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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-0593; Directorate Identifier 2015-NE-08-AD; Amendment 39-18254; AD 2015-17-21]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Rolls-Royce plc (RR) RB211-535E4-37, RB211-535E4-B-37, and RB211-535E4-C-37 turbofan engines. This AD requires reducing the cyclic life limits for certain high-pressure turbine (HPT) disks, removing those disks that have exceeded the new life limit, and replacing them with serviceable parts. This AD was prompted by RR updating the life limits for certain HPT disks. We are issuing this AD to prevent failure of the HPT disk, which could result in uncontained disk release, damage to the engine, and damage to the airplane.

DATES: This AD becomes effective December 2, 2015.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 2, 2015.

ADDRESSES: For 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: 011-44-1332-249936; email: http://www.rolls-royce.com/contact/civil_team.jsp; Internet: <https://www.aeromanager.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. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-0593.

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-2015-0593; 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 (MCAI), 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: Wego Wang, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7134; fax: 781-238-7199; email: wego.wang@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to the specified products. The NPRM was published in the Federal Register on April 29, 2015 (80 FR 23737). The NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

An engineering analysis, carried out by RR, of the lives of critical parts of the RB211-535E4-37 engine, has resulted in reduced cyclic life limits for certain high pressure (HP) turbine discs. The reduced limits are published in the RR RB211-535E4-37 Time Limits Manual (TLM): 05-10-01-800-000, current Revision dated July 2014.

Operation of critical parts beyond these reduced cyclic life limits may result in part failure, possibly resulting in the release of high-energy debris, which may cause damage to the aeroplane and/or injury to the occupants.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (80 FR 23737, April 29, 2015).

Conclusion

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

Related Service Information Under 1 CFR Part 51

We reviewed Task 05-00-01-800-000, "Recording and Control of the Lives of Parts", dated July 1, 2015, of the RR RB211-535E4-37/23 TLM, publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015; and Task 05-10-01-800-000, "Group A Parts Lives-CONFIG-1", dated July 1, 2014, of the RR RB211-535E4-37/23 TLM, publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015. This service information provides revised life limits for the affected HPT disks. This service information is reasonably available because the interested parties have access to it through their normal course of business or see ADDRESSES for other ways to access this service information.

Related Service Information

We reviewed RR Non-Modification Service Bulletin (NMSB) No. RB.211-72-G188, Revision No. 1, dated October 30, 2013. The NMSB describes the updated lifing analysis of the affected HPT disks.

Costs of Compliance

We estimate that this AD affects 650 engines installed on airplanes of U.S. registry. We also estimate that it would take about 0 hours per engine to comply with this AD. The average labor rate is \$85 per hour. The pro-rated cost of required parts would be about \$12,213 per engine. Based on these figures, we estimate the cost of this AD on U.S. operators to be \$7,938,450.

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 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 this AD:

- (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.

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 adding the following new airworthiness directive (AD):



2015-17-21 Rolls-Royce plc: Amendment 39-18254; Docket No. FAA-2015-0593; Directorate Identifier 2015-NE-08-AD.

(a) Effective Date

This AD becomes effective December 2, 2015.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Rolls-Royce plc (RR), RB211-535E4-37, RB211-535E4-B-37, and RB211-535E4-C-37 turbofan engines.

(d) Reason

This AD was prompted by RR updating the life limits for certain high-pressure turbine (HPT) disks. We are issuing this AD to prevent failure of the HPT disk, which could result in uncontained disk release, damage to the engine, and damage to the airplane.

(e) Actions and Compliance

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

(1) After the effective date of this AD, use Task 05-00-01-800-000, "Recording and Control of the Lives of Parts", dated July 1, 2015, of the Rolls-Royce (RR) RB211-535E4-37/23 Time Limits Manual (TLM), publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015 to determine the new life limits for the affected engine models and configurations, with the exception of those engine models mentioned in paragraph (e)(2) of this AD.

(2) For RR RB211-535E4-B-37 or RB211-535E4-C-37 engines with an affected HPT disk that was previously installed on an RB211-535E4-37 engine operated under Flight Plan A, use Task 05-10-01-800-000, "Group A Parts Lives-CONFIG-1", dated July 1, 2014, of the RR RB211-535E4-37/23 TLM, publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015 to re-calculate equivalent cycles since new to obtain the new life limit.

(3) If an affected engine model has an HPT disk installed with part number (P/N) UL27681 or UL39767, remove the affected HPT disk before the accumulated cyclic life exceeds either 19,500 flight cycles (FCs) under Flight Plan A, or 14,700 FCs under Flight Plan B, or within 25 FCs after the effective date of this AD, whichever occurs later.

(4) For all affected engines, other than those specified in paragraph (e)(3) of this AD, remove each HPT disk before exceeding its applicable life limit as specified in Task 05-00-01-800-000, "Recording and Control of the Lives of Parts", dated July 1, 2015, of the RR RB211-535E4-37/23 TLM, publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015; and Task 05-10-01-800-000, "Group A Parts Lives-CONFIG-1", dated July 1, 2014, of the RR RB211-535E4-37/23 TLM, publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015.

(5) Install an HPT disk eligible for installation.

(f) Definition

For the purpose of this AD, a part eligible for installation is one with a P/N listed in Task 05-00-01-800-000, "Recording and Control of the Lives of Parts", dated July 1, 2015, of the RR RB211-535E4-37/23 TLM, publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015; and Task 05-10-01-800-000, "Group A Parts Lives–CONFIG-1", dated July 1, 2014, of the RR RB211-535E4-37/23 TLM, publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015 with a total accumulated cyclic life that is less than the applicable life limit specified in those Tasks.

(g) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, FAA, 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 Wego Wang, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7134; fax: 781-238-7199; email: wego.wang@faa.gov.

(2) Refer to MCAI European Aviation Safety Agency AD 2014-0249R1, dated February 18, 2015, 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-2015-0593.

(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) Task 05-00-01-800-000, "Recording and Control of the Lives of Parts", dated July 1, 2015, of the Rolls-Royce (RR) RB211-535E4-37/23 Time Limits Manual (TLM), publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015.

(ii) Task 05-10-01-800-000, "Group A Parts Lives–CONFIG-1", dated July 1, 2014, of the RR RB211-535E4-37/23 TLM, publication reference T-211(535)-6RR, Revision 49, dated July 1, 2015.

(3) For RR 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: 011-44-1332-249936; email: http://www.rolls-royce.com/contact/civil_team.jsp; Internet: <https://www.aeromanager.com>.

(4) You may view this service information at 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.

(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 August 21, 2015.
Colleen M. D'Alessandro,
Directorate Manager, Engine & Propeller Directorate,
Aircraft Certification Service.