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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0022; Project Identifier MCAI-2020-00395-E; Amendment 39-21648; AD 2021-15-01]

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.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Rolls-Royce Deutschland Ltd & Co KG (RRD) Trent XWB-75, Trent XWB-79, Trent XWB-79B, Trent XWB-84, and Trent XWB-97 model turbofan engines. This AD was prompted by the manufacturer revising the time limits manual (TLM) to incorporate repairs to the low-pressure compressor (LPC) blades and introduce a new fan blade inspection. This AD requires revisions to the airworthiness limitations section (ALS) of the Rolls-Royce (RR) Trent XWB TLM and the operator's existing approved aircraft maintenance program (AMP). The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective August 16, 2021.

ADDRESSES: For service information identified in this final rule, contact Rolls-Royce plc, Corporate Communications, 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-2021-0022.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0022; 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 address for Docket Operations is 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: Scott Stevenson, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7132; fax: (781) 238-7199; email: Scott.M.Stevenson@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all RRD Trent XWB-75, Trent XWB-79, Trent XWB-79B, Trent XWB-84, and Trent XWB-97 model turbofan engines. The NPRM published in the Federal Register on February 23, 2021 (86 FR 10878). The NPRM was prompted by the manufacturer revising the TLM to incorporate repairs to the LPC blades and introduce a new fan blade inspection. In the NPRM, the FAA proposed to require revisions to the ALS of the RR Trent XWB TLM, as applicable to each engine model, and to the operator's existing approved AMP, to include new or more restrictive sections of the applicable RR Trent XWB TLM for each affected engine model. The FAA is issuing this AD to address the unsafe condition on these products.

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2020-0066, dated March 23, 2020 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

The Airworthiness Limitations Section instructions for Trent XWB engines, which are approved by EASA, are defined and published in TLM TRENTXWB-K0680-TIME0-01. These instructions have been identified as mandatory for continued airworthiness. Failure to accomplish these instructions could result in an unsafe condition.

Rolls-Royce recently revised the TLM, introducing new and/or more restrictive instructions.

For the reason described above, this [EASA] AD requires accomplishment of the instructions specified in the TLM, as defined in this 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-2021-0022.

Discussion of Final Airworthiness Directive Comments

The FAA received comments from two commenters. The commenters were Air Line Pilots Association, International (ALPA) and Delta Air Lines, Inc. (DAL). The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Revise Required Actions

DAL commented that revising the AMP to include the specific requirements contained in Figure 1 to paragraph (g)(1) or Figure 2 to paragraph (g)(2) is difficult. DAL requested that the FAA revise paragraph (g) of this AD to allow incorporation of the specific language referenced in Figure 1 to

paragraph (g)(1) or Figure 2 to paragraph (g)(2) into the AMP instead of only allowing incorporation of the figures into the AMP.

The FAA agrees and has revised Note 1 to paragraph (g) of this AD to clarify that operators may choose to incorporate the language referenced in Figure 1 to paragraph (g)(1) or Figure 2 to paragraph (g)(2) directly into their existing approved AMP instead of incorporating the respective figures into the existing approved AMP.

Request To Include Modification Specifications of the Ultra Long Range Operation

DAL noted that paragraph (g)(1) of the NPRM includes a proposed requirement that applies to Trent XWB-84 Ultra Long Range (ULR) operation. However, the RR Trent XWB TLM does not define the specification of a ULR operation. DAL commented that ULR operation requires modification to the airplane. The Trent XWB-84 can be installed on both A350-900 standard or ULR operations without any modification to the engine. DAL added that the airplane type certification data sheet does not specify the modification standards of a ULR operation. Since the TLM does not include any specifications of ULR operation and the aircraft type certificate data sheet does not define this specific standard, DAL requested that the FAA include the modification specifications of the ULR operation in the final rule.

The FAA disagrees. Although the airplane requires modification for ULR operation, the Trent XWB-84 model turbofan engine does not require modification for ULR operation and can be installed on a standard airplane or a ULR airplane. The FAA did not change this AD.

Support for the AD

ALPA expressed support for the NPRM as written.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information

The FAA reviewed Rolls-Royce Airworthiness Limitations (Mandatory Inspections), TRENTXWB-A-05-20-01-00A01-030A-D, Revision 013, dated September 1, 2019, of the Rolls-Royce Trent XWB TLM TRENTXWB-K0680-TIME0-01, and Rolls-Royce Airworthiness Limitations (Mandatory Inspections), TRENTXWB-B-05-20-01-00A01-030A-D, Revision 005, dated April 1, 2020, of the Rolls-Royce Trent XWB TLM TRENTXWB-K0680-TIME0-01. These two sections of the TLM specify inspection intervals, differentiated by engine model, for critical rotating parts.

