depart in accordance with the issued SID. The DEP N controller did not detect the incorrect SID annotated on the flight progress strip as he issued departure instructions to the ADC. The DEP N controller did not further annotate the flight progress strip to indicate that the B747 had been issued with an unrestricted departure clearance. This annotation was required by the Manual of Air Traffic Services (MATS).

The ADC then instructed the crew that the B747 was cleared for take-off. The B747 departed from runway 16R and tracked in accordance with the SID, which required the aircraft to turn left. The B747 crossed the departure path of runway 16L. The ADC observed the B747 as it turned left and immediately notified the DEP N controller that the aircraft was turning left across the departure path of runway 16L. At the same time the crew of the B747 had contacted the DEP N controller, but they did not read back the assigned altitude. As the DEP N controller checked the flight progress strip to confirm the terms of the clearance he saw that the crew had been issued with the incorrect SID. The DEP N controller confirmed with the crew that they were tracking via the WMD 7 SID. After ensuring there were no conflictions with other traffic he cancelled the SID and re-cleared the crew to track direct to Coolangatta then Brisbane.

There was no aircraft departing from runway 16L at the time.

ANALYSIS

The DEP P controller problems with the flightplans, his probable failure to amend the clearance labels on the flight progress strip bays, his inability to check clearances on the strips issued to the two departure radar controllers and the towers lack of a request to confirm the clearances for aircraft that had taxied prior to the change in runway, did little to reinforce the change of runways in his mind. It is possible that the culmination of these events was to remove the physical and mental cues that normally assist controllers to remember changes. Consequently, he inadvertently issued a runway 34L SID to the crew of the B747.

The DEP N controller's reading of the flight progress strip should have detected the incorrect SID. The controller may have checked the flight progress strip but misread, or did not appreciate the clearance annotation due to an expectation of another clearance.

The crew of the B747 knew the clearance was not suitable for the assigned runway yet continued the flight without clarifying the situation with ATC. A major safety aspect of the aviation system is the regular communication between flightcrew, groundcrew and air traffic services personnel to ensure all parties understand the others intention. In this incident the flightcrew, when faced with the incorrect SID, explicitly trusted ATC when they should have sought clarification.

The SIDs can be grouped according to the planned enroute track and there are a number available for aircraft to depart to the north, west and south. Some of these SIDs are common to both runway 16R and 34L. For example, heavy aircraft departing either to the south or to the west can be issued with a SID which is applicable for both runway 16R or 34L. However, for departures to the north there is no similar runway common SID. There is a specific SID for runway 34L but there are no SIDs for runway 16R. Consequently, northbound heavy category aircraft requiring the use of runway 16R/34L must be issued with a new clearance when the runway is changed. Alternatively, the aircraft can be issued with a standard radar departure (SRD) which is applicable for departures from either runway.

Amendment of the SIDs to provide a common clearance for northbound aircraft for use with either runway 16R or 34L would reduce the possibility for error by controllers and flightcrew. The use of the common runway 16R/34L SRD for all northbound heavy category aircraft would also reduce the possibility of future errors.

SIGNIFICANT FACTORS

1. The DEP P controller inadvertently issued the incorrect clearance to the crew of the B747.

2. The crew of the B747 did not clarify the issued clearance with air traffic control.

3. The DEP N controller did not notice that the clearance on the departure flight progress strip was incorrect.

4. The was no common SID for use with either runway 16R and 34L for northbound heavy category aircraft departures.

SAFETY ACTION

Local safety action

As a result of problems with SIDs and other departure clearances, Airservices Australia has initiated a review of Sydney departure procedures.