



Airworthiness Directive

AD No.: 2022-0265R1

Issued: 06 January 2023

Note: This Airworthiness Directive (AD) 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.

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, or Annex Vb Part ML.A.301, as applicable, 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 Annex Vb Part ML.A.303, as applicable] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

SAFRAN HELICOPTER ENGINES

Type/Model designation(s):

ARRIUS 2R engines

Effective Date: Revision 1: 13 January 2023
Original issue: 04 January 2023

TCDS Number(s): EASA.E.031

Foreign AD: Not applicable

Revision: This AD revises EASA AD 2022-0265 dated 22 December 2022.

ATA 77 – Engine Indicating / Conformation Values – Consistency Check

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 on which module 1 or module 2 has been replaced, after helicopter first delivery from Bell, except those that have been installed, or on which module 1 or module 2 has been replaced, in accordance with the instructions of Engine Maintenance Manual (EMM) X 319 R5 460 2 version 13.

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 high-pressure (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 further occurrences.

Consequently, EASA issued AD 2022-0265 to require 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).

Since that AD was issued, it was determined that credit can be given to engine installations performed in accordance with the instructions of SAFRAN EMM X 319 R5 460 2 version 13.

For the reason described above, this AD is revised accordingly.

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

Required as indicated, unless accomplished previously:

TQ and MGT Consistency Check:

- (1) For affected engines installed on a helicopter: Within 100 flight hours or 6 months, whichever occurs first after 04 January 2023 [the effective date of the original issue 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 04 January 2023 [the effective date of the original issue 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, as applicable, for that engine.

Engine Installation:

- (4) From 04 January 2023 [the effective date of the original issue of this AD], it is allowed to install an engine on a helicopter provided, before next flight after installation, a consistency check and corrective action(s), as applicable, are accomplished for that engine as required by paragraphs (1) and (2) of this AD.

Credit:

- (5) Installation of an engine on a helicopter in accordance with the instructions of EMM X 319 R5 460 2 version 13, is acceptable to comply with the requirements of paragraph (4) 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.

Safran Helicopter EMM X 319 R5 460 2 version 13 dated 15 October 2021.

The use of later approved revisions of the above-mentioned documents 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. The original issue of this AD was posted on 02 December 2022 as PAD 22-165 for consultation until 16 December 2022. 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. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, 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 AD 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.
5. For any question concerning the technical content of the requirements in this AD, please contact: SAFRAN Helicopter Engines, S.A. at data-fleet.fr.she@safrangroup.com.

