

[Federal Register Volume 86, Number 129 (Friday, July 9, 2021)]

[Rules and Regulations]

[Pages 36205-36207]

From the Federal Register Online via the Government Publishing Office [www.gpo.gov]

[FR Doc No: 2021-14520]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2020-1180; Project Identifier MCAI-2020-00517-E; Amendment 39-21608; AD 2021-13-03]**

**RIN 2120-AA64**

### **Airworthiness Directives; Safran Helicopter Engines, S.A. (Type Certificate Previously Held by Turbomeca, S.A.) Turboshift Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Safran Helicopter Engines, S.A. (Safran Helicopter Engines) Arriel 2B, 2B1, 2C, 2C1, 2C2, 2S1 and 2S2 model turboshaft engines. This AD was prompted by reports of non-conforming fuel filter pre-blockage pressure switches. This AD requires repetitive visual inspections of the fuel filter by-pass indicator pop-up, a one-time operational test of the fuel filter pre-blockage pressure switch and, depending on the findings, replacement of the fuel filter pre-blockage pressure switch with a part eligible for installation. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective August 13, 2021.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 13, 2021.

**ADDRESSES:** For service information identified in this final rule, 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. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1180.

### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1180; 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 final rule, the mandatory

continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**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](mailto:wego.wang@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Safran Helicopter Engines Arriel 2B, 2B1, 2C, 2C1, 2C2, 2S1 and 2S2 model turboshaft engines. The NPRM published in the Federal Register on February 22, 2021 (86 FR 10501). The NPRM was prompted by reports of non-conforming fuel filter pre-blockage pressure switches. In the NPRM, the FAA proposed to require repetitive visual inspections of the fuel filter by-pass indicator pop-up, a one-time operational test of the fuel filter pre-blockage pressure switch and, depending on the findings, replacement of the fuel filter pre-blockage pressure switch with a part eligible for installation. The FAA is issuing this AD to address the unsafe condition on these products.

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2019-0180, dated July 25, 2019 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

Occurrences have been reported of non-conforming fuel filter pre-blockage pressure switches, manufactured before December 2016. The non-conformity of the fuel filter pre-blockage pressure switch can cause its non-activation in case of fuel system contamination, with consequent opening of the by-pass without indication in the cockpit.

This condition, if not detected and corrected, and in case of fuel contamination, could lead to an uncommanded in-flight shut-down, possibly resulting in an emergency autorotation landing on a single engine helicopter, or to a double uncommanded in-flight shut-down on a twin engine helicopter.

To address this potential unsafe condition, SAFRAN issued the MSB, providing inspection instructions.

For the reasons described above, this [EASA AD] requires repetitive daily visual checks of the fuel filter by-pass indicator pop-up. This [EASA] AD also requires a one-time operational check of the affected part and, depending on findings, replacement of that part, which constitutes terminating action for the repetitive daily checks as required by this [EASA] AD.

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-2020-1180.

## Discussion of Final Airworthiness Directive

### Comments

The FAA received no comments on the NPRM or on the determination of the costs.

### Conclusion

The FAA reviewed the relevant data and determined that air safety and the public interest require adopting this final rule as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. This AD is adopted as proposed in the NPRM.

### Related Service Information Under 1 CFR Part 51

The FAA reviewed Task 73-23-01-750-801-A01–Pre-Blockage Pressure Switch of the Fuel Filter Tests (Electrical), dated November 30, 2012, from the Turbomeca Arriel 2 S1 Maintenance Manual. Task 73-23-01-750-801-A01 provides instructions for performing an operational test of the fuel filter pre-blockage pressure switch. 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.

### Other Related Service Information

The FAA reviewed Safran Helicopter Engines Mandatory Service Bulletin (MSB) No. 292 73 2869, Version B, dated December 2018. The MSB describes procedures for identifying and securing pre-blockage pressure switches of fuel filter part number P/N 9 550 17 200 0, which are potentially non-conforming.

### Justification for Allowing Pilot To Perform Visual Inspection

This final rule allows the visual inspections required by paragraph (g)(1) of this AD to be performed by an aircrew member holding at least a private pilot certificate. Performing a visual inspection to determine if the fuel filter by-pass indicator pop-up has been activated is not considered an action that must be performed by a certified person under 14 CFR 43.3. This authorization is an exception to our standard maintenance regulations.

