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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2013-0381; Directorate Identifier 2013-NE-16-AD; Amendment 39-17764; AD 2014-04-06]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Turbomeca S.A. Turboshaft Engines**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for all Turbomeca S.A. Arrius 2B1, 2B1A, 2B2, and 2K1 turboshaft engines. This AD requires initial and repetitive inspections of the hydro-mechanical metering unit (HMU) high pressure pump drive gear shaft splines, cleaning and inspections of the sleeve assembly splines, and replacement of the HMU if it fails inspection. This AD was prompted by in-flight shutdowns caused by interrupted fuel supply at the HMU. We are issuing this AD to prevent in-flight shutdown and damage to the engine.

**DATES:** This AD becomes effective March 31, 2014.

**ADDRESSES:** The Docket Operations office is located at Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2013-0381; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the mandatory continuing airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (phone: 800-647-5527) is provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Anthony W. Cerra, Jr., Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7128; fax: 781-238-7199; email: anthony.cerra@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR Part 39 by adding an AD that would apply to the specified products. The NPRM was published in the Federal Register on July 25, 2013 (78 FR 44897). The NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

A number of in-flight shutdown occurrences have been reported for Arrius 2 engines. The results of the technical investigations concluded that these events were caused by deterioration of the splines on the high pressure (HP)/low pressure (LP) pump assembly drive shaft of the hydro-mechanical metering unit (HMU), which eventually interrupted the fuel supply to the engine. This condition, if not detected and corrected, could lead to further cases of engine in-flight shutdown, possibly resulting in forced landing.

To address these occurrences, Turbomeca published Service Bulletin (SB) No. SB 319 73 2825, which provides inspection instructions. After that SB was issued, further similar occurrences prompted Turbomeca to perform a new assessment of the issue. As a result, it was determined that repetitive inspections of the HMU, including an additional inspection of the sleeve assembly, was necessary to address the issue. Those instructions are provided in Turbomeca Mandatory SB (MSB) No. SB 319 73 2825 version G.

For the reasons described above, this AD requires repetitive inspections of drive gear shaft splines of the HP pump, and depending on findings, accomplishment of applicable corrective actions.

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2013-0381-0004>.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (78 FR 44897, July 25, 2013).

### **Conclusion**

We reviewed the available data and determined that air safety and the public interest require adopting this AD as proposed.

### **Costs of Compliance**

We estimate that this AD will affect about 162 engines installed on airplanes of U.S. registry. We also estimate that it will take about one hour per product to comply with this AD. The average labor rate is \$85 per hour. Required parts will cost about \$753 per engine. Based on these figures, we estimate the cost of this AD on U.S. operators to be \$135,756.

## **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.

We are 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**

We determined that 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 this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

## **List of Subjects in 14 CFR Part 39**

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

## **Adoption of 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 (AD):



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**2014-04-06 Turbomeca S.A.:** Amendment 39-17764; Docket No. FAA-2013-0381; Directorate Identifier 2013-NE-16-AD.

**(a) Effective Date**

This AD becomes effective March 31, 2014.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all Turbomeca S.A. Arrius 2B1, 2B1A, 2B2, and 2K1 turboshaft engines.

**(d) Reason**

This AD was prompted by in-flight shutdowns caused by interrupted fuel supply at the hydro-mechanical metering unit (HMU). We are issuing this AD to prevent in-flight shutdown and damage to the engine.

**(e) Actions and Compliance**

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

**(f) Initial Visual Inspection for HMUs Not Previously Inspected**

(1) On the effective date of this AD, for those HMUs that have not previously been inspected using Turbomeca Mandatory Service Bulletin (MSB) No. SB 319 73 2825, Version G, dated January 24, 2013, or earlier versions; perform an initial visual inspection of the HMU high-pressure pump drive gear shaft splines for wear, corrosion, scaling, or cracks, and clean and inspect the sleeve assembly splines for wear, corrosion, scaling, or cracks, at the following:

(i) For HMUs that have accumulated more than 150 operating hours (OHs) since new or since last overhaul, within 50 HMU OHs after effective date of this AD.

(ii) For HMUs that have accumulated 150 or fewer OHs since new or since last overhaul, before exceeding 200 HMU OHs.

**(g) Initial Visual Inspection for HMUs That Have Been Previously Inspected**

(1) On the effective date of this AD, for those HMUs that have been previously inspected per Turbomeca MSB No. SB 319 73 2825, Version G, dated January 24, 2013, or earlier versions; perform a visual inspection of HMU aft splines of the high pressure pump for wear, corrosion, scaling, or cracks, and clean and inspect the sleeve assembly splines for wear, corrosion, scaling, or cracks, at the following:

(i) For HMUs that have accumulated 300 OHs or more since last inspection, within 200 HMU OHs after effective date of this AD.

(ii) For HMUs that have accumulated fewer than 300 OHs since last inspection, before exceeding 500 HMU OHs.

#### **(h) Repetitive Visual Inspections of HMUs**

(1) Thereafter, repetitively visually inspect the HMU aft splines of the high pressure pump, and clean and inspect the sleeve assembly splines for wear, corrosion, scaling, or cracks, at intervals not to exceed 500 HMU OHs.

(2) If, during any initial or repetitive inspection required by this AD, an HMU does not pass inspection, then before further flight, replace the sleeve assembly on the affected high pressure pump drive gear shaft or replace the affected HMU.

#### **(i) Installation Prohibition**

After the effective date of this AD, do not install any engine on any helicopter unless the HMU was inspected as required by this AD.

#### **(j) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs to this AD. Use the procedures found in 14 CFR 39.19 to make your request.

#### **(k) Related Information**

(1) For more information about this AD, contact Anthony W. Cerra, Jr., Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; email: [anthony.cerra@faa.gov](mailto:anthony.cerra@faa.gov); phone: 781-238-7128; fax: 781-238-7199.

(2) Refer to MCAI European Aviation Safety Agency, AD 2013-0082, dated April 2, 2013, for more information. You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2013-0381-0004>.

(3) Turbomeca MSB No. SB 319 73 2825, Version G, dated January 24, 2013, which is not incorporated by reference in this AD, can be obtained from Turbomeca, S.A. using the contact information in paragraph (k)(4) of this AD.

(4) For service information identified in this AD, contact Turbomeca, S.A., 40220 Tarnos, France; phone: 33 (0)5 59 74 40 00; telex: 570 042; fax: 33 (0)5 59 74 45 15.

(5) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

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

None.

Issued in Burlington, Massachusetts, on February 10, 2014.

Robert J. Ganley,  
Acting Assistant Directorate Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.