[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0186; Directorate Identifier 2017-NE-07-AD; Amendment 39-18899; AD 2017-10-25]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Rolls-Royce Deutschland Ltd & Co KG (RRD) model Spey 506-14A, Spey 555-15, Spey 555-15H, Spey 555-15N, and Spey 555-15P turbofan engines. This AD requires reducing the maximum approved life limits for certain high-pressure compressor (HPC) stage 12 rotor disks. We are issuing this AD to correct the unsafe condition on these products.

DATES: This AD becomes effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

We must receive comments on this AD by [INSERT DATE 45 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. Follow the instructions for submitting comments.

- Mail: 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 Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11-15827 Dahlewitz, Blankenfelde-Mahlow, Germany; phone: +49 0 33-7086-1944; fax: +49 0 33-7086-3276. You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803. 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-2017-0186; 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 AD, the mandatory continuing airworthiness information (MCAI), regulatory evaluation, any comments received, and other information. The 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: 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:

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and opportunity for public comment. We invite you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2017-0186; Directorate Identifier 2017-NE-07-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD 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 with FAA personnel concerning this 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 2017-0014, dated January 30, 2017 (referred to hereinafter as "the MCAI"), to correct an unsafe condition for the specified products. The MCAI states:

> Based on revised stress analysis and life calculation, Rolls-Royce Deutschland (RRD) determined new provisional life limits for high pressure compressor (HPC) stage 12 rotor disks, Part Number (P/N) EU25917, P/N EU56963, P/N JR10242 and P/N JR18449, reducing the maximum approved life limits currently defined in the RRD Spey 555-15 Engine Maintenance Manual (EMM), Chapter 5-10-1, currently at the revision dated July 2015 and the Engine Overhaul Manual (EOM), Chapter 5-10, revision dated November 2014. The

> Spey 506-14A EMM, Chapter 5-10-1 revision dated October 1993 as well as the Spey 506-14A EOM, Chapter 5-10 revision dated November 1992 already contain the applicable life limit. Failure to replace an affected HPC stage 12 rotor disk before exceeding these limits, could lead to an uncontained engine failure, possibly resulting in damage to, and/or reduced control of, the aeroplane. To address this potential unsafe condition, RRD issued Alert Non-Modification Service Bulletin (NMSB) Sp72-A1071 to provide instructions to determine (re-calculate) the consumed and remaining service life for each part. For the reasons described above, this AD requires re-calculation of the service life (consumed and remaining) of the affected HPC stage 12 rotor disks and, depending on the results, implementation of the life limits. It is expected that the affected reduced life limits are introduced into a next revision of the RRD Spey 555-15 Engine EMM and EOM.

You may obtain further information by examining the MCAI in the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0186.

Related Service Information

RRD has issued Alert Non-Modification Service Bulletin (NMSB) Sp72-A1071, Revision 1, dated January 27, 2017. The Alert NMSB provides instructions to re-calculate the consumed and remaining service life for HPC stage 12 rotor disks, part number (P/N) EU25917, P/N EU56963, P/N JR10242, and P/N JR18449. This service information is available by the means identified in the ADDRESSES section.

FAA's Determination and Requirements of This AD

This product has been approved by the aviation authority of Germany, 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. We are issuing 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 AD requires reducing the maximum approved life limits and re-calculating the consumed and remaining service life for HPC stage 12 rotor disks P/N EU25917, P/N EU56963, P/N JR10242, and P/N JR18449.

FAA's Determination of the Effective Date

No domestic operators use this product. Therefore, we find that notice and opportunity for prior public comment are unnecessary and that good cause exists for making this amendment effective in less than 30 days.

Costs of Compliance

We estimate that this AD affects 0 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
Pro-rated lost life	1 work-hour X $85 per hour = $85	$3,900	$3,985	$0

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):

2017-10-25 **Rolls-Royce Deutschland Ltd & Co KG:** Amendment 39-18899; Docket No. FAA-2017-0186; Directorate Identifier 2017-NE-07-AD.

(a) Effective Date

This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce Deutschland Ltd & Co KG (RRD) Spey 506-14A, Spey 555-15, Spey 555-15H, Spey 555-15N, and Spey 555-15P turbofan engines with high-pressure compressor (HPC) stage 12 rotor disks, part number (P/N) EU25917, P/N EU56963, P/N JR10242, or P/N JR18449, installed.

(d) Subject

Joint Aircraft System Component (JASC) 7230, Turbine Engine Compressor Section.

(e) Reason

This AD was prompted by RRD re-calculating the life limits for HPC stage 12 rotor disks, P/N EU25917, P/N EU56963, P/N JR10242, and P/N JR18449. We are issuing this AD to prevent failure of the HPC stage 12 rotor disk, uncontained HPC stage 12 rotor disk release, damage to the engine, and damage to the airplane.

(f) Compliance

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

(g) Required Actions

(1) Within 30 days after the effective date of this AD, determine if:

(i) the affected part was ever operated in a Spey 555-15, Spey 555-15H, Spey 555-15N, or Spey 555-15P engine model, or

(ii) the affected part was operated soley in a Spey 506-14A engine.

