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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0961; Directorate Identifier 2011-NE-22-AD; Amendment 39-18090; AD 2015-02-22]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Corporation Turboprop and Turboshaft Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding airworthiness directive (AD) 2012-14-06 for certain Rolls-Royce Corporation (RRC) 250-C20, -C20B, and -C20R/2 turboshaft engines. AD 2012-14-06 required a one-time visual inspection and fluorescent-penetrant inspection (FPI) on certain 3rd-stage and 4th-stage turbine wheels for cracks in the turbine blades. This new AD replaces the one-time visual inspection and FPI with repetitive visual inspections and FPIs. This AD also adds certain engine models to the applicability. This AD was prompted by the determination that the one-time inspections required by AD 2012-14-06 should be changed to repetitive inspections. We are issuing this AD to prevent failure of 3rd-stage and 4th-stage turbine wheel blades, which could cause engine failure and damage to the aircraft.

DATES: This AD is effective March 9, 2015.

ADDRESSES: For service information identified in this AD, contact Rolls-Royce Corporation, 450 South Meridian Street, Indianapolis, IN 46225-1103; phone: 888-255-4766 or 317-230-2720; email: royce.com">helicoptercustsupp@rolls-royce.com; Internet: www.rolls-royce.com. 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.govby searching for and locating Docket No. FAA-2011-0961; or in person at the Docket Management Facility 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 address for the Docket

Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: John Tallarovic, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, 2300 E. Devon Ave., Des Plaines, IL 60018; phone: 847-294-8180; fax: 847-294-7834; email: john.m.tallarovic@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2012-14-06, Amendment 39-17120 (77 FR 40479, July 10, 2012), ("AD 2012-14-06"). AD 2012-14-06 applied to certain RRC 250-C20, -C20B, and -C20R/2 turboshaft engines. The NPRM published in the Federal Register on October 2, 2014 (79 FR 59463). The NPRM was prompted by determination that the one-time inspections required by AD 2012-14-06 should be changed to repetitive inspections. The NPRM proposed to replace the one-time visual inspection and FPI with repetitive visual inspections and FPIs, and also to require a visual inspection and FPI after any engine hot start. The NPRM also proposed to add certain engine models to the applicability. We are issuing this AD to prevent failure of 3rd-stage and 4th-stage turbine wheel blades, which could cause engine failure and damage to the aircraft.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM (79 FR 59463, October 2, 2014) and the FAA's response to each comment.

Request To Remove a Certain Proposed Inspection Requirement

RRC requested that we remove the requirement to inspect the 3rd-stage and 4th-stage turbine wheels after a hot start because they are already prohibited from further use after a hot start by the maintenance instructions.

We agree. Maintenance instructions clearly direct replacement of 3rd-stage and 4th-stage turbine wheels following a hot start. We removed from this AD the requirement to perform a visual inspection and an FPI on the affected turbine wheels after any hot start.

Request To Limit Applicability

RRC requested that we restrict applicability of the AD to only those affected engines that are installed on MD helicopters because the majority of failures have occurred on MD helicopters.

We disagree. Failures have occurred in installations on other than MD helicopters. Also, the FAA cannot ensure that parts once used on MD helicopters have not been subsequently installed on other engines or helicopter models. We did not change this AD.

Request To Delete a Certain Reference

RRC requested that we remove, from the Actions Since AD 2012-14-06 Was Published paragraph, reference to 3rd-stage turbine wheel failures by replacing the words "3rd-stage and" with the words "two additional" because additional failures only occurred in 4th-stage turbine wheels.

We agree. The new failures since AD 2012-14-06 was published were in 4th-stage turbine wheels. However, the paragraph, Actions Since AD 2012-14-06 was Published, which appeared in the NPRM (October 2, 2014 79 FR 59463), does not appear in this final rule. We did not change this AD.

Request To Revise a Certain Paragraph

RRC requested that we add the word "potential" before the word "failures" in the Actions Since AD 2012-14-06 Was Published paragraph.

We agree. However, the paragraph, Actions Since AD 2012-14-06 Was Published, which appeared in the NPRM (October 2, 2014 79 FR 59463), does not appear in this final rule. We did not change this AD.

Request To Revise the Costs of Compliance

RRC requested that we change, in the Costs of Compliance paragraph, the estimated time to conduct the inspection from one hour to two hours.

We agree. We changed our estimate in this AD to reflect two hours of labor to conduct the inspection.

Request To Revise the Labor Rate

RRC requested that we change, in the Costs of Compliance paragraph, the labor rate from $85 per hour to $116 per hour.

