



## Notification of a Proposal to issue an Airworthiness Directive

**PAD No.:** 22-165

**Issued:** 02 December 2022

Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

**Design Approval Holder's Name:**

SAFRAN HELICOPTER ENGINES

**Type/Model designation(s):**

ARRIUS 2R engines

**Effective Date:** [TBD - standard: 14 days after AD issue date]

**TCDS Number(s):** EASA.E.031

**Foreign AD:** Not applicable

**Supersedure:** None

### ATA 77 – Engine Indicating / Conformation Values – Consistency Check

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**Manufacturer(s):**

SAFRAN Helicopter Engines, S.A. (SAFRAN), formerly Turboméca, S.A.

**Applicability:**

ARRIUS 2R engines, all serial numbers.

These engines are known to be installed on, but not limited to, Bell Textron Canada Ltd (Bell) 505 (Jet Ranger X) single-engine helicopters.

**Definitions:**

For the purpose of this AD, the following definitions apply:

**Affected engine(s):** Engines that were installed on a helicopter, or engines on which module 1 or module 2 has been replaced, after helicopter first delivery from Bell and before publication of SAFRAN Service Bulletin (SB) 319 77 4848 version A.

**The SB:** SAFRAN Service Bulletin (SB) 319 77 4848 version B.



**Reason:**

Occurrences were reported of inconsistencies of torque (TQ) and measured gas temperature (MGT) conformation values recorded in the avionics compared to the values recorded on the engine log cards, following replacement of the engine, module M01 or module M02.

This condition, if not corrected, could affect the Engine Power Assurance Check (EPAC) and lead to an under- or overestimation of TQ and MGT values. Overestimation of MGT and TQ may lead to an Electronic Engine Control Unit (EECU) embedded value that could result in power non-availability. Underestimation of MGT could lead to an exceedance of the certified thermal limit of the HP blades, possibly resulting in HP blade rupture with consequent sudden power loss and release of low energy debris. Underestimation of TQ could lead to overpassing of the helicopter transmission limit. All above conditions could result in reduced control of the helicopter.

To address this potential unsafe condition, SAFRAN published SB 319 77 4848 version A (later revised), to provide instructions for a consistency check of the TQ and MGT values, and depending on findings, to perform corrective actions and update the values. The applicable engine and helicopter manuals were corrected and published concurrently with SB 319 77 4848 version A, in order to prevent more occurrences.

For the reason described above, this AD requires a one-time consistency check of the TQ and MGT conformation values recorded in the avionics and on the engine log cards and, depending on findings, the accomplishment of applicable corrective action(s).

**Required Action(s) and Compliance Time(s):**

Required as indicated, unless accomplished previously:

**TQ and MGT Consistency Check:**

- (1) For each affected engine: Within 100 flight hours (FH) or 6 months, whichever occurs first after the effective date of this AD, compare the TQ and MGT conformation values recorded in the avionics with the TQ and MGT conformation values recorded on the module log cards in accordance with the instructions of the SB.

**Corrective Action(s):**

- (2) If, during the consistency check as required by paragraph (1) of this AD, any inconsistency is found, before next flight, accomplish all applicable maintenance tasks in accordance with the instructions of the SB.

**Credit:**

- (3) Accomplishment of a consistency check and applicable corrective action(s) on an engine, before the effective date of this AD in accordance with the instructions of SAFRAN SB 319 77 4848 version A, are acceptable to comply with the requirements of paragraphs (1) and (2) of this AD for that engine.



**Ref. Publications:**

Safran Helicopter Engines ARRIUS 2R SB 319 77 4848 version A (original issue) dated 15 December 2021, or version B dated 14 November 2022.

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

**Remarks:**

1. This Proposed AD will be closed for consultation on 16 December 2022.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, can be reported to the [EU aviation safety reporting system](#). This may include reporting on the same or similar components, other than those covered by the design to which this PAD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.
4. For any question concerning the technical content of the requirements in this PAD, please contact: SAFRAN Helicopter Engines, S.A. at [data-fleet.fr.she@safrangroup.com](mailto:data-fleet.fr.she@safrangroup.com).

