[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2014-0164; Directorate Identifier 2014-NE-02-AD]

RIN 2120-AA64

Airworthiness Directives; Turbomeca S.A. Turboshaft Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all Turbomeca S.A. Arriel 1A1, 1A2, 1B, 1C, 1C1, 1C2, 1D, 1D1, 1E2, 1K1, 1S, 1S1, 2B, 2B1, 2C, 2C1, 2C2, 2S1, and 2S2 turboshaft engines. This proposed AD was prompted by reports of uncommanded in-flight shutdowns on Turbomeca S.A. Arriel 1 and Arriel 2 engines following rupture of the 41-tooth gear forming part of the 41/23-tooth bevel gear located in the engine accessory gearbox (AGB). This proposed AD would require an initial one-time vibration check of the engine AGB on certain higher risk Arriel 1 and Arriel 2 model engines. This proposed AD would also require repetitive vibration checks of the engine AGB for all Arriel 1 and Arriel 2 engines at every engine shop visit. We are proposing this AD to prevent failure of the engine AGB, which could lead to in-flight shutdown and damage to the engine, which may result in damage to the aircraft.

DATES: We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to http://www.regulations.gov and follow the instructions for sending your comments electronically.

- Mail: Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

- Fax: 202-493-2251.

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.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2014-0164; 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 proposed AD, the mandatory continuing airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (phone: 800-

647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Mark Riley, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: (781) 238-7758; fax: (781) 238-7199; email: mark.riley@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2014-0164; Directorate Identifier 2014-NE-02-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD.

Discussion

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2014-0036, dated

February 11, 2014 (referred to herein after as "MCAI"), to correct an unsafe condition for the specified products. The MCAI states:

> Several cases of uncommanded in-flight shut-down (IFSD) have been reported on ARRIEL 1 or ARRIEL 2 engines following rupture of the 41-tooth gear forming part of the 41/23 tooth bevel gear located in the accessory gearbox (AGB) within engine module M01.
>
> Results of subsequent investigations showed that the meshing quality of the bevel gear may have contributed to tooth rupture.
>
> The rupture of the AGB 41-tooth gear may lead to loss of driving of equipment essential to engine operation.
>
> This condition if not detected and corrected, could lead to an uncommanded engine in-flight shut-down and may ultimately lead to an emergency landing.

We are proposing an initial one-time vibration check of the engine AGB on certain higher risk Arriel 1 and Arriel 2 model engines. We are also proposing repetitive vibration checks of the engine AGB for all Arriel 1 and Arriel 2 engines at every engine shop visit. You may examine the MCAI in the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2014-0164.

Relevant Service Information

Turbomeca S.A. has issued Mandatory Service Bulletin (MSB) No. 292 72 0839, Version B, dated November 25, 2013, and MSB No. 292 72 2849, Version B, dated November 25, 2013. The service information describes procedures for correcting the unsafe condition described in the MCAI.

FAA's Determination and Requirements of This Proposed AD

This product has been approved by the aviation authority of France and is approved for operation in the United States. Pursuant to our bilateral agreement with the

European Community, EASA has notified us of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all information provided by EASA and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design. This proposed AD would require vibration checks of the 41/23-tooth bevel gear assembly of the AGB on certain Turbomeca S.A. Arriel 1 and Arriel 2 model turboshaft engines and, if a discrepancy is found, replacement of the AGB with a part eligible for installation.

Costs of Compliance

We estimate that this proposed AD affects 1,268 engines installed on aircraft of U.S. registry. We also estimate that it would take about 4 hours per engine to comply with the inspection requirement in this proposed AD. The average labor rate is $85 per hour. Based on these figures, we estimate the cost of this proposed AD on U.S. operators to be $431,120.

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 proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 proposed regulation:

(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),

(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.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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):

Turbomeca S.A.: Docket No. FAA-2014-0164; Directorate Identifier 2014-NE-02-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Turbomeca S.A. Arriel 1A1, 1A2, 1B, 1C, 1C1, 1C2, 1D, 1D1, 1E2, 1K1, 1S, 1S1, 2B, 2B1, 2C, 2C1, 2C2, 2S1, and 2S2 turboshaft engines.

(d) Reason

This AD was prompted by reports of uncommanded in-flight shutdowns on Turbomeca S.A. Arriel 1 and Arriel 2 engines following rupture of the 41-tooth gear forming the 41/23-tooth bevel gear located in the engine accessory gearbox (AGB). We are issuing this AD to prevent failure of the engine AGB, which could lead to in-flight shutdown and damage to the engine, which may result in damage to the aircraft.

(e) Actions and Compliance

Unless already done, do the following.