We disagree. The rate of $85 per hour is provided by the FAA Office of Aviation Policy and Plans for us to use when estimating the labor costs of complying with AD requirements. We did not change this AD.

Request To Revise the Costs of Compliance

RRC requested that we add the word "initial" before the stated cost in the Costs of Compliance paragraph.

We partially agree. We did not insert the word "initial", but we clarified that our estimate of costs of compliance are for one inspection, whether initial or recurring.

Request To Revise a Definition

RRC requested that we change our definition of a hot start.

We partially agree. We agree with the suggested changes because they clarify the definition of a hot start. However, in our reply to a prior comment, we agreed to remove the inspection requirements associated with a hot start. Therefore, we have deleted all requirements in this AD to conduct inspections after hot starts, and have deleted the Definition paragraph.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (79 FR 59463, October 2, 2014) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (79 FR 59463, October 2, 2014).

We also determined that these changes will not significantly increase the economic burden on any operator or increase the scope of this AD.

Costs of Compliance

We estimate that this AD affects 3,769 engines installed on aircraft of U.S. registry. We also estimate that it will take about 2 hours per engine to comply with the inspection requirement of this AD. The average labor rate is $85 per hour. Based on these figures, we estimate the cost of this AD on U.S. operators for one inspection to be $640,730.

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),

(3) Will not affect intrastate aviation in Alaska, 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.

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 removing Airworthiness Directive (AD) 2012-14-06, Amendment 39-17120 (77 FR 40479, July 10, 2012), and adding the following new AD:

2015-02-22 Rolls-Royce Corporation: Amendment 39-18090; Docket No. FAA-2011-0961; Directorate Identifier 2011-NE-22-AD.

(a) Effective Date

This AD is effective March 9, 2015.

(b) Affected ADs

This AD supersedes AD 2012-14-06, Amendment 39-17120 (77 FR 40479, July 10, 2012).

(c) Applicability

This AD applies to Rolls-Royce Corporation (RRC) 250-B17, -B17B, -B17C, -B17D, -B17E, -B17F, -B17F/1, -B17F/2 turboprop engines; and 250-C20, -C20B, -C20F, -C20J, -C20R, -C20R/1, -C20R/2, -C20R/4, -C20S, and -C20W turboshaft engines; with either a 3rd-stage turbine wheel, part number (P/N) 23065818, or a 4th-stage turbine wheel, P/N 23055944, installed.

(d) Unsafe Condition

This AD was prompted by investigations that revealed that not all 3rd-stage and 4th-stage turbine wheel blade failures were identified by the one-time inspections required by AD 2012-14-06, Amendment 39-17120 (77 FR 40479, July 10, 2012). We determined that to address the unsafe condition, repetitive inspections are required, triggered by hours since last inspection (HSLI). We are issuing this AD to prevent failure of 3rd-stage and 4th-stage turbine wheel blades, which could cause engine failure and damage to the aircraft.

(e) Compliance

Comply with this AD within the compliance times specified, unless already done. After the effective date of this AD:

(1) Within 1,750 HSLI, remove the affected turbine wheels and perform a visual inspection and a fluorescent-penetrant inspection (FPI) on the removed turbine wheels for cracks at the trailing edge of the turbine blades near the fillet at the rim.

(2) Any time the power turbine is disassembled, perform a visual inspection and an FPI on the affected turbine wheels for cracks at the trailing edge of the turbine blades, near the fillet at the rim.

(3) Thereafter, re-inspect every 1,750 HSLI.

(4) Do not return to service any turbine wheels that have cracks detected.

(f) Alternative Methods of Compliance (AMOCs)

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

(g) Related Information

(1) For more information about this AD, contact John Tallarovic, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, 2300 E. Devon Ave., Des Plaines, IL 60018; phone: 847-294-8180; fax: 847-294-7834; email: john.m.tallarovic@faa.gov.

(2) RRC Alert Commercial Engine Bulletin (CEB) No. CEB-A-1407, Revision 3, dated May 19, 2014, and Alert CEB No. CEB-A-72-4098, Revision 3, dated May 19, 2014 (combined into one document), which are not incorporated by reference in this AD, can be obtained from RRC, using the contact information in paragraph (g)(3) of this AD.

(3) For service information identified in this AD, contact Rolls-Royce Corporation Customer Support, 450 South Meridian Street, Indianapolis, IN 46225-1103; phone: 888-255-4766 or 317-230-2720; email: helicoptercustsupp@rolls-royce.com; Internet: www.rolls-royce.com.

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

(h) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on January 20, 2015.
Colleen M. D'Alessandro,
Assistant Directorate Manager, Engine & Propeller Directorate,
Aircraft Certification Service.