(2) If the affected part was operated solely in a Spey 506-14A engine with no history of operating in a Spey 555-15, Spey 555-15H, Spey 555-15N, or Spey 555-15P engine, no further action is required.

(3) If the affected part was operated in in both Spey 506-14A and Spey 555-15, Spey 555-15H, Spey 555-15N, or Spey 555-15P engine models, or solely in Spey 555-15, Spey 555-15H, Spey 555-15N, or Spey 555-15P engines, re-calculate the consumed cyclic life (and remaining service life) using the Maximum Approved Life for each engine model and take-off monitoring procedure as defined in Figures 1 and 2 to paragraph (g) of this AD.

(4) After the effective date of this AD, the Maximum Approved Lives for the affected parts are as defined in Figure 2 to paragraph (g) of this AD. Calculate the

consumed cyclic life (and remaining service life) using the Spey 555-15, Spey 555-15H, Spey 555-15N, or Spey 555-15P Maximum Approved Lives in Figure 2 to paragraph (g) of this AD.

(5) For Spey 506-14A engines with an affected part installed, that do not have an engine shop visit after the effective date of this AD before the re-calculated consumed cyclic life of the affected part exceeds 14,700 flight cycles (FC), remove the affected part from service before the re-calculated consumed cyclic life exceeds 14,700 FC, or 50 FC or 30 days after the effective date of this AD, whichever occurs later.

(6) For Spey 555-15, Spey 555-15H, Spey 555-15N, or Spey 555-15P engines with an affected part installed, that do not have an engine shop visit after the effective date of this AD before the re-calculated consumed cyclic life of the affected part exceeds the Maximum Approved Lives in Figure 2 to paragraph (g) of this AD, remove the affected part from service before the re-calculated consumed cyclic life exceeds the later of the following:

(i) Maximum Approved Lives in Figure 2 to paragraph (g) of this AD, or

(ii) 200 FC or 90 days after the effective date of this AD, or before exceeding the In-Service Replacement Limits defined in Figure 3 to paragraph (g) of this AD, whichever occurs first.

Figure 1 to paragraph (g) – Spey 506-14A High-Pressure Compressor (HPC) Stage 12 Rotor Disk Maximum Approved Life

HPC stage 12 rotor disk, P/N EU25917, EU56963, and JR10242	14,700 flight cycles

Figure 2 to paragraph (g) – Spey 555-15, Spey 555-15H, Spey 555-15N, or Spey 555-15P HPC Stage 12 Rotor Disk, P/N EU25917, EU56963, JR10242, and JR18449, Maximum Approved Life

Take-off Monitoring Procedure		Maximum Approved Lives (flight cycles)
(A) With no high-pressure (HP) revolutions per minute (RPM) monitoring		11,500
HP RPM monitoring; stated RPM not exceeded on more than 15% of occasions	(B) 100% N2	13,600
	(C) 99% N2	17,100
	(D) 98% N2	19,300
	(E) 97% N2	20,500
(F) No HP RPM monitoring required Datum (Average N2 at 99.5%)		16,800

Figure 3 to paragraph (g) – Spey 555-15, Spey 555-15H, Spey 555-15N, or Spey 555-15P HPC Stage 12 Rotor Disk, P/N EU25917, EU56963, JR10242, and JR18449, In-service Replacement Limits

Take-off Monitoring Procedure		In-service Replacement Limits (flight cycles)
(A) With no HP RPM monitoring		13,800
HP RPM monitoring; stated RPM not exceeded on more than 15% of occasions	(B) 100% N2	15,600
	(C) 99% N2	17,600
	(D) 98% N2	19,700
	(E) 97% N2	22,100
(F) No HP RPM monitoring required Datum (Average N2 at 99.5%)		17,300

(h) Installation Prohibition

After the effective date of this AD, installation of a serviceable spare engine or release to service of an engine after any shop visit is allowed, provided the affected part

has not exceeded the Maximum Approved Lives in Figures 1 or 2 to paragraph (g) of this AD.

(i) Definition

For the purpose of this AD, a shop visit is the induction of an engine into the shop for maintenance or overhaul. The separation of engine flanges solely for the purpose of transporting the engine without subsequent engine maintenance does not constitute an engine shop visit.

(j) 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.

(k) 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 2017-0014, dated January 30, 2017, 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-2017-0186.

(3) RRD Alert Non-Modification Service Bulletin Sp72-A1071, Revision 1, dated January 27, 2017, which is not incorporated by reference in this AD, can be obtained from RRD, using the contact information in paragraph (k)(4) of this AD.

(4) For RRD service information identified in this AD, contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11-15827 Dahlewitz, Blankenfelde-Mahlow, Germany; phone: +49 0 33-7086-1944; fax: +49 0 33-7086-3276.

(5) You may view this service information at FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on May 9, 2017.

Robert J. Ganley,
Acting Manager, Engine & Propeller Directorate,
Aircraft Certification Service.
[FR Doc. 2017-10437 Filed: 5/25/2017 8:45 am; Publication Date: 5/26/2017]