



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2006-23809; Directorate Identifier 2005-NE-52-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Turbomeca S.A. Turboshift Engines**

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

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede airworthiness directive (AD) 2007-10-07, which applies to all Turbomeca S.A. Arriel 2B, 2B1, and 2B1A turboshift engines. AD 2007-10-07 currently requires an inspection of the splines of the coupling assembly and the hydro-mechanical metering unit (HMU) drive gear shaft for wear. This proposed AD would require the same inspection and expand the affected population. This proposed AD would also remove Arriel 2B1A engines from the applicability. We are proposing this AD to prevent failure of the HMU drive gear shaft, which could lead to damage to the engine and damage to the airplane.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 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 <http://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 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. 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.

### **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-2006-23809; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the mandatory continuing airworthiness information, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is 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](mailto:anthony.cerra@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section.

Include “Docket No. FAA-2006-23809; Directorate Identifier 2005-NE-52-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

On May 4, 2007, we issued AD 2007-10-07, Amendment 39-15048 (72 FR 26711, May 11, 2007). AD 2007-10-07 applies to all Turbomeca Arriel S.A. 2B, 2B1, and 2B1A turboshaft engines. AD 2007-10-07 requires an initial inspection of the splines of the coupling assembly and the HMU drive gear shaft for wear as well as an additional inspection every time the HMU is removed. AD 2007-10-07 resulted from reports of in-flight shutdown resulting from deterioration of the splines of the coupling assembly and the HMU drive gear shaft. We issued AD 2007-10-07 to prevent failure of the HMU drive gear shaft, which could lead to damage to the engine, and damage to the airplane.

### **Actions Since Existing AD Was Issued**

Since we issued AD 2007-10-07, Amendment 39-15048 (72 FR 26711, May 11, 2007), we received a report of HMU drive gear shaft spline wear on Turbomeca S.A. Arriel 2 engines. Also, since we issued AD 2007-10-07, the European Aviation Safety Agency issued AD 2013-0170, dated July 30, 2013. AD 2013-0170 requires inspection of the coupling assembly splines and the HMU drive gear shaft for wear. AD 2013-0170 also adds the Arriel 2C, 2C1, 2C2, 2S1, and 2S2 engines to the list of affected engines.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would retain the requirements of AD 2007-10-07, Amendment 39-15048 (72 FR 26711, May 11, 2007) except it would eliminate the additional inspection when the HMU is compliant after the 500 hour inspection and the HMU assembly is unchanged. This proposed AD would expand the applicability to include Turbomeca S.A. Arriel 2C, 2C1, 2C2, 2S1, and 2S2 engines, while removing Arriel 2B1A engines.

### **Costs of Compliance**

We estimate that this proposed AD would affect 470 engines installed on aircraft of U.S. registry. We also estimate that it would take about 2 hours per engine to comply with this proposed AD. The average labor rate is \$85 per hour. No parts are required. Based on these figures, we estimate the cost of this proposed AD on U.S. operators to be \$79,900.

### **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 have 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 that the proposed regulation:

- (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 proposed 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.

### **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 removing airworthiness directive (AD) 2007-10-07, Amendment 39-15048 (72 FR 26711, May 11, 2007), and adding the following new AD:

**Turbomeca S.A:** Docket No. FAA-2006-23809; Directorate Identifier 2005-NE-52-AD.

**(a) Comments Due Date**

The FAA must receive comments on this AD action by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD supersedes AD 2007-10-07, Amendment 39-15048 (72 FR 26711, May 11, 2007).

**(c) Applicability**

This AD applies to all Turbomeca S.A. Arriel 2B, 2B1, 2C, 2C1, 2C2, 2S1, and 2S2 turboshaft engines.

**(d) Unsafe Condition**

This AD was prompted by a report of an additional case of wear of the hydro-mechanical metering unit (HMU) drive gear shaft splines on both Turbomeca S.A. Arriel 2 engines on a twin-engine helicopter. We are issuing this AD to prevent failure of the HMU drive gear shaft, which could lead to damage to the engine and damage to the aircraft.

