

INCIDENT

Aircraft Type and Registration:	DHC-8-402, G-JEDI	
No & Type of Engines:	2 Pratt & Whitney Canada PW150A turboprop engines	
Year of Manufacture:	2001	
Date & Time (UTC):	5 January 2005 at 0715 hrs	
Location:	Taxiway A, Birmingham International Airport, West Midlands	
Type of Flight:	Public Transport (Passenger)	
Persons on Board:	Crew - 4	Passengers - 21
Injuries:	Crew - None	Passengers - None
Nature of Damage:	None	
Commander's Licence:	Air Transport Pilot's Licence	
Commander's Age:	38 years	
Commander's Flying Experience:	2,900 hours (of which 1,865 were on type) Last 90 days - 170 hours Last 28 days - 28 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further information from maintenance organisation	

History of the event

The flight crew were taxiing the aircraft along Taxiway A towards Runway 15 at Birmingham International Airport. After passing a metal plate in the taxiway, the commander turned the nosewheel steering tiller to the right to centralise the aircraft on the taxiway but this initial control input seemed to have no effect. The commander made a larger input on the tiller but the aircraft still did not turn. He then applied right rudder and right brake pedal pressure and was able to bring the aircraft to a halt, with its left main landing gear on the grass next to the taxiway. The crew noted at this point that the 'nose steering' fault light was illuminated and the co-pilot's airspeed indicator (ASI) had failed. The wind at the time was reported as being from 210° at 11 kt which created a significant crosswind component from the left.

The flight crew recycled the 'nose steering' control and the warning light extinguished but they were unable to taxi forwards with the left main landing gear on the grass. Consequently, the passengers were disembarked onto a bus and the aircraft was pushed to a stand for engineering investigation.

Engineering investigation

Analysis of the flight data recorder (FDR) later showed that the 'weight-on-wheels' (WOW) signal was lost for one second early during the taxiing of G-JEDI to Runway 15 and again at about the point where the crew reported losing control of the nosewheel steering. In this aircraft there are two separate WOW switches (WOW1 and WOW2) on the nose landing gear. The loss of signal from either of these sensors results in the FDR recording a loss of WOW signal and in the Steering Control Unit (SCU) removing steering commands from the hydraulic actuators. The loss of nosewheel steering from tiller and rudder inputs in G-JEDI was entirely consistent, therefore, with the loss of one WOW signal from the nose landing gear while the crew were attempting to steer the aircraft on the ground at low speed.

The following day (6 January 2005) there was another ASI problem on the ground with the same aircraft, at a stand at Glasgow Airport. Investigation showed there was a problem with the wiring harness from the WOW2 sensor and this was repaired.

The FDR data was not available to the maintenance engineers immediately following the incident at Birmingham (5 January 2005) and the aircraft was dispatched following a change of the SCU. This diagnosis was based on a particular fault code registered by the SCU. The engineers did not appreciate that this fault code could be an indication of a loss of WOW1 or WOW2. This information came from the aircraft manufacturer; it was not included in the aircraft's maintenance manual. The airline maintenance organisation has requested that the aircraft manufacturer introduce information of this nature into the manual.

Safety action

On 31 March 2005 the aircraft manufacturer informed the AAIB in writing that, in accordance with the operator's request, the company will be amending its Maintenance Manuals to incorporate the information that the operator requested.