



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-1118; Project Identifier MCAI-2020-00516-E]

RIN 2120-AA64

Airworthiness Directives; Safran Helicopter Engines, S.A. (Type Certificate previously held by Turbomeca, S.A.) Turboshaft Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for all Safran Helicopter Engines, S.A. Arriel 2C, 2C1, 2S1, and 2S2 model turboshaft engines. This proposed AD was prompted by investigations by the manufacturer following level 1 failures in flight (minor anomalies) and level 2 failures on the ground (minor failures), where cracks were found on the soldered joints of torque conformation boxes. This proposed AD would require performing initial and repetitive inspections of the resistance values of the torque conformation box and, depending on the results of the inspections, replacement of the torque conformation box. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: (202) 493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12 140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Safran Helicopter Engines, S.A., Avenue du 1er Mai, Tarnos, France; phone: +33 (0) 5 59 74 45 11. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1118; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7134; fax: (781) 238-7199; email: wego.wang@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2020-1118; Project Identifier MCAI-2020-00516-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any

personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2019-0110, dated May 21, 2019 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

It was reported that, during investigations following level 1 failures in flight (minor anomalies) and level 2 failures on the ground (minor failures), cracks were found on the soldered joints of certain torque conformation boxes. Although no events in operation were reported of One Engine Inoperative (OEI) ratings maximum power unavailability, the failure mode analysis for these boxes demonstrated that such event could not be excluded.

This condition, if not detected and corrected, could lead to engine in-flight shut-down, possibly resulting in reduced control of the helicopter.

To address this potential unsafe condition, SAFRAN Helicopter Engines issued the SB [Service Bulletin], to provide instructions for repetitive checks of the box resistance values.

For the reasons described above, this [EASA] AD requires repetitive checks of the affected part and, depending on findings, replacement of the affected part with a serviceable part.

You may obtain further information by examining the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1118.

Related Service Information under 1 CFR Part 51

The FAA reviewed Safran Helicopter Engines Mandatory Service Bulletin (MSB) No. 292 72 2868, Version A, dated December 2018. The MSB describes procedures for performing an inspection of the resistance values of the torque conformation box. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Proposed AD Requirements in this NPRM

This proposed AD would require performing initial and repetitive inspections of the resistance values of the torque conformation box and, depending on the results of the inspections, replacement of the torque conformation box.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 257 engines installed on helicopters of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Inspect resistance values of the	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$21,845

torque conformation box				
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The FAA estimates the following costs to do any necessary replacement that would be required based on the results of the proposed inspections. The agency has no way of determining the number of aircraft that might need this replacement:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace the torque conformation box	1 work-hour x \$85 per hour = \$85	\$1,841	\$1,926

The FAA has included all known costs in its estimate. According to the manufacturer, however, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected operators.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

Safran Helicopter Engines, S.A. (Type Certificate previously held by Turbomeca, S.A.): Docket No. FAA-2020-1118; Project Identifier MCAI-2020-00516-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Safran Helicopter Engines, S.A. (Type Certificate previously held by Turbomeca, S.A.) Arriel 2C, 2C1, 2S1, and 2S2 model turboshaft engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7712, Engine BMEP/Torque Indicating.

(e) Unsafe Condition

This AD was prompted by investigations by the manufacturer following level 1 failures in flight (minor anomalies) and level 2 failures on the ground (minor failures), where cracks were found on the soldered joints of torque conformation boxes. The FAA is issuing this AD to prevent failure of the torque conformation box. The unsafe condition, if not addressed, could result in failure of the engine, in-flight shutdown, and loss of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For engines with the torque conformation box in pre-modification TU 34 configuration, installed on Arriel 2C and 2C1 model turboshaft engines; pre-modification TU 34 or post-modification TU 188 configuration, installed on Arriel 2S1 model turboshaft engines; or post-modification TU 188 configuration, installed on Arriel 2S2 model turboshaft engines:

(i) Within 600 engine hours (EHs) or 180 days after the effective date of this AD, whichever occurs first, perform an initial inspection of the resistance values of the torque conformation box.

Note 1 to paragraph (g)(1)(i): You may delay the initial inspection by up to 60 EHs to align with other scheduled maintenance tasks.

(ii) Thereafter, perform repetitive inspections of the resistance values of the torque conformation box before exceeding 600 EHs since the last inspection of the resistance values of the torque conformation box.

(2) Use the Accomplishment Instructions, paragraph 2.3.2 or 4.3.2, of Safran Helicopter Engines Mandatory Service Bulletin No. 292 72 2868, Version A, dated December 2018, to perform the inspections of the resistance values of the torque conformation box required by paragraph (g)(1) of this AD.

(3) If, during any inspection required by paragraph (g)(1) of this AD, a non-conforming resistance value is found, before further flight, remove the torque conformation box from service and replace it with a part eligible for installation.

(h) Definition

For the purpose of this AD, a “part eligible for installation” is a zero hour torque conformation box or a torque conformation box that has been inspected as required by paragraph (g)(1) of this AD.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7134; fax: (781) 238-7199; email: wego.wang@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2019-0110, dated May 21, 2019, for more information. You may examine the EASA AD in the AD docket at <https://www.regulations.gov> by searching for and locating it in Docket No. FAA-2020-1118.

(3) For service information identified in this AD, contact Safran Helicopter Engines, S.A., Avenue du 1er Mai, Tarnos, France; phone: +33 (0) 5 59 74 45 11. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Issued on December 4, 2020.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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