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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**Docket No. FAA-2012-1131; Directorate Identifier 2012-NE-34-AD; Amendment 39-17440; AD 2013-08-22]**

**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 certain Turbomeca S.A. Arriel 1A1, 1A2, 1B, 1C, 1C1, 1C2, 1D, 1D1, 1E2, 1K1, 1S, and 1S1 turboshaft engines. This AD requires daily post-flight checks of the engine tachometer's unit cycle-counting feature. This AD also requires ground-run functional checks within every 1,000 operating hours. This AD was prompted by detailed analysis and review of the accuracy of the engine's tachometer cycle-counting feature. We are issuing this AD to prevent uncontained engine failure and damage to the helicopter.

**DATES:** This AD becomes effective May 28, 2013.

**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.

**FOR FURTHER INFORMATION CONTACT:** Sanjana Murthy, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7750; fax: 781-238-7199; email: sanjana.murthy@faa.gov.

#### **SUPPLEMENTARY INFORMATION:**

##### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on December 11, 2012 (77 FR 73557). That NPRM proposed to correct an unsafe condition for the specified products. The mandatory continuing airworthiness information (MCAI) states:

Following detailed analysis and review of in-service feedback performed by Turbomeca on the Arriel 1 engines, the chapter 05-10 Airworthiness Limitation Section (ALS) of Arriel 1 Maintenance Manuals has been updated in order to clarify the definition and update the requirements relative to the cycle counting aid system (modification introduced in production by Turbomeca modification TU207 or TU243 and in-service, respectively, by Turbomeca Service Bulletin (SB) 292 80 0190 or SB 292 80 0168), add associated maintenance tasks, and modify the Power Turbine (PT) partial cycle counting method.

The SBs referenced above introduced the tachometer. The tachometer's cycle-counting feature, in some instances, produced results inconsistent with ground run checks. The inaccurate cycle-counting results of the tachometer can lead to exceeding life limits on critical rotating parts, which can cause uncontained engine failure and damage to the helicopter.

## **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (77 FR 73557, December 11, 2012).

## **Actions Since We Issued the Proposed Rule**

Since we issued the NPRM (77 FR 73557, December 11, 2012), the European Aviation Safety Agency (EASA) issued revised MCAI (EASA AD 2012-0187R2, dated December 6, 2012), which states that for affected engines that have a tachometer installed, but the tachometer is not used to count cycles, then no further action is required.

## **Changes to Actions and Compliance Section of This AD**

We evaluated the revised MCAI (EASA AD 2012-0187R2, dated December 6, 2012), and we agree that for affected engines that have a tachometer installed, but the tachometer is not used to count cycles, then no further compliance action is required. We changed paragraph (e) of the final rule by inserting a new paragraph (e)(1) to read:

"(1) If a tachometer is installed on the engine, but is not used to count cycles, then no further action is required."

We also changed paragraph (e)(2) of this AD to clarify the objective of the daily check. The objective is not only to compare the cycle-count values from the tachometer and the daily check, but also to verify that they agree. The NPRM (77 FR 73557, December 11, 2012) stated:

"During the post flight maintenance inspection after the last flight of each day, compare the cycles counted by the engine's tachometer unit with the cycles counted by the primary counting method."

The changed paragraph in this AD states:

"During the post-flight maintenance inspection after the last flight of each day, verify that the cycles counted by the engine's tachometer unit agree with the cycles counted by the primary counting method."

We also changed paragraph (e)(4) of this AD to clearly state that the ground-run functional check required every 1,000 operating hours is in addition to the daily inspections required by this AD. The NPRM (77 FR 73557, December 11, 2012) stated:

"If the engine tachometer cycle-counting feature remains accurate, then every 1,000 operating hours, perform a ground-run functional check of the tachometer unit cycle-counting feature."

The changed paragraph in this AD states:

"If the engine tachometer cycle-counting feature remains accurate, then every 1,000 operating hours, perform a ground-run functional check of the tachometer unit cycle-counting feature in

addition to the daily inspections required in paragraph (e)(2) of this AD. If the tachometer cycle-counting feature fails the check, thereafter, use only the primary cycle-counting method to count cycles."

