Japan Transport Safety Board

The response from the TCCA to the safety recommendation

The Japan Transport Safety Board received the response from the Transport Canada Civil Aviation (TCCA) to the safety recommendation issued on Aug. 27, 2010 as attached regarding an serious incident of JA847C (Bombardier DHC-8-402) operated by Japan Air Commuter occurred at approximately 6km NNW of Tanegashima Airport on Mar. 25, 2009.

JTSB safety recommendation to the TCCA

In view of this serious incident, the Japan Transport Safety Board recommends that Transport Canada Civil Aviation (TCCA) give careful consideration to the following and take necessary measures thereof：

(1) Considering the detrimental effect on safety brought about by the inclusion of impurities in the RGB helical input gearshaft of the engine involved in this serious incident, P&WC, the manufacturer of the engine, should make company-wide efforts including the management of the metal stock supplier and component manufacturer serving P&WC, towards improved quality control concerning the production of the RGB helical input gear shaft.

(2) P&WC assigned a hazard severity of “Significant – Level 3” to this serious incident by considering only the occurrence of an IFSD as the basis for the risk level determination, but the actual conditions included the loss of all functions of the feathering system for the propeller of the shutdown engine in addition to the engine in IFSD.

The risk assessment of this serious incident should not be made only on the engine necessitating an IFSD, but instead the incident must be reassessed from the viewpoint of the safety of the entire aircraft, and safety improvement actions should be taken if the results of the reassessment indicate this to be necessary.

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FEB 0 6 2013

Your file Votre référence

Our file Notre référence
AARQ 5002-A09F0048
RDIMS 8169128

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SUBJECT: Draft Japan Transport Safety Board Aviation Investigation Report A09F0048
Serious Incident- Failure of Engine
Japan Air Commuter Co., Ltd.
Bombardier DHC-8-402, Japan Registration JA847C
Tanegashima Airport, Japan
25 March 2009

This is in response to your communication in regards to the above-mentioned final report dated August 27, 2010. The appropriate officials have reviewed the subject report and the attached comments are provided for the Board's consideration.

Should TSB officials have any questions concerning this response, please contact
(Name and phone)

Yours sincerely,

(Original signed)

Director General, Civil Aviation

Canada

Safety Recommendation (1)
Page 21

The reports states, "Considering the detrimental effect on safety brought about by the inclusion of impurities in the RGB helical input gearshaft of the engine involved in this serious incident, P&WC, the manufacturer of the engine, should make company-wide efforts including the management of the metal stock supplier and component manufacturer serving P&WC, towards improved quality control concerning the production of the RGB helical input gear shaft."

Pratt &Whitney Canada along with Fiat Aero (RGB manufacturer) and Carpenter (Raw material supplier), has reviewed the report. The procedure for future procurements has been enhanced in order to minimize similar raw material inclusion.

Transport Canada is satisfied the new procedure has mitigated the risk of a reoccurrence and is not pursuing further action at this time.

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Your file Votre référence

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SUBJECT: Japan Transport Safety Board Aviation Investigation Report
A09F0048
Serious Incident- Failure of Engine
Japan Air Commuter Co., Ltd.
Bombardier DHC-8-402, Japan Registration JA847C
Tanegashima Airport, Japan
25 March 2009

This is in response to your email of April 22, 2010, in regards to the above-mentioned report. TCCA initially responded to the proposed draft recommendation #2 stating that it was in agreement with the conclusion reached by the JTSB regarding the requirement to reassess the impact of a dormant failure in the propeller auxiliary feathering system on the safety of the aircraft.

TCCA has subsequently reviewed the Risk Assessment provided by Bombardier and the pertinent information from the propeller original equipment manufacturer, Dowty, with reference to Dash 8 Series 400 propeller auxiliary pump failure and its impact on the safe operation of the aircraft. The data indicates that the Dowty propeller on the Dash 8 Series 400 aircraft is counterweighted and consequently, the loss of pitch change oil pressure causes the propeller to drive instantly and automatically to a safe high pitch. If there is also loss of engine power, as was the case in this incident, the windmilling drag will not be hazardous as the adverse impact on the controllability of aircraft is minimal.

The Auxiliary Feathering Pump is necessary to move the propeller to full feather (nominally zero windmilling rotation), not to achieve low windmilling drag. Analysis shows that the difference in drag between a counter-weight coarsened propeller blade pitch and a fully feathered propeller results in an AFM performance gradient decrement of no more than 0.5% (0.005) when a hydraulic pitch change pressure loss occurs at high power lever angle (PLA) settings.

On July 21, 2010, Bombardier revised the Aircraft Operating Manual though TR AOM DASH 8-Q400 to add the above mentioned AFM performance gradient decrement information. Also, Dowty Propellers issued Service Information Letter SIL E338 (Nov. 9, 2010) to underline the minimal impact on the safe operation of aircraft as a result of an auxiliary pump failure.

After careful consideration of this information, TCCA believes that a failure of the auxiliary feathering pump on the Dash 8 series 400 aircraft with the installation of a Dowty propeller is not an unsafe condition and therefore, does not warrant any mandatory corrective action at this time.

Should TSB officials have any questions concerning this response, please contact (Name and phone)

Yours sincerely,

(Original signed)

Director General, Civil Aviation