

British Aerospace HS.748 Series 2A, G-BGMN

British Aerospace HS.748 Series 2A, G-BGMN, Piper PA-31-350, Navajo Chieftain, G-LIDE

AAIB Bulletin No: 5/2004	Ref: EW/G2003/11/07	Category: 1.1 1.2
INCIDENT		
Aircraft Type and Registration:	i) British Aerospace HS.748 Series 2A, G-BGMN ii) Piper PA-31-350, Navajo Chieftain, G-LIDE	
No & Type of Engines:	i) 2 Rolls-Royce Dart 534-2 turboprop engines ii) 2 Lycoming LTIO-540-J2BD piston engines	
Year of Manufacture:	i) 1979 ii) 1978	
Date & Time (UTC):	12 November 2003 at 1004 hrs	
Location:	Ronaldsway Airport, Isle of Man	
Type of Flight:	i) Training ii) Public Transport	
Persons on Board:	i) Crew - 2 ii) Crew - 1	Passengers - None Passengers - 2
Injuries:	i) Crew - None ii) Crew - None	Passengers - N/A Passengers - None
Nature of Damage:	i) None ii) None	
Commander's Licence:	i) Airline Transport Pilot's Licence ii) Commercial Pilot's Licence	
Commander's Age:	i) 57 years ii) 27 years	
Commander's Flying Experience:	i) 7,800 hours (of which 2,800 were on type) Last 90 days - 90 hours Last 28 days - 20 hours ii) 969 hours (of which 588 were on type) Last 90 days - 79 hours	

	Last 28 days - 40 hours	
Information Source:	Aircraft Accident Report Forms submitted by the pilots	

Summary

An HS.748 was carrying out pilot training at Ronaldsway Airport on the Isle of Man. The duty runway was Runway 26 but the training required a simulated Engine Failure After Take Off (EFATO) for which Runway 21 was used. A PA-31 had been cleared to Holding Point A4 but as the HS.748 carried out its take-off run, the PA-31 taxied past the A4 hold, stopping some 20 to 30 feet short of Runway 21.

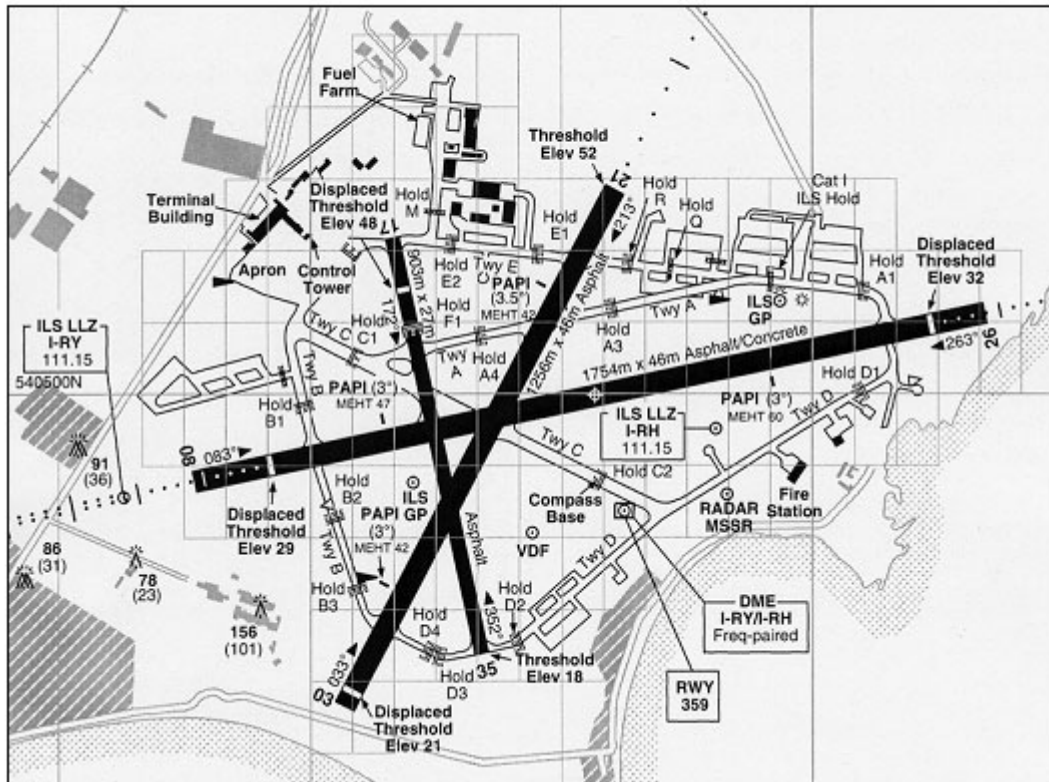
History of the Flight

The weather at Ronaldsway was: surface wind 270°/10 kt, visibility greater than 10 km, no significant weather, cloud FEW at 1,200 feet, temperature +11°C and dew point +7°C.

