



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0961; Directorate Identifier 2011-NE-22-AD]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Corporation Turboshaft Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede Airworthiness Directive (AD) 2015-02-22, which applies to certain Rolls-Royce Corporation (RRC) model 250 turboprop and turboshaft engines. AD 2015-02-22 currently requires repetitive visual inspections and fluorescent-penetrant inspection (FPIs) on certain 3rd-stage and 4th-stage turbine wheels for cracks in the turbine wheel blades. Since we issued AD 2015-02-22, we determined that it is necessary to remove the 4th-stage wheels at the next inspection. We are also proposing to revise the applicability to remove all RRC turboprop engines and add additional turboshaft engines. This proposed AD would require repetitive visual inspections and FPIs of 3rd-stage turbine wheels while removing from service 4th-stage turbine wheels. We are proposing this AD to correct the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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-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 proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket 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: 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:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this NPRM. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2011-0961; Directorate Identifier 2011-NE-22-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of 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 we receive about this NPRM.

Discussion

On January 20, 2015, we issued AD 2015-02-22, Amendment 39-18090 (80 FR 5452, February 2, 2015), (“AD 2015-02-22”), for certain 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. Note that, for the purposes of this proposed AD, we now consider the RRC 250-C20S engine a turboprop engine. RRC engine type certificate data sheet No. E4CE, Revision 42, dated June 29, 2010, classifies it as a turboshaft engine, but then clarifies in Note 11 that it functions as a turboprop engine.

AD 2015-02-22 requires repetitive visual inspections and FPIs on certain 3rd-stage and 4th-stage turbine wheels. AD 2015-02-22 resulted from the determination that the one-time inspections required by AD 2012-14-06 (77 FR 40479, July 10, 2012) should be changed to repetitive inspections. We issued AD 2015-02-22 to prevent failure of 3rd-stage and 4th-stage turbine wheel blades, damage to the engine, and damage to the aircraft.

Actions Since AD 2015-02-22 Was Issued

Since we issued AD 2015-02-22, we determined that it is necessary to remove the 4th-stage wheels at the next inspection, before the scheduled life limit for these wheels. We also determined that the RRC turboprop engines are not susceptible to the unsafe condition and therefore do not require inspection or removal. We are, therefore, not including RRC turboprop engines in the applicability of this proposed AD. Additionally,

we determined two additional part number turbine wheels are susceptible to the unsafe condition and are being included in this proposed AD.

FAA’s Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would retain certain requirements of AD 2015-02-22. This proposed AD would revise the requirement for the initial inspection from 1,750 hours since last inspection (HSLI) to 1,775 hours since last visual inspection and FPI or before the next flight after the effective date of this AD, whichever occurs later. Based on discussions with the manufacturer, we found that 1,775 hours since last visual inspection and FPI is an appropriate interval. We are also requiring inspections for additional part number wheels: (P/N) RR30000236 for the 3rd-stage turbine wheel and P/N RR30000240 for the 4th-stage turbine wheel.

This proposed AD would continue to require repetitive inspections of 3rd-stage turbine wheels. This proposed AD would also require removing from service 4th-stage turbine wheels at a reduced life limit. In addition, this proposed AD would add RRC 250-C300/A1 and 250-C300/B1 turboshaft engines in the applicability.

Costs of Compliance

We estimate that this proposed AD affects 3,769 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
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Inspect 3 rd - stage wheels, part number (P/N) 23065818 or RR30000236	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$320,365
Replace 4 th - stage wheel, P/N 23055944 or RR30000240	0 work-hours x \$85 per hour = \$0	\$5,653 (pro- rated cost of part)	\$5,653	\$21,306,157

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 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 that the 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 removing Airworthiness Directive (AD) 2015-02-22, Amendment 39-18090 (80 FR 5452, February 2, 2015), and adding the following new AD:

Rolls-Royce Corporation: Docket No. FAA-2011-0961; Directorate Identifier 2011-NE-22-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces Airworthiness Directive (AD) 2015-02-22, Amendment 39-18090 (80 FR 5452, February 2, 2015).

(c) Applicability

This AD applies to Rolls-Royce Corporation (RRC) 250-C20, -C20B, -C20F, -C20J, -C20R, -C20R/1, -C20R/2, -C20R/4, -C20W, -C300/A1, and -C300/B1 turboshaft engines with either a 3rd-stage turbine wheel, part number (P/N) 23065818 or RR30000236, or a 4th-stage turbine wheel, P/N 23055944 or RR30000240, installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by in-service turbine wheel blade failures that revealed the need for changes to the inspections of certain 3rd-stage turbine wheels and removal from service of certain 4th-stage turbine wheels. We are issuing this AD to prevent failure of the 3rd-stage and 4th-stage turbine wheel blades, damage to the engine, and damage to the aircraft.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(1) Within 1,775 hours since last visual inspection and fluorescent-penetrant inspection (FPI) or before the next flight after the effective date of this AD, whichever occurs later:

(i) Remove 3rd-stage turbine wheels, P/N 23065818, and perform a visual inspection and an FPI on the removed turbine wheels for cracks at the trailing edge of the turbine blades, near the fillet at the rim.

(ii) Thereafter, re-inspect the affected turbine wheels every 1,775 hours since last inspection (HSLI).

(2) Within 2,025 hours after the effective date of this AD:

(i) Remove 3rd-stage turbine wheels, P/N RR30000236, and perform a visual inspection and an FPI on the removed turbine wheels for cracks at the trailing edge of the turbine blades, near the fillet at the rim.

(ii) Thereafter, re-inspect the turbine wheels every 2,025 HSLI.

(3) Any time the power turbine is disassembled, perform a visual inspection and an FPI on 3rd-stage turbine wheels, P/N 23065818 or P/N RR30000236, for cracks at the trailing edge of the turbine blades, near the fillet at the rim.

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

(5) Within 1,775 HSLI, or at the next engine shop visit, whichever occurs later, remove 4th-stage turbine wheels, P/N 23055944, from service.

(6) Within 2,025 HSLI, or at the next engine shop visit, whichever occurs later, remove 4th-stage turbine wheels, P/N RR30000240, from service.

(g) Definition

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

(h) Alternative Methods of Compliance (AMOCs)

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

(i) Related Information

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.

Issued in Burlington, Massachusetts, on March 17, 2017.

Thomas A. Boudreau,
Acting Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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