[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-1109; Product Identifier MCAI-2019-00115-E]

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: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Rolls-Royce Deutschland Ltd. & Co KG (RRD) Trent XWB-75, XWB-79, XWB-79B, and XWB-84 turbofan engines. This proposed AD was prompted by analysis by the manufacturer of the low-pressure compressor (LPC) outlet guide vane (OGV) assembly and LPC OGV outer mount ring assembly. The analysis predicted that when the front engine mount is in the fail-safe condition, the most highly stressed LPC OGV outer mount ring assembly has a life that could be substantially less than one shop visit interval. This proposed AD would require initial and repetitive inspections of the OGV outer mount ring assembly and, depending on the results of the inspections, possible replacement of the OGV outer mount ring assembly. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed 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 NPRM, contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany; phone: +49 (0) 33 708 6 0; email: https://www.rolls-royce.com/contact-us.aspx. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Examining the AD Docket

You may examine the AD docket on the Internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2019-1109; 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 NPRM, the mandatory continuing airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Stephen Elwin, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7236; fax: 781-238-7199; email: Stephen.L.Elwin@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2019-1109; Product Identifier MCAI-2019-00115-E" at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will consider all comments received by the closing date and may amend this NPRM because of those comments.

Except for Confidential Business Information 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 FAA will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

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 NPRM 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 NPRM, 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 NPRM. Submissions containing CBI should be sent to Stephen Elwin, Aerospace 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.

Discussion

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2019-0234, dated September 19, 2019 (referred to after this as "the MCAI"), to address the unsafe condition on these products. The MCAI states:

> The purpose of the engine mount is to position the engine relative to the pylon and to transfer all loads and rotational moments between the engine and pylon. The front engine mount support structure (EMSS) consists of the low pressure compressor (LPC) outlet guide vane (OGV) assembly and OGV outer mount ring assembly. Revised analysis of these parts, when the front engine mount (FEM) is engaged in the fail-safe condition, has now been undertaken using more advanced modelling techniques. This analysis predicts that, once the FEM is in the fail-safe condition, the most highly stressed LPC OGV has a life that could be substantially less than one shop visit interval.
>
> This condition, if not detected and corrected, could lead to failure of the EMSS, possibly resulting in engine separation and reduced control of the aeroplane.
>
> To address this potential unsafe condition, Rolls-Royce introduced inspections to protect against the FEM entering the failsafe condition following a failure of the OGV outer mount ring assembly lugs, and published the NMSB to provide instructions.

> For the reason described above, this [EASA] AD requires repetitive inspections of the OGV outer mount ring assembly lug fillet area and, depending on findings, accomplishment of applicable corrective action(s).

You may obtain further information by examining the MCAI in the AD docket on the Internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2019-1109.

Related Service Information under 1 CFR Part 51

The FAA reviewed Rolls-Royce plc (RR) Alert Non-Modification Service Bulletin (NMSB) Trent XWB 72-AK188, Revision 2, dated December 17, 2019. The NMSB describes procedures for performing fluorescent penetrant inspections (FPIs) of the LPC OGV outer mount ring assembly. 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.

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 and service information referenced above. The FAA is proposing this AD because it evaluated all the relevant information provided by EASA and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require initial and repetitive FPIs of the LPC OGV outer mount ring assembly, and depending on the results of the inspections, possible replacement of the OGV outer mount ring assembly.

Differences Between this Proposed AD and the Service Information

RR Alert NMSB Trent XWB 72-AK188, Revision 2, dated December 17, 2019, identifies a more immediate compliance time for RRD Trent XWB turbofan engine models with engine serial numbers (ESNs) 21021, 21032, 21033, 21038, 21041, 21043, 21044, 21065, 21088, and 21188. This proposed AD does not include this more immediate compliance time for these RRD Trent XWB turbofan engine models as they are not installed on aircraft in the U.S. registry.

Costs of Compliance

The FAA estimates that this proposed AD affects 26 engines installed on airplanes of U.S. registry.

