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Mrs. Eva-Maria Olsson
Administrator
Swedish Accident Investigation
(SHK) Authority
PO Box 12538
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Stockholm, Sweden

Your file Votre référence

Our file Notre référence
AARQ 5002-A12F0150
RDIMS 9995695
CCM 2014G150507

OCT 07 2014

Dear Mrs. Olsson:

**SUBJECT: Swedish Accident Investigation Authority (SHK) Aviation Investigation
Main rotor separation from the mast, Bell 206B
Village Porjus, Sweden
8 November 2012**

Further to your communication of July 3, 2014, I am writing to provide you with Transport Canada's response to the SHK Safety recommendations RL 2014:09 R3 and RL 2014:09 R4. The two Safety Recommendations issued to Transport Canada were included in the SHK Final Report into the Bell 206B accident at Village Porjus, Sweden on November 8, 2012.

The appropriate officials have reviewed the subject report and recommendations. Enclosed is the Departmental response to the recommendations in accordance with ICAO Annex 13 to the Convention on International Civil Aviation Aircraft Accident and Incident Investigation, Chapter 6, Paragraph 6.10 which states, "A state that receives safety recommendations shall inform the proposing State of the preventive action taken or under consideration, or the reasons why no action will be taken."

Yours sincerely,

Martin J. Eley
Director General, Civil Aviation

A12F0150 Transport Canada Response to Safety Recommendations No. RL 2014:09 R3 and RL 2014:09 R4 issued by the Swedish Accident Investigation Authority (SHK)

Safety Recommendation No. 2014:09 R3

“Transport Canada is recommended to act for a reduction in the oil system’s sensitivity to contaminants.”

Transport Canada communicated to the SHK in an email dated July 4, 2014, the information that the Bell Helicopter Maintenance Manual (BHT MM), contains prescribed procedures that refer to installing caps and/or plugs on disconnected lines and openings during maintenance. These prescribed procedures are meant to prevent particles from being introduced into a hose during maintenance.

Transport Canada’s July 4, 2014 clarification is not reflected in the Final Report.

The accident report describes the transmission removal and installation, however, does not provide details regarding the procedures that are prescribed in the BHT MM or the procedures followed by the company that were performing the 1 500 hour inspection of the transmission.

Transport Canada concurs with the report’s finding that the root cause was a *“small piece of sealant that got caught in the restrictor ended up in the line between the filter and the restrictor in connection with the work on the helicopter at the 1 500 hour inspection.”*

The final report describes the transmission removal and installation however, excludes details of post operational inspections as prescribed in the BHT MM.

The BHT MM 206B Chapter 63-27 pg 38 describes the operational transmission check that is performed post maintenance. Maintenance would have proceeded to conduct a flush of the system as per BHT 63-7 page 20 titled Oil Contamination of Transmission. This procedure includes cleaning and inspecting all fitting and filter including the (50-075-1) filter, followed by a second run and filter check.

Based on the foregoing, Transport Canada views the Bell Helicopter Textron Bell 206B transmission and freewheeling system design adequate and the maintenance instructions thorough, when correctly followed.

Transport Canada is not pursuing any further action at this time.

Safety Recommendation No. 2014:09 R4

“Transport Canada is recommended to act so that operators of the helicopter type are provided with information and suggestions for preventive measures regarding the risk of contamination of the free wheel’s lubrication system.”

The presence of contaminants at the restrictor but the absence of contaminants at the P/N 50-075-1 filter seems to indicate that contaminants were introduced between these two elements. This would require removal of the oil line and exposing it to the environment at some interval, starting from the 1500-hour inspection, and during the long term storage from November 20, 2011 to April 3, 2012. The BHT MM section 63-00 page 36, paragraph 17 provides instruction for the protection of fluid lines when removed for maintenance and also includes instructions at paragraph 18 for the long term storage of the transmission. According

to BHT MM section 63-00 page 32, paragraph 7, disconnection of the pressure hose is required for transmission removal. Unfortunately, the report provides no information about how the oil line between the P/N 50-075-1 filter and the restrictor fitting was disconnected (completely or partially) and how it was protected from the introduction of contaminants.

Transport Canada communicated to the SHK in an email dated July 4, 2014, the information that the BHT MM, contains prescribed procedures that refer to installing caps and/or plugs on disconnected lines and openings during maintenance. These prescribed procedures are meant to prevent particles from being introduced into a hose during maintenance.

Transport Canada's review of Bell Helicopter Textron instructions for Continued Airworthiness confirms that the maintenance instructions adequately describe how to prevent oil contamination with procedures for the installation of caps or plugs on disconnected fittings and openings (BHT MM 63-00 pg 36 paragraph 17).

Based on the foregoing, Transport Canada views the Bell Helicopter Textron Bell 206B transmission and freewheeling system design adequate and the maintenance instructions thorough, when correctly followed.

Transport Canada is not pursuing any further action at this time.