



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0200; Project Identifier MCAI-2020-01520-E; Amendment 39-21495; AD 2021-08-01]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG (Type Certificate previously held by Rolls-Royce plc) Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Rolls-Royce Deutschland Ltd & Co KG (RRD) RB211 Trent 768-60, RB211 Trent 772-60, and RB211 Trent 772B-60 model turbofan engines. This AD was prompted by maintenance that resulted in damage to certain low-pressure compressor (LPC) blades, resulting in increased susceptibility to cracking in the LPC blade root. This AD requires initial and repetitive inspections of the blade root of certain LPC blades and re-lubrication of the LPC blades and LPC disk. Depending on the results of the inspections, this AD requires replacement of the LPC blades. As a terminating action to the inspection and re-lubrication requirements, this AD requires restoration of the LPC blade as well as examination and re-lubrication of the LPC disk. The FAA is issuing this AD to address the unsafe condition on these products.

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

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this 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 <https://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.

For service information identified in this final rule, contact Rolls-Royce plc, P.O. Box 31, Derby, DE24 8BJ, United Kingdom; phone: +44 (0)1332 242424; website: <https://www.rolls-royce.com/contact-us.aspx>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0200.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0200; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for the Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Kevin M. Clark, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7088; fax: (781) 238-7199; email: kevin.m.clark@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2020-0253, dated November 12, 2020, to address an unsafe condition for the specified products. The MCAI states:

In-service experience has shown that certain LP compressor blades installed on Trent 700 engines may have been subjected to maintenance actions that caused damage, making the affected blades more susceptible to cracking.

This condition, if not detected and corrected, could lead to blade or disc failure and consequent engine in-flight shut-down, possibly resulting in reduced control of the aeroplane.

To address this potential unsafe condition, Rolls-Royce issued the inspection NMSB to provide inspection instructions. Rolls-Royce also issued the restoration NMSB to provide in-shop restoration instructions.

For the reasons described above, this [EASA] AD requires repetitive on-wing ultra-sonic (US) inspections of the blade roots of the affected blades, subsequent re-lubrication of the affected blades and discs and, depending on findings, accomplishment of applicable corrective action(s). This [EASA] AD also requires in-shop restoration of the affected blades and discs to a serviceable condition, which constitutes terminating action for the repetitive US inspections and re-lubrications as required by this [EASA] AD.

You may obtain further information by examining the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0200.

FAA's Determination

This product has been approved by EASA 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. The FAA is issuing this AD because the agency evaluated all the relevant information provided by EASA and has determined that the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed Rolls-Royce (RR) Trent 700 Series Propulsion Systems Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AK492, Revision 1, dated November 30, 2020. This service information specifies procedures for performing initial and repetitive ultrasonic inspections of LPC blade roots, and re-lubrication of LPC blades and disks.

The FAA also reviewed RR Trent 700 Series Propulsion Systems Alert NMSB RB.211-72-AK522, Revision 1, dated November 30, 2020. This service information specifies procedures for inspecting LPC blades, applying high intensity shot peening to the blade roots to arrest any cracks, inspecting the LPC disk to determine serviceability, and re-lubrication procedures.

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 ADDRESSES.

AD Requirements

This AD requires initial and repetitive inspections of the blade root of certain LPC blades and re-lubrication of the LPC blades and LPC disk. Depending on the results of the inspection, this AD requires replacement of the LPC blades. As a mandatory terminating action, at the next engine shop visit, this AD requires restoration of the LPC blades to a serviceable condition and examination and re-lubrication of the LPC disk.

Differences Between the AD and MCAI or Service Information

EASA AD 2020-0253, dated November 12, 2020, includes RRD RB211 Trent 772C-60 model turbofan engines in its Applicability section. This model engine is not included in the Applicability of this AD because it has not been type certificated in the United States.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

The FAA has found the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because no domestic operators use this product. It is unlikely that the FAA will receive any adverse comments or useful information about this AD from any U.S. operator. Accordingly, notice and opportunity for prior public comment are unnecessary, pursuant to 5 U.S.C. 553(b)(3)(B). In addition, for the foregoing reason(s), the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days.

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0200 and Project Identifier MCAI-2020-01520-E” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Kevin M. Clark, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 0 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Inspect LPC blades and re-lubricate LPC blade and LPC disk	32 work-hours x \$85 per hour = \$2,720	\$0	\$2,720	\$0
Restore LPC blades, examine and re-lubricate LPC disk	128 work-hours x \$85 per hour = \$10,880	\$0	\$10,880	\$0

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the inspection. The FAA has no way of determining the number of aircraft that might need these replacements.

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace LPC blade	.25 work-hours x \$85 per hour = \$21.25	\$116,000	\$116,021.25

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.

The FAA is 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, and
- (2) Will not affect intrastate aviation in Alaska.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

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:

2021-08-01 Rolls-Royce Deutschland Ltd & Co KG (Type Certificate previously held by Rolls-Royce plc): Amendment 39-21495; Docket No. FAA-2021-0200; Project Identifier MCAI-2020-01520-E.

