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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-1327; Directorate Identifier 2012-NE-47-AD; Amendment 39-18793; AD 2017-03-02]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding airworthiness directive (AD) 2014-16-10 for all Rolls-Royce plc (RR) RB211 Trent 768-60, 772-60, and 772B-60 turbofan engines. AD 2014-16-10 required initial and repetitive ultrasonic inspections (UIs) of the affected low-pressure (LP) compressor blades. This AD requires the UIs in AD 2014-16-10 while reducing the inspection threshold. This AD was prompted by revised service information to reduce the inspection threshold for UI of the LP compressor blades. We are issuing this AD to correct the unsafe condition on these products.

DATES: This AD is effective March 22, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of March 22, 2017.

ADDRESSES: For service information identified in this final rule, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE24 8BJ; phone: 011-44-1332-242424; fax: 011-44-1332-245418, or email: http://www.rolls-royce.com/contact/civil_team.jsp. You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2012-1327.

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-2012-1327; 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 mandatory continuing airworthiness information, 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: Robert Green, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: robert.green@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2014-16-10, Amendment 39-17934 (79 FR 48961, August 19, 2014), (“AD 2014-16-10”). AD 2014-16-10 applied to RR RB211 Trent 768-60, 772-60, and 772B-60 turbofan engines. The NPRM published in the Federal Register on November 1, 2016 (81 FR 75762). The NPRM proposed to continue to require the UIs in AD 2014-16-10 while applying the revised inspection threshold.

Comments

We gave the public the opportunity to participate in developing this AD. We considered the comments received.

Request To Change the Costs of Compliance

RR noted the 40 hours in the Costs of Compliance to undertake the inspection in RR Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AH465, Revision 2, dated May 11, 2016, exceeds the RR guidance provided in the NMSB. The NMSB states that the on-wing inspection takes 16 hours to accomplish if the blades are installed, and total time of 28 hours if the blades are removed.

We disagree. The Costs of Compliance estimate assumed the blades would be removed for inspection, which includes the time required to remove the blades and reinstall them afterward to return the engine to service. We did not change this AD.

Request To Add Credit for Previous Actions

RR requested that previous inspection in accordance with RR Alert NMSB RB.211-72-AH465, Revision 1, dated July 10, 2015, or earlier revisions, be considered as credit for previous action, against the inspection requirements of this AD to align with European Aviation Safety Agency, (EASA) AD 2016-0141, dated July 18, 2016 (corrected July 20, 2016).

We agree. The inspections done using RR Alert NMSB RB.211-72-AH465, Revision 1, dated July 10, 2015, or the initial issue, dated July 15, 2013, are acceptable. We added RR Alert NMSB RB.211-72-AH465, Revision 1, dated July 10, 2015, and the initial issue, dated July 15, 2013, to paragraph (f) of this AD.

Conclusion

We reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting this AD as proposed.

Related Service Information Under 1 CFR Part 51

RR has issued Alert NMSB RB.211-72-AH465, Revision 2, dated May 11, 2016. The NMSB describes procedures for performing a UI of the LP compressor blades. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 56 engines installed on airplanes of U.S. registry.
We estimate the following costs to comply with this AD:

Estimated Costs

| Action | Labor cost | Parts cost | Cost per product | Cost on U.S. operators |
|------------|--|------------|------------------|------------------------|
| Inspection | 40 work-hours × \$85 per hour = \$3,400 | \$0 | \$3,400 | \$190,400 |

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

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 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.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends part 39 of the Federal Aviation Regulations (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) 2014-16-10, Amendment 39-17934 (79 FR 48961, August 19, 2014), and adding the following new AD:



2017-03-02 Rolls-Royce plc: Amendment 39-18793; Docket No. FAA-2012-1327; Directorate Identifier 2012-NE-47-AD.

(a) Effective Date

This AD is effective March 22, 2017.

(b) Affected ADs

This AD supersedes AD 2014-16-10, Amendment 39-17934 (79 FR 48961, August 19, 2014).

(c) Applicability

This AD applies to Rolls-Royce plc (RR) RB211 Trent 768-60, 772-60, and 772B-60 turbofan engines, with low-pressure (LP) compressor blade, part number (P/N) FK23411, FK25441, FK25968, FW11901, FW15393, FW23643, FW23741, FW23744, KH23403, or KH23404, installed.

(d) Unsafe Condition

This AD was prompted by LP compressor blade partial airfoil release events. We are issuing this AD to prevent LP compressor blade airfoil separations, damage to the engine, and damage to the airplane.

(e) Compliance

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

(1) Ultrasonic Inspection (UI) of LP Compressor Blade

(i) After the effective date of this AD, for LP compressor blades that have accumulated less than 1,800 cycles since new (CSN) or cycles since last inspection (CSLI), perform a UI of each LP compressor blade before the blade exceeds 2,400 CSN or CSLI. Repeat the UI of the blade before exceeding 2,400 CSLI.

(ii) For any LP compressor blade that exceeds 1,800 CSN on the effective date of this AD, inspect the blade before exceeding 600 flight cycles after the effective date of this AD or before exceeding 3,600 CSN, whichever occurs first. Thereafter, perform the repetitive inspections before exceeding 2,400 CSLI.

(iii) For any LP compressor blade that exceeds 2,200 CSLI on September 23, 2014 (the effective date of AD 2014-16-10), inspect the blade before exceeding 3,000 CSLI or before further flight, whichever occurs later. Thereafter, perform the repetitive inspections before exceeding 2,400 CSLI.

(iv) Use paragraph 3, excluding subparagraphs 3.C.(2)(b), 3.D.(2), and 3.G, of RR Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AH465, Revision 2, dated May 11, 2016, to perform the inspections required by this AD.

(2) Use of Replacement Blades

(i) After the effective date of this AD, LP compressor blade, P/N FK23411, FK25441, FK25968, FW11901, FW15393, FW23643, FW23741, FW23744, KH23403, or KH23404, that has accumulated at least 2,400 CSN or CSLI is eligible for installation if the blade has passed the UI required by this AD.

(ii) Reserved.

(f) Credit for Previous Actions

You may take credit for the UI required by paragraph (e) of this AD, if you performed the UI before the effective date of this AD using RR Alert NMSB RB.211-72-AH465, Revision 1, dated July 10, 2015, or the initial issue, dated July 15, 2013; or RR NMSB No. RB.211-72-G702, dated May 23, 2011; or RR NMSB No. RB.211-72-G872, Revision 2, dated March 8, 2013, or earlier revisions; or RR NMSB No. RB.211-72-H311, dated March 8, 2013; or the Engine Manual E-Trent-1RR, Task 72-31-11-200-806.

(g) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

(h) Related Information

(1) For more information about this AD, contact Robert Green, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: robert.green@faa.gov.

(2) Refer to MCAI European Aviation Safety Agency, (EASA) AD 2016-0141, dated July 18, 2016 (corrected July 20, 2016), for more 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-2012-1327.

(i) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Rolls-Royce plc Alert Non-Modification Service Bulletin RB.211-72-AH465, Revision 2, dated May 11, 2016.

(ii) Reserved.

(3) For Rolls-Royce plc service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE24 8BJ; phone: 011-44-1332- 242424; fax: 011-44-1332-245418, or email: http://www.rolls-royce.com/contact/civil_team.jsp.

(4) You may view this service information at FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may view this service information 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 January 27, 2017.
Colleen M. D'Alessandro,
Manager, Engine & Propeller Directorate,
Aircraft Certification Service.