Costs of Compliance

The FAA estimates that this AD affects 22 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 |
|---|------------------------------------|------------|------------------|------------------------|
| Revise the ALS of the RR Trent XWB TLM and the operator's existing approved AMP | 1 work-hour × \$85 per hour = \$85 | \$0 | \$85 | \$1,870 |

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 this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) 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:



FAA
Aviation Safety

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

2021-15-01 Rolls-Royce Deutschland Ltd & Co KG (Type Certificate previously held by Rolls-Royce plc): Amendment 39-21648; Docket No. FAA-2021-0022; Project Identifier MCAI-2020-00395-E.

(a) Effective Date

This airworthiness directive (AD) is effective August 16, 2021.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce Deutschland Ltd & Co KG (RRD) (Type Certificate previously held by Rolls-Royce plc) Trent XWB-75, Trent XWB-79, Trent XWB-79B, Trent XWB-84, and Trent XWB-97 model turbofan engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7200, Engine Turbine/Turboprop.

(e) Unsafe Condition

This AD was prompted by the manufacturer revising the time limits manual (TLM) to incorporate repairs to the low-pressure compressor (LPC) blades and introduce a new fan blade inspection. The FAA is issuing this AD to prevent the failure of critical rotating parts. The unsafe condition, if not addressed, could result in failure of one or more engines, loss of thrust control, and loss of the airplane.

(f) Compliance

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

(g) Required Actions

Within 120 days after the effective date of this AD, revise the Rolls-Royce (RR) Trent XWB TLM, as applicable to each engine model, and the operator's existing approved aircraft maintenance program (AMP) by incorporating the following:

(1) For Trent XWB-75, Trent XWB-79, Trent XWB-79B, and Trent XWB-84 model turbofan engines, add Figure 1 to paragraph (g)(1) of this AD to the airworthiness limitations section (ALS) of RR Trent XWB TLM TRENTXWB-K0680-TIME0-01 and to the operator's existing approved AMP.

Figure 1 to Paragraph (g)(1)

| 2.4.8 LP Compressor blades CSN 72311301250, refer to TRENTXWB-A-72-31-13-02A01-300A-C | | |
|---|--|--|
| Inspection interval (EFC) | | |
| Part number | Standard Operation | Ultra Long Range Operation |
| KH14304 | Remove the LP Compressor blades and repair in accordance with FRSA424, refer to TRENTXWB-A-72-31-13-02A08-600A-C at every engine refurbishment where a Level 3 workscope or above is instructed on the HP System Module. | Remove the LP Compressor blades and repair in accordance with FRSA424, refer to TRENTXWB-A-72-31-13-02A08-600A-C at every engine refurbishment where a Level 3 workscope or above is instructed on the HP System Module. |
| KH56535 | Remove the LP Compressor blades and repair in accordance with FRSA424, refer to TRENTXWB-A-72-31-13-02A08-600A-C at every engine refurbishment where a Level 3 workscope or above is instructed on the HP System Module. | Remove the LP Compressor blades and repair in accordance with FRSA424, refer to TRENTXWB-A-72-31-13-02A08-600A-C at every engine refurbishment where a Level 3 workscope or above is instructed on the HP System Module. |

(2) For Trent XWB-97 model turbofan engines, add Figure 2 to paragraph (g)(2) of this AD to the ALS of RR Trent XWB TLM TRENTXWB-K0680-TIME0-01 and to the operator's existing approved AMP.

Figure 2 to Paragraph (g)(2)

| 2.2.13 LP compressor fan blade CSN 72311301250, refer to DMC-TRENTXWB-B-72-31-13-02A01-300A-C | |
|---|---|
| Part number | Interval |
| KH74127 | Examine the fan blade leading edge at every engine refurbishment. |

Note 1 to paragraph (g): Figure 1 to paragraph (g)(1) and Figure 2 to paragraph (g)(2) contain language from the original equipment manufacturer's TLM. Operators may incorporate the language referenced in Figure 1 to paragraph (g)(1) or Figure 2 to paragraph (g)(2) directly into their AMP instead of adding the respective figures into their AMP.

(h) Definition

For the purpose of this AD, the operator's existing approved AMP is defined as the basis for which the operator or the owner ensures the continuing airworthiness of each operated airplane.

(i) 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.

(j) Related Information

(1) For more information about this AD, contact Scott Stevenson, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7132; fax: (781) 238-7199; email: Scott.M.Stevenson@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2020-0066, dated March 23, 2020, for more information. You may examine the EASA AD in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0022.

(k) Material Incorporated by Reference

None.

Issued on July 6, 2021.

Gaetano A. Sciortino,
Deputy Director for Strategic Initiatives, Compliance & Airworthiness Division, Aircraft Certification Service.

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