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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0115; Directorate Identifier 2010-NE-40-AD; Amendment 39-16728; AD 2011-13-05]

RIN 2120-AA64

Airworthiness Directives; Turbomeca S.A. ARRIEL 2B and 2B1 Turboshaft Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

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 (GG) Turbine Blade rupture occurred in service on ARRIEL 2 twin engine applications and recently one on a single engine helicopter. For the case occurring in flight on a single engine helicopter (ARRIEL 2B1 engine), the pilot performed an emergency autorotation, landing the helicopter without further incident.

We are issuing this AD to prevent rupture of a GG turbine blade, which could result in an uncommanded in-flight shutdown and an emergency autorotation landing or accident.

DATES: This AD becomes effective August 12, 2011. The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 12, 2011.

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: Rose Len, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: rose.len@faa.gov; phone: (781) 238-7772; 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 February 18, 2011 (76 FR 9515). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

Several cases of Gas Generator (GG) Turbine Blade rupture occurred in service on ARRIEL 2 twin engine applications and recently one on a single engine helicopter. For the case occurring in flight on a single engine helicopter (ARRIEL 2B1 engine), the pilot performed an emergency autorotation, landing the helicopter without further incident.

The design of ARRIEL 2 engines (containment shield around the GG turbine) allows debris from a blade or the disc inter-blade area to be contained in the event of rupture. However, the rupture of a GG Turbine Blade may lead to an uncommanded In Flight Shut-Down which, on a single-engine helicopter, could ultimately lead to an emergency autorotation landing.

The most probable root cause of the ruptures is an excitation of one of the vibration modes of the GG Turbine Blade in conjunction with several secondary contributing factors which are deemed sufficient to reduce the stress margin of the blade to a level consistent with the rate of occurrences of ruptures encountered.

Turboméca has released TU166 modification which consists in inserting Blade dampers between the GG Turbine Disc and the GG Turbine Blade platform. Introduction of these dampers minimizes the effects of HP blade vibratory excitation and increases the blade tolerance for this type of stress.

Comments

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

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 537 products of U.S. registry. We also estimate that it would take about 60 work-hours per product to comply with this AD. The average labor rate is \$85 per work-hour. Required parts would cost about \$3,900 per product. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$4,833,000.

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 (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 AD:



2011-13-05 Turbomeca S.A.: Amendment 39-16728. Docket No. FAA-2011-0115; Directorate Identifier 2010-NE-40-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective August 12, 2011.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Turbomeca S.A. ARRIEL 2B and 2B1 turboshaft engines not modified by TU166 modification. These engines are installed on, but not limited to, Eurocopter AS 350 B3 and EC 130 B4 helicopters.

Reason

- (d) This AD results from:

Several cases of Gas Generator (GG) Turbine Blade rupture occurred in service on ARRIEL 2 twin engine applications and recently one on a single engine helicopter. For the case occurring in flight on a single engine helicopter (ARRIEL 2B1 engine), the pilot performed an emergency autorotation, landing the helicopter without further incident.

We are issuing this AD to prevent rupture of a GG turbine blade, which could result in an uncommanded in-flight shutdown and an emergency autorotation landing or accident.

Actions and Compliance

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

(1) Accomplish TU166 modification in accordance with the instructions specified within Turboméca Mandatory Service Bulletin (MSB) A292 72 3166 Version B, dated September 20, 2010, when the GG Turbine is replaced or when the engine or Module M03 is going through overhaul or repair, or within 1,300 cycles-in-service after the effective date of this AD, whichever occurs first.

(2) Accomplishment, before the effective date of this AD, of TU166 modification in accordance with the instructions of Turboméca MSB A292 72 3166 Version A, dated August 17, 2010, satisfies the requirement of paragraph (e)(1) of this AD.

FAA AD Differences

(f) This AD differs from the Mandatory Continuing Airworthiness Information (MCAI) and or service information by the following:

(1) European Aviation Safety Agency (EASA) AD No. 2010-0198, dated October 1, 2010, applies to the ARRIEL 2B1A engine. This AD does not apply to that model because it has no U.S. type certificate.

(2) EASA AD No. 2010-198 has a compliance date of "but no later than 25 months after the effective date of this AD. This AD has a compliance time of "1,300 cycles-in-service," based on average fleet usage data supplied by Turbomeca.

Other FAA AD Provisions

(g) The following provisions also apply to this AD:

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 MCAI EASA Airworthiness Directive 2010-0198, dated October 1, 2010, for related information.

(j) Contact Rose Len, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: rose.len@faa.gov; phone: (781) 238-7772; fax (781) 238-7199, for more information about this AD.

Material Incorporated by Reference

(k) You must use Turbomeca S.A. Mandatory Service Bulletin A292 72 3166 Version B, dated September 20, 2010, 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 S.A., 40220 Tarnos, France; e-mail: noria-dallas@turbomeca.com; 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>.

Issued in Burlington, Massachusetts, on June 14, 2011.
Peter A. White,
Acting Manager, Engine and Propeller Directorate,
Aircraft Certification Service.