The aircraft commander of the HS.748 was an experienced training captain who was conducting the instrument section of the Licence Proficiency Check (LPC) on a First Officer (FO) who had 1,100 hours flying experience on the type. In order to carry out the simulated EFATO required for the test, Runway 21 was used in order to avoid the congested area at the western end of Runway 26 which was the duty runway. The HS.748 taxied along Taxiway Echo to Holding Point Echo 1 in readiness for departure. The take-off procedure was for the training captain, in the left pilot's seat to carry out the initial part of the take-off run by setting the power and maintaining directional control using the nosewheel steering tiller. At 60 KIAS control was passed to the FO who then carried out the takeoff with a training V_1 of 90 kt and V_r of 100 kt.

The PA-31 was parked to the north-west of Hangar 2 in the vicinity of the fuel farm marked near the top of the airfield map shown at Figure 1. The commander of the PA-31 was to undertake an IFR charter flight from Ronaldsway to Liverpool with two passengers and 100 kg of freight. Having boarded the passengers and freight, he copied the ATIS which gave Runway 26 as the duty runway and the weather as described above. He expected to be given a taxi clearance via Taxiway A for Runway 26, which would be his departure runway.

Figure 1: Ronaldsway Airport

Figure 1 Ronaldsway Airport

When he was ready to taxi, the commander contacted ATC on the tower frequency and was given a clearance to "TAXI TO ALPHA 4 VIA 17 AND ALPHA" which he read back correctly. The commander of the HS.748, who had been cleared to move from Holding Point Echo 1 to backtrack and line up on Runway 21 monitored the PA-31's clearance. At that point the PA-31 commander had not monitored any of the RT between the HS.748 and ATC. As he taxied past Hangar 2, he noticed a light, single-engined aircraft with its engine running and its rear baggage door appeared to be open. The PA-31 commander continued taxiing and turned onto Taxiway Alpha where he heard the light aircraft request and receive a taxi clearance.

On the threshold of Runway 21, the HS.748 was passed a take-off clearance by ATC of "CLEAR TAKEOFF 21, 270°/10 KT", which was correctly acknowledged. With both landing lights, which are located in the wing leading edges, selected ON, the HS.748 commenced its take-off run.

On taxiway Alpha, the PA-31 commander was concerned about the baggage door on the light aircraft. He looked to his left in order to try and see the light aircraft and check the baggage door as it taxied down Runway 17. He spent what he described as "a few seconds on this distraction", before looking into the cockpit to select the VOR frequencies. Upon looking out of the cockpit he realised that he had taxied past the Alpha 4 holding point and he stopped immediately. As he stopped he became aware of the departing HS.748 on Runway 21 which was immediately ahead of him.

The HS.748 commander had been monitoring the progress of the PA-31 which he considered to be taxiing at a normal speed. He realised that even if the PA-31 did not stop at the holding point, his aircraft would pass safely in front of it. He passed control of the aircraft to the FO at 60 kt and monitored the acceleration, estimating that they passed the Alpha taxiway at about 80 kt abeam where the PA-31 had stopped approximately 20 to 30 feet from the runway edge. The HS.748 continued the takeoff whilst the PA-31 remained stationary until given an onward clearance to continue to Alpha 1.

Analysis

The investigation considered that there were three main human factors, which led to this incident. These were:

1. *Expectation.* From the ATIS, the PA-31 commander knew that Runway 26 was the duty runway and under normal circumstances the limit of his clearance to taxi would have been Alpha 1 or Alpha 2. There was no specific ATC information transmitted to the PA-31 regarding the HS.748 departure, which was taking place on Runway 21. The take-off clearance given to the HS.748 was not fully monitored by the PA-31 commander who assumed that the aircraft he heard being cleared for takeoff was departing from Runway 26.
2. *Distraction.* The PA-31 commander's concern for what he thought was an open baggage door on a light aircraft caused him to try and resolve the matter by looking away from the taxiway and attempting to search for the light aircraft. He intended to try and make a visual inspection of the baggage door if he could see it.
3. *Priorities.* Although the PA-31 was taxiing along the Alpha taxiway towards an active runway, its commander's concern for the light aircraft baggage door was foremost in his mind and probably displaced the requirement to hold at Alpha 4. The fact that, as he was approaching the holding point he decided to set the navigation aids, suggests that he had forgotten the limits of his taxi clearance and had reverted to his normal routine of continuing to Alpha 1 or Alpha 2.

Conclusion

The PA-31 commander had understood his taxi clearance and he fully intended to stop at the Alpha 4 holding point. Having switched on his radios after the HS.748 commander had acknowledged his clearance to line up on Runway 21, he was not aware that Runway 21 was in use. His expectations combined with the distraction caused by the light aircraft baggage door caused him temporarily to forget the limit of his clearance to the Alpha 4 holding point. It was only when he looked up from tuning the navigation aids that he remembered to stop and only then was he aware of the HS.748 as it passed in front of him.