

Grant Robinson

From: McConnell, DAVE P <dave.p.mcconnell@lmco.com>
Sent: Friday, December 09, 2016 9:32 AM
To: Grant Robinson
Subject: S-76 damper reservoir water ingress

Grant;

Following are CSE's comments and recommendations for temporarily sealing the main rotor damper reservoir cap on S-76 aircraft in order to prevent water ingress.

Case Number: C0048023
Customer: Thai Aviation Services Limited
Aircraft S/N: 760001
Aircraft Model: S-76
ATA: 65
Part Number: 76106-08050-043
Case Subject: Water In Damper Reservoir After Flight In Rain

Problem Description:

Southern Thailand has been experiencing continuous, and at time extremely heavy rains for the past week.

For the past three days all five S-76 aircraft, (2x C++ and 3x D models) were found to have significant amounts of water in their damper reservoirs after the last flight of the day.

All damper reservoirs were closely inspected for integrity. No leaks or anomalies were noted. Each reservoir was purged of water, only to have it reappear at the end of the next days' flying.

A/C S/Ns range from 760693 to 761063. AC TT's range from 11,744.4 to 44.8.

It is theorized that the reservoir filler caps, lacking any locking mechanism or seal are not fully shut in flight, thereby allowing water ingress. All filler cap springs were inspected and found to have approximately equal tension.

TAS propose to lockwire the caps in place or secure the caps with heat shrink applied over the cap and filler neck.

TAS request SA approval to lock the damper reservoir filler caps as described above, and solicit any other guidance that can be offered regarding this issue. EoM

Problem Resolution:

According to the print, The Damper Reservoir Assembly is pressure tested with the filler cap plugged and the line fittings capped off, so the leakage is likely due to the filler cap under the noted extremely heavy rain conditions.

Sikorsky Rotors Engineering does not object to the customer attempting to use either using lock-wire or heat shrink tubing over the cap of the filler neck in an effort to stop the water entry. Also, it would be permissible to apply a fillet of AMS3265 Type 3 sealant to the reservoir cap (possibly providing better results over the lock-wire or shrink tubing).

Note: Most likely already accomplished but, the dampers, lines and reservoir should be flushed to purge all water.

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