EASA Safety Information Bulletin

SIB No.: **2015-03**
Issued: **30 January 2015**

Subject: **ATR 42-400, 42-500 and 72-212A aeroplanes - Propeller / Engine Vibrations In Flight**

Ref. Publications:
ATR Operators Information Message (OIM), ref : 2014/10 Issue 1, dated 23/09/2014;
- UTC Aerospace Systems Service Bulletin (SB) 568F-61-67, dated 02 October 2014;
- ATR Flight Crew Operational Manual (FCOM) – Section 3-07 'Descent – Approach';
- ATR FCOM – Section 3-09 'One engine inoperative';
- ATR Aircraft Flight Manual (AFM) – Section 5-03 'Flying with one engine inoperative'.

Applicability:
ATR 42-400, 42-500 and 72-212A aeroplanes, equipped with Hamilton Sundstrand model 568F-1 propellers.

Description:
EASA, by means of this Safety Information Bulletin (SIB), informs registered owners/operators of ATR 42-400, 42-500 and 72-212A aeroplanes (as defined through Type Certificate Data Sheet EASA.A.084) of an airworthiness concern.

In-service events have been reported, featuring damages on propeller pitch change mechanism (blade trunnion pin broken or cracked, actuator forward yoke plate bent and damaged).

Those occurrences were associated with sudden and severe propeller vibrations during the descent performed at a speed close to VMO (Velocity Maximum Operation) with power levers in Flight Idle position, often associated with PEC (Propeller Electronic Control) faults message (Code 67 & 68) found upon subsequent maintenance troubleshooting.

Based on the available information, EASA considers that improving crew awareness about this type of vibration event will allow a better and prompt identification of the issue and the application of conservative measures.

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Airworthiness Directive (AD) action under EU 748/2012, Part 21.A.3B.

This is information only. Recommendations are not mandatory.

Recommendation(s): As preventive measures to limit the risk of occurrence of such phenomenon, EASA recommends the following:

1- Operators of aeroplanes as defined in the Applicability of this SIB should follow as much as possible the aeroplane manufacturer recommendation for a standard descent speed at maximum 240 knots (refer to ATR FCOM – Section 3.07). If, for any reason, during descent the speed becomes close to VMO and the power levers have to be reduced to 'flight idle' position, a smooth and progressive reduction of the power levers should be accomplished.

2- Despite this recommended speed, should an operator anyway encounter the described phenomenon during descent, the crew should try to discriminate and shut down the affected engine, carrying-on operations with one engine operative (refer to ATR AFM – Section 5.03 and FCOM – Section 3-09).

3- In case of any difficulty to discriminate and shut down the affected engine, the crew should avoid using 'reverse' mode on engines.

4- Because the on-going investigation evidenced that prior to the flights during which the propeller pitch change mechanisms were severely damaged, sudden and unusual vibration, for a short duration, were sometimes reported by pilots during the descent with airspeed close to VMO, when they reduced PLA to FI position, pilots operating aeroplanes as defined in the Applicability of this SIB should report any sudden and unusual vibration encountered during descent or approach to their maintenance organisation.

5- Operators of aeroplanes as defined in the Applicability of this SIB should consider the recent publications issued by ATR, and UTC Aerospace Systems, providing operators with guidelines for troubleshooting:

- ATR Operators Information Message (OIM), ref : 2014/10 Issue 1, dated 23/09/2014.

- UTC Aerospace Systems Service Bulletin (SB), ref : 568F-61-67, dated 02/10/2014

and to report to ATR, the aeroplane manufacturer, whenever exposed to the symptoms mentioned in the "Description" section of this SIB.

Contact(s): For further information contact the Safety Information Section, Certification Directorate, EASA. E-mail: ADs@easa.europa.eu.

For any question concerning the technical content of the recommendations in this SIB, please contact:
ATR - GIE Avions de Transport Régional,
Continued Airworthiness Service,
Tel.: +33 (0)5 62 21 62 21 - Fax: +33 (0) 5 62 21 67 18
E-mail: continued.airworthiness@atr.fr.

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