

# 2010-02-01

## TURBOMECA S.A.

Amendment 39-16172

Docket No. FAA-2009-0503; Directorate Identifier 2009-NE-12-AD

### PREAMBLE

#### Effective Date

(a) This airworthiness directive (AD) becomes effective February 18, 2010.

#### Affected ADs

(b) None.

#### Applicability

(c) This AD applies to Turbomeca Arriel 1B, 1D, and 1D1 turboshaft engines. These engines are installed on, but not limited to, Eurocopter France AS350B, AS350BA, AS350B1, and AS350B2 helicopters.

#### Reason

(d) This AD results from several events of rupture of the Arriel 1 reduction gear box intermediate pinions. We are issuing this AD to prevent the rupture of the reduction gear box intermediate pinion, which could result in an overspeed of the power turbine, an uncommanded in-flight shutdown of the engine, and an emergency autorotation landing.

#### Actions and Compliance

(e) Unless already done, do the following actions.

(f) No later than 28 February 2011, replace the Reduction Gear Box Intermediate Pinions (P/N 0 292 70 779 0) with Pinions incorporating Turbomeca modification TU 232 in accordance with Turbomeca Mandatory Service Bulletin 292 72 0276 Version B dated 06 November 2008.

#### FAA AD Differences

(g) None.

(h) Alternative Methods of Compliance (AMOCs): 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 MCAI EASA Airworthiness Directive 2009-0002, dated January 7, 2009, for related information.

(j) Contact James Lawrence, Aerospace Engineer, Engine Certification Office, FAA, Engine and 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 Mandatory Service Bulletin No. 292 72 0276, Version B, dated November 6, 2008, to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) 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, or go to: <http://www.turbomeca-support.com>.

(3) 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>.

**FOR FURTHER INFORMATION CONTACT:** James Lawrence, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: james.lawrence@faa.gov; telephone (781) 238-7176; fax (781) 238-7199.

Issued in Burlington, Massachusetts, on December 31, 2009.

**Peter A. White**, *Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.*

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2009-0503; Directorate Identifier 2009-NE-12-AD; Amendment 39-16172; AD 2010-02-01]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Turbomeca S.A. Model Arriel 1B, 1D, and 1D1 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:

The rupture of the Reduction Gear Box Intermediate Pinion may result in an overspeed of the Power Turbine and, subsequently, an uncommanded engine in-flight shutdown. This could lead to an emergency autorotation landing on a single-engine helicopter.

We are issuing this AD to prevent the rupture of the reduction gear box intermediate pinion, which could result in an overspeed of the power turbine, an uncommanded in-flight shutdown of the engine, and an emergency autorotation landing.

**DATES:** This AD becomes effective February 18, 2010. The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of February 18, 2010.

**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 and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: james.lawrence@faa.gov; telephone (781) 238-7176; fax (781) 238-7199.

## **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 June 12, 2009 (74 FR 27946). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

Several events of rupture of the Arriel 1 Reduction Gear Box Intermediate Pinion have been reported in service. The ruptures have been determined to be originated at the pinion teeth root due to increased vibratory stresses. This increase in vibratory stresses is mainly caused by increased teeth wear over engine life time.

The rupture of the Reduction Gear Box Intermediate Pinion may result in an overspeed of the Power Turbine and, subsequently, an uncommanded engine in-flight shutdown. This could lead to an emergency autorotation landing on a single-engine helicopter.

To reduce the level of vibratory stresses and improve tooth resistance, Turboméca modification incorporates the addition of a damping ring below the teeth and a shot peening of the teeth roots. These modifications reduce the risk of incipient fatigue cracks.

This AD requires the replacement of all Reduction Gear Box Intermediate Pinions with Pinions incorporating Turboméca modification TU 232.

You may obtain further information by examining the MCAI in the AD docket.

### **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.

### **Conclusion**

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

### **Costs of Compliance**

Based on the service information, we estimate that this AD would affect about 13 products of U.S. registry. We also estimate that it would take about 6 work-hours per product to comply with this AD. The average labor rate is \$80 per work-hour. Required parts would cost about \$1,272 per product. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$22,776.

### **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: