

Follow-up Action on Occurrence Report

SERIOUS INCIDENT INVOLVING DHC-8 SERIES 311, G-NVSB, ON DEPARTURE FROM MANCHESTER AIRPORT ON 9 AUGUST 2005

(ENGINE FAILURE AFTER TAKEOFF AND FAILURE TO FEATHER)

CAA FACTOR NUMBER : F34/2006
FACTOR PUBLICATION DATE : 10 October 2006
OPERATOR : BA CitiExpress
CAA OCCURRENCE NUMBER : 2005/06348
AAIB REPORT : Bulletin 9/2006

SYNOPSIS

(From AAIB Report)

Shortly after takeoff from Manchester the No 2 (right) engine failed and subsequent attempts to feather the propeller were unsuccessful. The aircraft returned to Manchester where it made an uneventful landing. The No 1 propeller blade support bearing of the right propeller assembly had failed catastrophically, resulting in large imbalance loads through the engine. This led to the fracture of the Power Turbine (PT) shaft, and a consequent overspeed of the PTs, leading to the loss of the PT blades and an exhaust baffle plate from the rear of the engine. The failure of the propeller to feather was due to a ball from the failed bearing becoming jammed between the propeller blade root and the propeller hub. The origin of the bearing failure was not determined although metallurgic examination revealed that cracking had been occurring for a period of time. Six days prior to the incident, heavy vibration was reported but, as vibration survey equipment was not available at the time, the defect was deferred in accordance with the aircraft operator's technical instruction. When vibration survey equipment was fitted, it was set up incorrectly and a full vibration survey was not carried out prior to the incident flight. Two safety recommendations are made.

FOLLOW UP ACTION

The two Safety Recommendations, made by the AAIB following their investigation, are reproduced below, together with the CAA's responses.

Recommendation 2006-67

It is recommended that Transport Canada require the aircraft manufacturer, Bombardier Aerospace, to amend the maintenance manual for the DHC Dash 8-300 aircraft with regard to propeller vibration measurements and to provide instructions when to investigate the propeller and/or engine assembly for possible internal damage, based on measured vibration levels, and to provide specific vibration level limits at which detailed inspections are required.

CAA Response

This Recommendation is not addressed to the CAA.

Recommendation 2006-68

It is recommended that Transport Canada require the aircraft manufacturer, Bombardier Aerospace, to amend the DHC Dash 8-3 00 maintenance manual with regard to propeller vibration monitoring flights, to ensure that vibration surveys are only conducted on non-revenue flights by appropriately trained crews.

CAA Response

This Recommendation is not addressed to the CAA.