### **Changes to Cost of Compliance**

We also changed the Costs of Compliance section of this AD. Paragraph (e)(4) of this AD requires a functional check of the tachometer cycle counting feature every 1,000 operating hours. The NPRM (77 FR 73557, December 11, 2012) did not include the cost of the functional check in the estimated annual costs of compliance, while this AD does include that cost. The fleet cost for the functional check every 1,000 operating hours is \$181,050, bringing the new total estimated fleet cost of compliance for this AD to \$19,493,050.

### **Conclusion**

We reviewed the available data and determined that air safety and the public interest require adopting the AD with the changes described previously. We determined that the changes we have made, that is, the change based on revised MCAI and the editorial changes made to improve clarity, will not increase the economic burden on any operator or increase the scope of the AD.

### **Costs of Compliance**

We estimate that this AD will affect about 1,420 engines installed in helicopters of U.S. registry. We do not have an estimate of how many engine tachometers will fail the inspection, so we have estimated the cost of repetitive inspections of engine tachometer units for one year and the cost of a required 1000-hour functional check. We estimate that an average of 320 checks will be required per year, and that it will take about 30 minutes per engine to perform a check of the engine's tachometer unit cycle-counting feature. We estimate the 1,000-operating-hour functional check to take 1.5 hours to complete. The average labor rate is \$85 per hour. No parts will be required. Based on these figures, we estimate the total cost of the AD on U.S. operators to be \$19,493,050.

### **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); and

(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.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; 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 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.

### **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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**2013-08-22 Turbomeca S.A.:** Amendment 39-17440; Docket No. FAA-2012-1131; Directorate Identifier 2012-NE-34-AD.

**(a) Effective Date**

This AD becomes effective May 28, 2013.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Turbomeca S.A. Arriel 1A1, 1A2, 1B, 1C, 1C1, 1C2, 1D, 1D1, 1E2, 1K1, 1S, and 1S1 turboshaft engines that have incorporated Modification TU 207 or TU 243, or have incorporated Turbomeca Service Bulletin (SB) No. 292 80 0168 or SB No. 292 80 0190.

**(d) Reason**

This AD was prompted by detailed analysis and review of the accuracy of the engine's tachometer cycle-counting feature. We are issuing this AD to prevent uncontained engine failure and damage to the helicopter.

**(e) Actions and Compliance**

(1) If a tachometer is installed on the engine, but is not used to count cycles, then no further action is required.

(2) During the post-flight maintenance inspection after the last flight of each day, verify that the cycles counted by the engine's tachometer unit agree with the cycles counted by the primary counting method.

(3) If the numbers are different, use the primary counting method thereafter to determine all cycle counts. Do not use the values from the tachometer cycle-counting feature.

(4) If the engine tachometer cycle-counting feature remains accurate, then every 1,000 operating hours, perform a ground-run functional check of the tachometer unit cycle-counting feature in addition to the daily inspections in paragraph (e)(2) of this AD. If the tachometer cycle-counting feature fails the check, thereafter, use only the primary cycle-counting method to count cycles.

(5) If the tachometer is replaced, follow the instructions in paragraphs (e)(2), (e)(3), and (e)(4) of this AD.

**(f) Alternative Methods of Compliance (AMOCs)**

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

**(g) Related Information**

(1) For more information about this AD, contact Sanjana Murthy, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7750; fax: 781-238-7199; email: sanjana.murthy@faa.gov.

(2) Refer to European Aviation Safety Agency AD 2012-0187R2, dated December 6, 2012, and Turbomeca S.A. SB No. 292 80 0168 and SB No. 292 80 0190, for related information.

(3) 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.

**(h) Material Incorporated by Reference**

None.

Issued in Burlington, Massachusetts, on April 16, 2013.  
Colleen M. D'Alessandro,  
Assistant Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.