

INCIDENT

Aircraft Type and Registration: Airbus A300B4-603, D-AIAR

No & Type of Engines: 2 CF 6-80C2A3 turbofan engines

Year of Manufacture: 1990

Date & Time (UTC): 12 May 1995 at 0829 hrs

Location: London Heathrow Airport

Type of Flight: Public Transport

Persons on Board: Crew - 2 + 8 Passengers - 170

Injuries: Crew - None Passengers - None

Nature of Damage: None

Commander's Licence: Airline Transport Pilot's Licence

Commander's Age: 45 years

Commander's Flying Experience: 13,000 hours (of which 2,500 were on type)
Last 90 days - 200 hours
Last 28 days - 65 hours
Previous rest period - 36 hours

Information Source: AAIB Field Investigation

Synopsis

The incident occurred when a Lufthansa A300-600, using the callsign DLH 4043, took off without take-off clearance, from a lined-up position on Runway 09R. When airborne, the A300 passed above and behind two ground vehicles which had just crossed the runway, south to north at Block 83, and a taxiing B747 which had also just crossed the runway, north to south at Block 85. Both the ground equipment and the B747 were physically clear of the runway, though neither had called "runway vacated".

History of the flight

The Lufthansa aircraft had arrived at the back of a queue at the holding point for Runway 09R. For some of the previous departures, the Standard Instrument Departure (SID) altitudes had been amended because of a special flight in the area. Those ahead of the Lufthansa, to whom it applied, were

individually instructed by ATC to maintain 3,000 feet after takeoff until further advised. This was followed by an instruction to line-up and they were then given take-off clearance.

The Aerodrome Departure Control frequency was busy during this period and a transcript of the RT messages preceding the incident is given at the end of this report.

The Lufthansa aircraft had not been given an amended SID by the time that it lined up on the runway. The crew therefore no longer expected one and, believing that the next transmission to them, shown in the transcript, constituted their take-off clearance, acted accordingly. Several seconds later, whilst accelerating to a speed around 100 kt, the crew saw the runway crossing traffic and decided, as there was ample room either to abandon the take-off or continue it in safety, that the better option was to continue. The aircraft passed above and behind the obstructions and, when they commented to ATC that to clear them for takeoff whilst ground traffic was crossing the runway was not a good idea, they were told that take-off clearance had not been given. They apologised to ATC and later, on return to London, visited ATC to discuss the incident. On hearing the playback of the ATC recorded tape, they agreed that the mistake had been theirs.

Analysis

There have been five previous similar occurrences at major UK airports since 1990 and there is no common factor between all six events, although the two previous occurrences at Heathrow appear to have resulted from the crew not hearing an instruction. Nevertheless, considering the density of traffic, and many pilots who do not have English as their first language, it is a credit to both the controllers and the operators that so few similar events have occurred.

On this occasion, as the ATC recording shows, there is no doubt that the crew were mistaken in their interpretation of the final message from ATC. The message was quite clear and, despite two small and immediately corrected errors in the text, it is not considered that the controller contributed to the build-up of the incident. There must therefore be another reason for the misinterpretation of this ATC message.

English is not the first language of the crew involved and, although their command and use of that language is almost perfect, the speed of delivery and the density of the RT traffic at this particularly busy time was such that total comprehension must have been difficult.

It was not known by the aircrew how long the temporary restriction to the SID was going to continue. Based upon the order of the instructions given to the preceding aircraft (SID amendment, then line-up, then take-off), there was little reason for the Lufthansa crew to expect an altitude restriction if one had not already been given by the time their aircraft was lined up. They therefore expected that, having

lined up, their next instruction would be to take off. This expectation was aurally reinforced by the sequence of the RT instructions mentioned above and the repeated message, to the aircraft behind them, referring to the departure of the Lufthansa A300. It was also visually reinforced, by the sight of each aircraft ahead lining up and, almost immediately, taking off. In the context of a fast moving queue for take-off, the Lufthansa crew were further primed, when they had lined up, by seeing the aircraft ahead of them lift off.

The problem of 'expectation' influencing what is heard on the RT is well recognised: Often, what is heard is what was expected rather than what was actually said. This may lead to deviations from what was anticipated either being not noticed or being interpreted in a manner which fits the expectation. Thus, although the transmission to the crew of DLH 4043 did not contain clearance for takeoff, so strong was the crew's expectation of the contents of the next message from ATC, that they heard it as take-off clearance and acted accordingly.

		TOWER	
		BAMA	
		TOWER	
		TOWER	
		TOWER	
		TOWER	
		TOWER	
		TOWER	
		TOWER	
		TOWER	
		TOWER	
		TOWER	
		TOWER	
		TOWER	

**EXTRACT FROM HEATHROW AERODROME DEPARTURE CONTROL RT
TRANSCRIPT**

TIME	TO	FROM	INFORMATION
0827:24 ---	EIN 153	TOWER	SHAMROCK ONE FIVE THREE CONTACT HEATHROW ONE THREE FOUR DECIMAL NINE SEVEN
	TOWER	EIN 153	ONE THREE FOUR NINE SEVEN ONE FIVE THREE
	BAW 676	TOWER	SPEEDBIRD SIX SEVEN SIX CLEARED TAKE-OFF NINE RIGHT THE WIND IS NORTHERLY TEN
	TOWER	BAW 676	CLEARED FOR TAKE-OFF SPEEDBIRD SIX SEVEN SIX
	DHL 4043	TOWER	LUFTHANSA FOUR ZERO FIVE THREE LINE-UP NINE RIGHT (Incorrect flight number used)
	TOWER	DHL 4043	LUFTHANSA FOUR ZERO FOUR THREE LINE-UP NINE RIGHT
	BMA 5EV	TOWER	MIDLAND FIVE ECHO VICTOR WHEN THE LUFTHANSA 'A' THREE HUNDRED DEPARTS LINE-UP NINE RIGHT
			MIDLAND FIVE ECHO VICTOR WHEN THE LUFTHANSA 'A' THREE HUNDRED DEPARTS LINE-UP
One Continuous transmission	TOWER	BMA 5EV	WHEN THE LUFTHANSA DEPARTS ER LINE-UP MIDLAND FIVE ECHO VICTOR
	BAW 284	TOWER	SPEEDBIRD TWO EIGHT FOUR AFTER THIS DEPARTING BRITISH AIRWAYS SEVEN FIVE SEVEN CROSS NINE RIGHT
	TOWER	BAW 284	AFTER THE BRITISH AIRWAYS SEVEN FIVE SEVEN TAKING- OFF NOW CROSS NINE RIGHT SPEEDBIRD TWO EIGHT FOUR
	LEADER 8	TOWER	LEADER EIGHT PLUS ONE AFTER THE DEPARTING BRITISH AIRWAYS SEVEN FIVE SEVEN CROSS NINE RIGHT
	TOWER	LEADER 8	BRITISH AIRWAYS SEVEN FIVE SEVEN LEADER EIGHT PLUS ONE
	DHL 4043	TOWER	LUFTHANSA FOUR ZERO FIVE THREE CORRECTION TO THAT ER LUFTHANSA FOUR ZERO FOUR THREE NOT ABOVE ER FOUR THOUSAND FEET TILL ER CORRECTION THREE THOUSAND FEET TILL ADVISED BY LONDON CONTROL
	TOWER	DHL 4043	LUFTHANSA FOUR ZERO FOUR THREE NOT ABOVE THREE THOUSAND TILL ADVISE-
--- 0828:30			-----(continuing transmissions)..... -----