Airworthiness Directive

AD No.: 2017-0070

Issued: 25 April 2017

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EC) 216/2008, Article 14(4) exemption].

Design Approval Holder's Name:
SAFRAN HELICOPTER ENGINES

Type/Model designation(s):
ARRIUS 2F engines

Effective Date: 09 May 2017

TCDS Number(s): EASA.E.031

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2016-0138R1 dated 28 July 2016.

ATA 73 – Engine Fuel & Control – Pipe Injector Preferred Assembly – Replacement

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Manufacturer(s):
SAFRAN Helicopter Engines (formerly Turbomeca)

Applicability:
ARRIUS 2F engines, all serial numbers.

These engines are known to be installed on, but not limited to, Airbus Helicopters (formerly Eurocopter, Eurocopter France) EC120 B helicopters.

Reason:
During inspections carried out at the repair workshop on engines, similar in design to ARRIUS 2F, it was found that some main fuel injectors were totally or partially blocked. Blockage of the injectors may lead to engine flame out during rapid engine deceleration.

This condition, if not corrected, could lead to an uncommanded engine in-flight shut down, potentially resulting in an emergency landing, with possible damage to the helicopter and injury to occupants.

To initially address this unsafe condition, DGAC France issued AD 1999-233(A) to require periodical replacement of the fuel manifold. After that AD was issued, further investigations demonstrated

that a periodic flow rate check (water technology) and the cleaning specified in Turbomeca Mandatory Service Bulletin (MSB) A319 73 4001 did not meet the expected results (wrong indication and insufficient cleaning), and it was determined that only repetitive replacement (removal for check and cleaning at a repair centre) of the pipe injector preferred assembly ensures the airworthiness of the engine.

Consequently, EASA issued AD 2012-0150 to require replacement of the pipe injector preferred assembly before exceeding a defined limit of operating hours as specified in Turbomeca MSB A319 73 4001 issue K. After that AD was issued, Turbomeca transferred the replacement instructions of Turbomeca MSB A319 73 4001 into the Airworthiness Limitation Sections (ALS) of the applicable Maintenance Manuals (MM).

Consequently, EASA issued AD 2016-0138 (later revised), retaining the requirements of EASA AD 2012-0150, which was superseded, and requiring the use of the ALS, task 73-15-00-900-801.

After EASA AD 2016-0138R1 was issued, occurrences were reported of engine flame-out, while increasing the engine rating during autorotation training flight. The subsequent investigations concluded that the fuel flow through the pipe injector preferred assembly Part Number (P/N) 0 319 73 835 0 was reduced, due to the presence of fuel coking.

To address this potential unsafe condition, SAFRAN Helicopter Engines considered that only the pipe injector preferred assembly P/N 0 319 73 044 0 (reference specific to ARRIUS 2F and systematically cleaned by pyrolysis process) ensures the airworthiness of the engine and published MSB 319 73 4839 to provide replacement instructions.

For the reasons described above, this AD, partially retains the requirements of EASA AD 2016-0138R1, which is superseded, and requires removal from service of all pipe injector preferred assemblies P/N 0 319 73 835 0, replacing these with the improved assembly P/N 0 319 73 044 0. This AD also prohibits installation of a pipe injector preferred assembly P/N 0 319 73 835 0 on an engine.

Required Action(s) and Compliance Time(s):
Required as indicated, unless accomplished previously:

Note 1: For the purpose of this AD, Group 1 engines are those that have a pipe injector preferred assembly P/N 0 319 73 835 0 installed. Group 2 engines are those that do not have a pipe injector preferred assembly P/N 0 319 73 835 0 installed.

Part Replacement:

(1) From the effective date of this AD, before exceeding 400 operating hours, replace each pipe injector preferred assembly P/N 0 319 73 835 0 and P/N 0 319 73 044 0 with a serviceable part (see Note 2 of this AD). Replacement of a pipe injector preferred assembly on an engine can be accomplished in accordance with the instructions of Turbomeca ARRIUS 2F MM No. X 319 L6 301 2, task 73-15-00-900-801.

Note 2: For the purpose of this AD, a serviceable part is a pipe injector preferred assembly P/N 0 319 73 044 0 that has not exceeded 400 operating hours since first installation on an engine, or since last cleaning by pyrolysis in accordance with ARRIUS 2F Component MM X-73-15-01-2.

Modification:

(2) Unless already accomplished as required by paragraph (1) of this AD, within 16 months after the effective date of this AD, modify each Group 1 engine by replacing pipe injector preferred assembly P/N 0 319 73 835 0 with a serviceable part (see Note 2 of this AD) in accordance with the instructions of Safran Helicopter Engines MSB 319 73 4839.

Part Installation:

(3) Do not install a pipe injector preferred assembly P/N 0 319 73 835 0 on an engine, as required by paragraph (3.1) of (3.2) of this AD, as applicable.

(3.1) Group 1 engines: After modification of an engine as required by paragraph (1) or (2) of this AD, as applicable.

(3.2) Group 2 engines: From the effective date of this AD.

Ref. Publications:

SAFRAN Helicopter Engines MSB 319 73 4839 version A (original issue), dated 13 December 2016.

The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD.

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.

2. This AD was posted on 21 March 2017 as PAD 17-037 for consultation until 18 April 2017. No comments were received during the consultation period.

3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.

4. For any question concerning the technical content of the requirements in this AD, please contact your nearest SAFRAN Helicopter Engines technical representative or connect to www.tools.safran-helicopter-engines.com.