(a) Effective Date

This airworthiness directive (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 (Type Certificate previously held by Rolls-Royce plc) RB211 Trent 768-60, RB211 Trent 772-60, and RB211 Trent 772B-60 model turbofan engines equipped with:

(1) Low-pressure compressor (LPC) blade, with part number (P/N) FW23741 or P/N KH23403, and a serial number (S/N) listed in Appendix 1 of Rolls-Royce (RR) Trent 700 Series Propulsion Systems Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AK492, Revision 1, dated November 30, 2020 (NMSB RB.211-72-AK492), installed; or

(2) LPC disk, with P/N FK22541, P/N FW16259 or P/N KH20338, and an S/N listed in Appendix 2 of NMSB RB.211-72-AK492.

(d) Subject

Joint Aircraft System Component (JASC) code 7240, Turbine Engine Combustion Section.

(e) Unsafe Condition

This AD was prompted by maintenance that resulted in damage to certain LPC blades, resulting in increased susceptibility to cracking in the blade root. The FAA is issuing this AD to prevent failure of the LPC blade and the LPC disk. The unsafe condition, if not addressed, could result in engine in-flight shut-down and reduced control of the airplane.

(f) Compliance

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

(g) Required Actions

(1) Within 200 engine flight cycles (FCs) after the effective date of this AD, perform an initial on-wing ultrasonic inspection of the blade root of each LPC blade using the Accomplishment Instructions, paragraph 3.A.(3)(a) through (c) of NMSB RB.211-72-AK492.

(2) Within 200 engine FCs after the effective date of this AD, re-lubricate each LPC blade and LPC disk using the Accomplishment Instructions, paragraph 3.A.(4) of NMSB RB.211-72-AK492.

(3) Repeat the inspection of each LPC blade and the re-lubrication of each LPC blade and LPC disk required by paragraphs (g)(1) and (2) of this AD at intervals not to exceed 350 engine FCs since the last inspection and re-lubrication.

(4) If, during any inspection required by paragraph (g)(1) or (3) of this AD, an LPC blade is found with unacceptable indications as specified in Appendix 4, paragraph 3 of NMSB RB.211-72-AK492, before next flight, remove and replace the LPC blade with a part eligible for installation.

(h) Mandatory Terminating Action

As a mandatory terminating action to the inspections and re-lubrications required by paragraphs (g)(1) through (3) of this AD, at the next engine shop visit after the effective date of this AD, restore the LPC blades to a serviceable condition and examine

and re-lubricate the LPC disk using the Accomplishment Instructions, paragraph 3.A or 3.B of RR Trent 700 Alert NMSB RB.211-72-AK522, Revision 1, dated November 30, 2020.

(i) Definitions

(1) For the purposes of this AD, an “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine flanges, with the exception of the separation of engine flanges solely for the purpose of transporting the engine without subsequent maintenance.

(2) For the purposes of this AD, a part eligible for installation is an LPC blade, with:

(i) A P/N FW23741 or P/N KH23403, with an S/N listed in Appendix 1 of RR Trent 700 Series Propulsion Systems Alert NMSB RB.211-72-AK492, that has passed the inspections required by paragraph (g)(1) or (3) of this AD, or has zero flight cycles since new; or

(ii) A P/N FW23741 or P/N KH23403, with an S/N that is not listed in Appendix 1 of RR Trent 700 Series Propulsion Systems Alert NMSB RB.211-72-AK492.

(j) Credit for Previous Actions

(1) You may take credit for the initial inspections and re-lubrications required by paragraphs (g)(1) and (2) of this AD if you performed these actions before the effective date of this AD using RR Trent 700 Series Propulsion Systems Alert NMSB RB.211-72-AK492, Initial Issue, dated October 2, 2020.

(2) You may also take credit for the restoration of the LPC blades to a serviceable condition and examination and re-lubrication of the LPC disk required by paragraph (h) of this AD if you performed these actions before the effective date of this AD using RR Trent 700 Series Propulsion Systems Alert NMSB RB.211-72-AK522, Initial Issue, dated October 2, 2020.

(k) No Reporting Requirements

The reporting requirements specified in Appendix 4, paragraph 3 of NMSB RB.211-72-AK492 are not required by this AD.

(l) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ECO Branch, send it to the attention of the person identified in Related Information. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(m) Related Information

For more information about this AD, contact Kevin M. Clark, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7088; fax: (781) 238-7199; email: kevin.m.clark@faa.gov.

(n) 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 (RR) Trent 700 Series Propulsion Systems Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AK492, Revision 1, dated November 30, 2020.

(ii) RR Trent 700 Series Propulsion Systems Alert NMSB RB.211-72-AK522, Revision 1, dated November 30, 2020.

(3) For service information identified in this AD, contact Rolls-Royce plc, P.O. Box 31, Derby, DE24 8BJ, United Kingdom; phone: +44 (0)1332 242424; website: <https://www.rolls-royce.com/contact-us.aspx>.

(4) You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA

01803. For information on the availability of this material at the FAA, call (781) 238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fedreg.legal@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on April 8, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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