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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-21242; Directorate Identifier 2005-NE-09-AD; Amendment 39-15442; AD 2008-07-01]

RIN 2120-AA64

Airworthiness Directives; Turbomeca Arriel 1B, 1D, 1D1, and 1S1 Turboshift Engines

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD) for certain Turbomeca Arriel 1B, 1D, 1D1, and 1S1 turboshift engines. That AD currently requires initial and repetitive position checks of the gas generator 2nd stage turbine blades on all Turbomeca Arriel 1B, 1D, 1D1, and 1S1 turboshift engines. That AD also currently requires initial and repetitive replacements of 2nd stage turbines on 1B, 1D, and 1D1 engines only. This AD requires adding a 3,000 hour life limit to Arriel 1B 2nd stage turbine blades. This AD results from reports of failures of second stage turbine blades. We are issuing this AD to prevent failures of the 2nd stage turbine blades, which could result in uncommanded in-flight engine shutdown, and subsequent forced autorotation landing or accident.

DATES: This AD becomes effective April 30, 2008. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of April 30, 2008. The Director of the Federal Register previously approved the incorporation by reference of Turbomeca Mandatory Alert Service Bulletins A292 72 0809, Update 1, dated October 4, 2005; and A292 72 0810, dated March 24, 2004; as of February 28, 2006 (71 FR 3754, January 24, 2006).

ADDRESSES: You can get the service information identified in this AD from Turbomeca, 40220 Tarnos, France; telephone (33) 05 59 74 40 00, fax (33) 05 59 74 45 15.

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: The FAA proposed to amend 14 CFR part 39 by superseding AD 2006-02-08R1, Amendment 39-14721 (71 FR 46390, August 14, 2006), with a proposed AD. The proposed AD applies to certain Turbomeca Arriel 1B, 1D, 1D1, and 1S1 turboshaft engines. We published the proposed AD in the Federal Register on March 9, 2007 (72 FR 10622). That action proposed to require:

- Initial and repetitive position checks of the 2nd stage turbine blades on Turbomeca Arriel 1B, 1D, 1D1, and 1S1 turboshaft engines.
- Replacement of 2nd stage turbines on 1B and 1D1 engines only.
- Initially replacing 2nd stage turbines in Arriel 1B, 1D, and 1D1 turboshaft engines.

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.

Comments

We provided the public the opportunity to participate in the development of this AD. We received no comments on the proposal or on the determination of the cost to the public.

Addition of an Optional Terminating Action

We have added to the AD, an option to terminate the repetitive position check requirements by installing a new turbine, part number (P/N) 0 292 25 039 0.

Correction of a Typographical Error in the Costs of Compliance

We corrected the number of turbine replacements in the Costs of Compliance from 587 to 571, and changed the total cost from \$3,905,240 to \$3,769,760.

Conclusion

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

Costs of Compliance

We estimate that this AD will affect 721 engines installed on helicopters of U.S. registry. We also estimate that it will take about 2 work-hours per engine to inspect all 721 engines and 40 work-hours per engine to replace about 571 2nd stage turbines on 1B and 1D1 engines, and that the average labor rate is \$80 per work-hour. Required parts would cost about \$3,200 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$3,769,760.

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 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 that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under 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 summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary at the address listed under ADDRESSES.

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 Federal Aviation Administration 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 removing Amendment 39-14721 (71 FR 46390, August 14, 2006) and by adding a new airworthiness directive, Amendment 39-15442, to read as follows:



2008-07-01 Turbomeca: Amendment 39-15442. Docket No. FAA-2005-21242; Directorate Identifier 2005-NE-09-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective April 30, 2008.

Affected ADs

(b) This AD supersedes AD 2006-02-08R1, Amendment 39-14721 (71 FR 46390, August 14, 2006).

Applicability

(c) This AD applies to Turbomeca Arriel 1B engines fitted with 2nd stage turbine modification TU 148, and Arriel 1D, 1D1, and 1S1 engines that do not incorporate TU 347. Arriel 1B engines are installed on, but not limited to, Eurocopter France AS-350B and AS-350A "Ecureuil" helicopters. Arriel 1D engines are installed on, but not limited to, Eurocopter France AS-350B1 "Ecureuil" helicopters. Arriel 1D1 engines are installed on, but not limited to, Eurocopter France AS-350B2 "Ecureuil" helicopters. Arriel 1S1 engines are installed on, but not limited to, Sikorsky Aircraft S-76A and S-76C helicopters.

Unsafe Condition

(d) This AD results from reports of failures of second stage blades. We are issuing this AD to prevent failures of the 2nd stage turbine blades, which could result in uncommanded in-flight engine shutdown, and subsequent forced autorotation landing or accident.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

Initial Relative Position Check of 2nd Stage Turbine Blades

(f) Do an initial relative position check of the 2nd stage turbine blades using the Turbomeca mandatory alert service bulletins (ASBs) specified in the following Table 1. Do the check before reaching any of the intervals specified in Table 1 or within 50 hours time-in-service after the effective date of this AD, whichever occurs later.