### Costs of Compliance

The FAA estimates that this AD affects 775 engines installed on helicopters of U.S. registry. The FAA estimates the following costs to comply with this AD:

| Estimated Costs                                                  |                                         |            |                  |                        |
|------------------------------------------------------------------|-----------------------------------------|------------|------------------|------------------------|
| Action                                                           | Labor cost                              | Parts cost | Cost per product | Cost on U.S. operators |
| Visual inspection of fuel filter by-pass indicator               | 1 work-hour × \$85<br>per hour = \$85   | \$0        | \$85             | \$65,875               |
| Operational test of the fuel filter pre-blockage pressure switch | 3 work-hours × \$85<br>per hour = \$255 | \$0        | \$255            | \$197,625              |

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

#### **On-Condition Costs**

| <b>Action</b>                                    | <b>Labor cost</b>                       | <b>Parts cost</b> | <b>Cost per product</b> |
|--------------------------------------------------|-----------------------------------------|-------------------|-------------------------|
| Replace fuel filter pre-blockage pressure switch | 2 work-hours × \$85 per hour<br>= \$170 | \$225             | \$395                   |

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this 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**

This AD will not have federalism implications under Executive Order 13132. This AD will 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 that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will 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 Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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:



## **AIRWORTHINESS DIRECTIVE**

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

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**2021-13-03 Safran Helicopter Engines, S.A. (Type Certificate previously held by Turbomeca, S.A.):** Amendment 39-21608; Docket No. FAA-2020-1180; Project Identifier MCAI-2020-00517-E.

### **(a) Effective Date**

This airworthiness directive (AD) is effective August 13, 2021.

### **(b) Affected ADs**

None.

### **(c) Applicability**

This AD applies to Safran Helicopter Engines, S.A. (Type Certificate previously held by Turbomeca, S.A.) Arriel 2B, 2B1, 2C, 2C1, 2C2, 2S1 and 2S2 model turboshaft engines with a fuel filter pre-blockage pressure switch, part number 9 550 17 200 0, and serial number (S/N) 00001 to 12753, inclusive, and S/N A0001 to A0247, inclusive, installed.

### **(d) Subject**

Joint Aircraft System Component (JASC) Code 7321, Fuel Control/Turbine Engines.

### **(e) Unsafe Condition**

This AD was prompted by reports from the manufacturer of non-conforming fuel filter pre-blockage pressure switches manufactured before December 2016. The FAA is issuing this AD to prevent the non-conformity of the fuel filter pre-blockage pressure switch, which can cause its non-activation in case of fuel system contamination, with consequent opening of the by-pass without indication in the cockpit. The unsafe condition, if not addressed, could result in uncommanded in-flight shut-down of the engine, an emergency autorotation landing on a single engine helicopter, or an uncommanded in-flight shut-down of both engines on a twin engine helicopter.

### **(f) Compliance**

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

### **(g) Required Actions**

(1) After the effective date of this AD, during the pre-flight inspection for the first flight of each day the engine is operated, perform a visual inspection of the fuel filter by-pass indicator to determine if the fuel filter by-pass indicator pop-up has been activated.

(2) Within the next 300 hydro-mechanical metering unit (HMU) operating hours or 180 days after the effective date of this AD, whichever occurs first, perform an operational test of the fuel filter pre-blockage pressure switch in accordance with Task 73-23-01-750-801-A01–Pre-Blockage

Pressure Switch of the Fuel Filter Tests (Electrical), dated November 30, 2012, (the Task) from the Turbomeca Arriel 2 S1 Maintenance Manual.

(3) During any visual inspection required by paragraph (g)(1) of this AD, if the fuel filter by-pass indicator pop-up has been activated or, during the operational test required by paragraph (g)(2) of this AD, any discrepancy is detected as described by the Task, before next flight, replace the fuel filter pre-blockage pressure switch with a part eligible for installation.

(4) The actions required by paragraph (g)(1) of this AD may be performed by the owner/operator (pilot) holding at least a private pilot certificate, and must be entered into the aircraft records showing compliance with this AD, in accordance with 14 CFR 43.9 (a)(1) through (4) and 14 CFR 91.417(a)(2)(v). The records must be maintained as required by 14 CFR 91.417, 121.380, or 135.439.

#### **(h) Terminating Action**

Passing the operational test (no failure detected) of the fuel filter pre-blockage pressure switch, as required by paragraph (g)(2) of this AD, or replacement of the fuel filter pre-blockage pressure switch with a part eligible for installation, constitutes a terminating action for the repetitive visual inspections required by paragraph (g)(1) of this AD for that engine.

#### **(i) Definition**

A part eligible for installation is a fuel filter pre-blockage pressure switch that is not listed in the Applicability, paragraph (c), of this AD, or a fuel filter pre-blockage pressure switch that has passed the operational test (no discrepancies detected) required by paragraph (g)(2) of this AD.

#### **(j) 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 ECO Branch, 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.

#### **(k) 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 EASA AD 2019-0180, dated July 25, 2019, for more information. You may examine the EASA AD in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1180.

#### **(l) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Task 73-23-01-750-801-A01—Pre-Blockage Pressure Switch of the Fuel Filter Tests (Electrical), dated November 30, 2012, from the Turbomeca Arriel 2 S1 Maintenance Manual.

(ii) [Reserved]

(3) For Turbomeca service information identified in this AD, contact Safran Helicopter Engines, S.A., Avenue du 1er Mai, Tarnos, France; phone: +33 (0) 5 59 74 40 00.

(4) You may view this service information at 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.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on July 1, 2021.

Ross Landes,

Deputy Director for Regulatory Operations, Compliance & Airworthiness Division, Aircraft Certification Service.

[FR Doc. 2021-14520 Filed 7-8-21; 8:45 am]