(1) For all Turbomeca S.A. Arriel 1B, 1D, 1D1, 2B, and 2B1 turboshaft engines, perform a one-time vibration check of the AGB 41/23-tooth bevel gear meshing within 32 months of the effective date of this AD, as follows:

(i) For all Turbomeca S.A. Arriel 1B, 1D, and 1D1 engines, except those engines with an AGB installed with a serial number (S/N) listed in Figure 1 of Turbomeca S.A. Mandatory Service Bulletin (MSB) No. 292 72 0839, Version B, dated November 25, 2013, use paragraphs 6.A. through 6.C. of Turbomeca S.A. MSB No. 292 72 0839, Version B, dated November 25, 2013, to perform the vibration check. The reporting requirements in paragraphs 6.A.(1)(c), 6.A.(2)(b), and 6.B.(1)(c) and the requirement to return module M01 in paragraph 6.B.(2)(b)2, of Turbomeca S.A. MSB No. 292 72 0839, Version B, dated November 25, 2013, are not required by this AD.

(ii) For all Turbomeca S.A. Arriel 2B and 2B1engines, except those engines with an AGB installed with a S/N listed in Figure 1 of Turbomeca MSB No. 292 72 2849, Version B, dated November 25, 2013, use paragraphs 6.A. through 6.C. of Turbomeca S.A. MSB No. 292 72 2849, Version B, dated November 25, 2013, to perform the vibration check. The reporting requirements in paragraphs 6.A.(1)(c), 6.A.(2)(b), and 6.B.(1)(c), and the requirement to return module M01 in paragraph 6.B.(2)(b)2, of Turbomeca S.A. MSB No. 292 72 2849, Version B, dated November 25, 2013, are not required by this AD.

(2) For all affected Turbomeca S.A. engines, during each engine shop visit after the effective date of this AD, perform a vibration check of the AGB 41/23-tooth bevel gear meshing. Guidance on performing the vibration check during an engine shop visit

can be found in the service information listed in paragraph (i)(3) in the Related Information section.

(3) If the AGB does not pass the vibration check required by paragraphs (e)(1) or (e)(2) of this AD, replace the AGB with a part eligible for installation.

(f) Credit for Previous Action

If you performed a vibration check of the AGB before the effective date of this AD using Turbomeca S.A. MSB No. 292 72 0839, Version A, dated September 9, 2013; or MSB No. 292 72 2849, Version A, dated September 9, 2013, or during an engine shop visit per paragraph (e)(2) of this AD, you met the initial inspection requirement of paragraph (e)(1) of this AD.

(g) Definition

For the purposes of this AD, an "engine shop visit" is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine flanges. The separation of engine flanges solely for the purpose of transportation without subsequent engine maintenance does not constitute an engine shop visit.

(h) Alternative Methods of Compliance (AMOCs)

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

(i) Related Information

(1) For more information about this AD, contact Mark Riley, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: (781) 238-7758; fax: (781) 238-7199; email: mark.riley@faa.gov.

(2) Refer to MCAI European Aviation Safety Agency AD 2014-0036, dated February 11, 2014, for related information. You may examine the MCAI in the AD docket on the Internet at http://www.regulations.gov by searching for and locating it in Docket No. FAA-2014-0164.

(3) Turbomeca S.A. MSB No. 292 72 0839, Version B, dated November 25, 2013; and MSB No. 292 72 2849, Version B, dated November 25, 2013, provide guidance on performing the one-time vibration check. Arriel 1 Technical Instruction (TI) No. 292 72 0839, Version E, dated February 20, 2014; Arriel 1 TI No. 292 72 0840, dated November 29, 2013; Arriel 2 TI No. 292 72 2849, Version E, dated February 20, 2014; and Arriel 2 TI No. 292 72 2850, dated November 29, 2013, provide detailed instructions on performing the one-time vibration check for Arriel 1 and Arriel 2 engines, respectively. Turbomeca Engine Test Bed Acceptance Test Specifications CCT No. 0292009400, Version T; CCT No. 0292019400, Version R; CCT No. 0292019690, Version I; CCT No. 029201530, Version K; CCT No. 0292019610, Version K; CCT No. 0292029450, Version J; CCT No. 0292029490, Version I; CCT No. 0292029440, Version I; CCT No. 0292029480, Version K; CCT No. 0292029520, Version H; CCT No. 0292029410, Version L; CCT No. 0292029530, Version H; or Turbomeca ID No. 383952; or Turbomeca RTD No. X 292 65 327 2, provide information on performing a vibration check during an engine shop visit. These service documents can be obtained from Turbomeca S.A. using the contact information in paragraph (i)(4) of this proposed AD.

(4) For service information identified in this proposed 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.

(5) 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.

Issued in Burlington, Massachusetts, on May 28, 2014.

Colleen M. D'Alessandro,
Assistant Directorate Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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