Table 1 - Initial and Repetitive Relative Position Check Intervals of 2nd Stage Turbine Blade

Turbomeca Engine Model	Initial Relative Position Check Interval	Repetitive Interval	Mandatory Alert Service Bulletin
Arriel 1B (modified per TU 148)	Within 1,200 hours time-since-new (TSN) or time-since-overhaul (TSO) or 3,500 cycles-since-new (CSN) or cycles-since-overhaul (CSO), whichever occurs earlier.	Within 200 hours time-in-service-since-last-relative-position-check (TSLRPC).	A292 72 0807, Update 1, dated October 26, 2006.
Arriel 1D1 and Arriel 1D	Within 1,200 hours TSN or TSO or 3,500 CSN or CSO, whichever occurs earlier.	Within 150 hours TSLRPC.	A292 72 0809, Update No. 1, dated October 4, 2005.
Arriel 1S1	Within 1,200 hours TSN or TSO or 3,500 CSN or CSO, whichever occurs earlier.	Within 150 hours TSLRPC.	A292 72 0810, dated March 24, 2004.

Repetitive Relative Position Check of 2nd Stage Turbine Blades

(g) Recheck the relative position of 2nd stage turbine blades at the TSLRPC intervals specified in Table 1 of this AD, using the mandatory ASBs indicated.

Credit for Previous Relative Position Checks

(h) Relative position checks of 2nd stage turbine blades done using Turbomeca Service Bulletin A292 72 0263, Update 1, 2, 3, or 4, or A292 72 0807, dated March 24, 2004, comply with the initial requirements of paragraph (f) of this AD.

Initial Replacement of 2nd Stage Turbines on Arriel 1B, 1D, and 1D1 Engines

(i) Initially replace the 2nd stage turbine with a new or overhauled 2nd stage turbine as follows:

- (1) Before accumulating 1,500 hours TSN or TSO on the module for Arriel 1D and 1D1 engines.
- (2) Before accumulating 2,200 hours TSN or TSO on the module or 3,000 total hours TSN on the 2nd stage turbine blades, whichever occurs first, for Arriel 1B engines.

Repetitive Replacements of 2nd Stage Turbines on Arriel 1B, 1D, and 1D1 Engines

(j) Thereafter, replace the 2nd stage turbine with a new or overhauled 2nd stage turbine within every 1,500 hours TSN or TSO on the module for Arriel 1D and 1D1 engines, and within every 2,200 hours TSN or TSO on the module or 3,000 total hours TSN on the 2nd stage turbine blades, for Arriel 1B engines.

Criteria for Overhauled 2nd Stage Turbines

(k) Do the following to overhauled 2nd stage turbines, referenced in paragraphs (i) and (j) of this AD:

- (1) You must install new blades in the 2nd stage turbines of overhauled Arriel 1D and 1D1 engines.
- (2) You may install either overhauled blades with fewer than 3,000 total hours TSN or new blades in the 2nd stage turbines of overhauled Arriel 1B engines.

Relative Position Check Continuing Compliance Requirements

(l) All 2nd stage turbines, including those that are new or overhauled, must continue to comply with the actions specified in paragraphs (f), (g), and (j) of this AD.

Optional Terminating Action

(m) Installing a new turbine, P/N 0 292 25 039 0, reference TU 347, terminates the requirements to perform the repetitive actions specified in paragraphs (g) and (j) of this AD.

Alternative Methods of Compliance

(n) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

Related Information

(o) The EASA airworthiness directive 2007-0018R1, dated August 14, 2007, also addresses the subject of this AD.

(p) 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

(q) You must use the service information specified in Table 2 of this AD to perform the actions required by this AD.

(1) The Director of the Federal Register approved the incorporation by reference of Turbomeca Mandatory Alert Service Bulletin A292 72 0807, Update 1, dated October 26, 2006, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The Director of the Federal Register previously approved the incorporation by reference of Turbomeca Mandatory Alert Service Bulletins A292 72 0809, Update 1, dated October 4, 2005; and A292 72 0810, dated March 24, 2004; as of February 28, 2006 (71 FR 3754, January 24, 2006).

(3) Contact Turbomeca, 40220 Tarnos, France; telephone (33) 05 59 74 40 00, fax (33) 05 59 74 45 15 for a copy of this service information. 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>.

Table 2 – Incorporation by Reference

Turbomeca Mandatory Alert Service Bulletin No.	Page	Update No.	Date
A292 72 0807	ALL	1	October 26, 2006
Total Pages: 18			
A292 72 0809	ALL	1	October 4, 2005
Total Pages: 18			

Issued in Burlington, Massachusetts, on March 17, 2008.

Ann C. Mollica,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. E8-5819 Filed 3-25-08; 8:45 am]