**(e) Compliance**

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

**(1) Arriel 2B and 2B1 Engines**

(i) If on the effective date of this AD the HMU has 500 or more operating hours since new or since last overhaul, then within 25 HMU operating hours from the effective

date of this AD, inspect the high-pressure (HP) pump drive gear shaft splines and coupling shaft assembly splines. Use paragraph 2.B.(1)(b) of Turbomeca S.A. Mandatory Service Bulletin (MSB) No. 292 73 2812, Version G, dated June 24, 2013, to do your inspection.

(ii) If on the effective date of this AD the HMU has less than 500 operating hours since new or since last overhaul, then inspect the HP pump drive gear shaft splines and coupling shaft assembly splines between 500 and 525 operating hours since new or since last overhaul. Use paragraph 2.B.(1)(b) of Turbomeca S.A. MSB No. 292 73 2812, Version G, dated June 24, 2013, to do your inspection.

**(2) Arriel 2C, 2C1, 2C2, 2S1, and 2S2 Engines**

(i) If on the effective date of this AD the HMU has 500 or more operating hours since new, since last overhaul, or if HMU operating hours are unknown, then within 200 HMU operating hours from the effective date of this AD, inspect the HP pump drive gear shaft splines and coupling shaft assembly splines. Use paragraph 2.B.(1)(b) of Turbomeca S.A. MSB No. 292 73 2822, Version F, dated June 21, 2013, to do your inspection.

(ii) If on the effective date of this AD the HMU has more than 300 but less than 500 operating hours since new or since last overhaul, then within 225 HMU operating hours, but no earlier than 500 or later than 700 HMU operating hours from the effective date of this AD, inspect the HP pump drive gear shaft splines and coupling shaft assembly splines. Use paragraph 2.B.(1)(b) of Turbomeca S.A. MSB No. 292 73 2822 Version F, dated June 21, 2013, to do your inspection.

(iii) If on the effective date of this AD the HMU has 300 operating hours or less since new or since last overhaul, then inspect the HP pump drive gear shaft splines and coupling shaft assembly splines between 500 and 525 HMU operating hours since new or

since last overhaul. Use paragraph 2.B.(1)(b) of Turbomeca S.A. MSB No. 292 73 2822, Version F, dated June 21, 2013, to do your inspection.

**(f) Credit for Previous Actions**

If, before the effective date of this AD, you inspected your HMU after 500 HMU operating hours since new or since last overhaul using an earlier version of Turbomeca S.A. MSB No. 292 73 2822, Version F, dated June 21, 2013, for 2C, 2C1, 2C2, 2S1 and 2S2 engines, or MSB No. 292 73 2812, Version G, dated June 24, 2013, for 2B or 2B1 engines, you have met the requirements of this AD.

**(g) Installation Prohibition**

After the effective date of this AD, do not install any HMU onto any engine, nor install any engine onto any helicopter with an HMU affected by this AD, unless the HMU passed the inspection required by paragraph (e)(1) of this AD for Arriel 2B and 2B1 engines or paragraph (e)(2) of this AD for Arriel 2C, 2C1, 2C2, 2S1, and 2S2 engines.

**(h) 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.

**(i) 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; phone: 781-238-7128; fax: 781-238-7199; email: [anthony.cerra@faa.gov](mailto:anthony.cerra@faa.gov).

(2) Refer to MCAI European Aviation Safety Agency AD 2013-0170, dated July 30, 2013, for related information. You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov/#!docketDetail;D=FAA-2006-23809>.

(3) Turbomeca S.A. MSB No. 292 73 2822, Version F, dated June 21, 2013, and Turbomeca S.A. MSB No. 292 73 2812, Version G, dated June 24, 2013, pertain to the

subject of this AD and can be obtained from Turbomeca S.A. using the contact information in paragraph (i)(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 1.

(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.

Issued in Burlington, Massachusetts, on February 11, 2014.

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

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