

[Federal Register: April 27, 2009 (Volume 74, Number 79)]  
[Rules and Regulations]  
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[DOCID:fr27ap09-3]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2007-28077; Directorate Identifier 2007-NE-20-AD; Amendment 39-15889; AD 2009-09-03]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Turbomeca S.A. Arriel 2B and 2B1 Turboshift Engines**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Several cases of Gas Generator Turbine (HP Turbine) blade rearward displacement have been detected during borescope inspection or in repair centre following engine disassembly. Two of them resulted in blade rubs between the rear face of the fir-tree roots and the rear bearing support cover. High HP blade rearward displacement can potentially result in blade release due to fatigue of the blade, which would cause an uncommanded in-flight engine shutdown.

We are issuing this AD to prevent an uncommanded in-flight engine shutdown which could result in an emergency autorotation landing or, at worst, an accident.

**DATES:** This AD becomes effective June 1, 2009. The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of June 1, 2009.

**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:** James Lawrence, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park,

## **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 9, 2008 (73 FR 74661). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states that:

Several cases of Gas Generator Turbine (HP Turbine) blade rearward displacement have been detected during borescope inspection or in repair centre following engine disassembly. Two of them resulted in blade rubs between the rear face of the fir-tree roots and the rear bearing support cover.

High HP blade rearward displacement can potentially result in blade release due to fatigue of the blade, which would cause an uncommanded in-flight engine shutdown.

The evaluation of this condition has prompted to require a periodic borescope inspection in order to detect HP blade rearward displacement. Additionally, in case displacement is found above the specified limit, removal of Module 03 is required.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

### **Removal of the Arriel 2B1A Engine**

Since we issued the proposed AD, we discovered that we inadvertently listed the Arriel 2B1A engine in the applicability. We removed that model from the AD, as it is not certified for operation in the U.S.

### **Deletion of Reporting Requirement**

We deleted the Turbomeca reporting requirement from the AD, since we determined that the reporting requirement was unnecessary.

### **Conclusion**

We reviewed the available data and determined that air safety and the public interest require adopting the AD with the changes described previously.

### **Costs of Compliance**

We estimate that this AD will affect about 248 engines on helicopters of U.S. registry. We also estimate that it will take about 2 work-hours per engine to perform the actions and that the average labor rate is \$80 per work-hour. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$39,680. Our cost estimate is exclusive of possible warranty coverage.

## **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 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.

## **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 (telephone (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 AD:



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**2009-09-03 Turbomeca S.A.:** Amendment 39-15889. Docket No. FAA-2007-28077; Directorate Identifier 2007-NE-20-AD.

**Effective Date**

- (a) This airworthiness directive (AD) becomes effective June 1, 2009.

**Affected ADs**

- (b) None.

**Applicability**

- (c) This AD applies to Turbomeca S.A. Arriel 2B and 2B1 turboshaft engines. These engines are installed on, but not limited to, Eurocopter AS 350 B3 and EC 130 B4 helicopters.

**Reason**

- (d) Several cases of Gas Generator Turbine (HP Turbine) blade rearward displacement have been detected during borescope inspection or in repair centre following engine disassembly. Two of them resulted in blade rubs between the rear face of the fir-tree roots and the rear bearing support cover. High HP blade rearward displacement can potentially result in blade release due to fatigue of the blade, which would cause an uncommanded in-flight engine shutdown.

We are issuing this AD to prevent an uncommanded in-flight engine shutdown which could result in an emergency autorotation landing or, at worst, an accident.

**Actions and Compliance**

- (e) Unless already done, do the following actions:

**Initial Inspection**

(1) Perform an initial HP turbine borescope inspection according to Turbomeca S.A. Mandatory Service Bulletin (MSB) No. 292 72 2825, dated April 5, 2007 as follows:

- (i) For engines with fewer than 500 hours and 450 cycles since new or since the last HP turbine borescope inspection, inspect before reaching 600 hours or 500 cycles, whichever occurs first. Replace HP turbine modules with rearward turbine blade displacement greater than 0.5 mm.
- (ii) For the remaining engines, inspect within the next 100 hours. Replace HP turbine modules with rearward turbine blade displacement greater than 0.5 mm.

## **Repetitive Inspections**

(2) Perform repetitive HP turbine borescope inspections according to Turbomeca S.A. MSB No. 292 72 2825, dated April 5, 2007:

(i) Within 600 hours or 500 cycles from the previous inspection, whichever occurs first, if the rearward displacement of the turbine blades was less than 0.2 mm. Replace HP turbine modules with rearward turbine blade displacement greater than 0.5 mm.

(ii) Within 100 hours of the previous inspection if the rearward displacement of the turbine blades was between 0.2 mm and 0.5 mm. Replace HP turbine modules with rearward turbine blade displacement greater than 0.5 mm.

## **FAA AD Differences**

(f) For clarification, we restructured the actions and compliance wording of this AD.

(g) We deleted the Turbomeca reporting requirement from the AD, since we determined that the reporting requirement was unnecessary.

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

(h) The Manager, Engine Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

## **Related Information**

(i) Refer to EASA Airworthiness Directive 2007-0109, dated April 19, 2007, and Turbomeca S.A. MSB No. 292 72 2825, dated April 5, 2007, for related information.

(j) Contact James Lawrence, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: james.lawrence@faa.gov; telephone (781) 238-7176; fax (781) 238-7199, for more information about this AD.

## **Material Incorporated by Reference**

(k) You must use Turbomeca S.A. Mandatory Service Bulletin No. 292 72 2825, dated April 5, 2007, to do the actions required by this AD, unless the AD specifies otherwise.

(l) For service information identified in this AD, contact Turbomeca, 40220 Tarnos, France; telephone 33 05 59 74 40 00, fax 33 05 59 74 45 15.

(m) You may review copies at the FAA, New England Region, 12 New England Executive Park, Burlington, MA; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on April 16, 2009.  
Peter A. White,  
Assistant Manager, Engine and Propeller Directorate,  
Aircraft Certification Service.