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

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
FPI the LPC OGV outer mount ring assembly	3 work-hours x $85 per hour = $255	$0	$255	$6,630

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

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace the LPC OGV outer mount ring assembly (KH10678)	8 work-hours x $85 per hour = $680	$2,418,121	$2,418,801

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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 proposed regulation:

(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.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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):

Rolls-Royce Deutschland Ltd. & Co KG: Docket No. FAA-2019-1109; Product Identifier MCAI-2019-00115-E.

(a) Comments Due Date

The FAA must receive comments by [INSERT DATE 45 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) (Type Certificate Previously Held by Rolls-Royce plc) Trent XWB-75, XWB-79, XWB-79B, and XWB-84 turbofan engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7120, Engine Mount Section.

(e) Unsafe Condition

This AD was prompted by analysis by the manufacturer of the low-pressure compressor (LPC) outlet guide vane (OGV) assembly and OGV outer mount ring assembly. The analysis predicted that when the front engine mount is in the fail-safe condition, the most highly stressed LPC OGV outer mount ring assembly has a life that could be substantially less than one shop visit interval. The FAA is issuing this AD to prevent failure of the front engine mount support structure. The unsafe condition, if not addressed, could result in engine separation, reduced control of the airplane, and loss of the airplane.

(f) Compliance

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

(g) Required Actions

(1) For affected RRD Trent XWB turbofan engines with 1,700 flight cycles since new (FCSN) or greater as of the effective date of this AD:

(i) Within 300 flight cycles (FC) after the effective date of this AD, perform a fluorescent penetrant inspection (FPI) of the LPC OGV outer mount ring assembly.

(ii) Use Accomplishment Instructions, paragraph 3.A. or 3.B., as applicable, of Rolls-Royce plc (RR) Alert Non-Modification Service Bulletin (NMSB) Trent XWB 72-AK188, Revision 2, dated December 17, 2019, to perform the FPI of the LPC OGV outer mount ring assembly.

(iii) Thereafter, perform repetitive FPIs of the LPC OGV outer mount ring assembly within 1,000 FC after the previous inspection.

(2) For affected RRD Trent XWB turbofan engines with fewer than 1,700 FCSN as of the effective date of this AD:

(i) Before exceeding 2,000 FCSN after the effective date of this AD, perform an FPI of the LPC OGV outer mount ring assembly.

(ii) Use Accomplishment Instructions, paragraph 3.A. or 3.B., as applicable, of RR Alert NMSB 72-AK188, Revision 2, dated December 17, 2019, to perform the FPI of LPC OGV outer mount ring assembly.

(iii) Thereafter, perform repetitive FPIs of the LPC OGV outer mount ring assembly within 1,000 FC after the previous inspection.

(3) If, during any FPI required by paragraph (g)(1) or (2) of this AD, an LPC OGV outer mount ring assembly discrepancy is detected, as defined in the Accomplishment Instructions, paragraph 3.A or 3.B, of RR Alert NMSB 72-AK188, Revision 2, dated December 17, 2019, repeat the FPI within the interval specified in Accomplishment Instructions, paragraph 3.A. or 3.B., of RR Alert NMSB 72-AK188, Revision 2, dated December 17, 2019.

(4) If, during any FPI required by paragraphs (g)(1) and (2) of this AD, an LPC OGV outer mount ring assembly is rejected as a result of the FPI, as defined in the Accomplishment Instructions, paragraph 3.A or 3.B, of RR Alert NMSB 72-AK188, Revision 2, dated December 17, 2019:

(i) Before further flight, replace the LPC OGV outer mount ring assembly with a part eligible for installation.

(ii) Thereafter, perform repetitive FPIs of the LPC OGV outer mount ring assembly within 1,000 FC of the previous inspection.

(h) No Reporting Requirement

The reporting requirements in the Accomplishment Instructions, paragraph 3, of RR Alert NMSB Trent XWB 72-AK188, Revision 2, dated December 17, 2019, are not required by this AD.

(i) Credit for Previous Actions

You may take credit for the initial and repetitive FPIs that are required by paragraphs (g)(1) and (2) of this AD if you performed the FPIs before the effective date of this AD using RR Alert NMSB Trent XWB 72-AK188, Revision 1, dated September 20, 2019, or Initial Issue, dated August 13, 2019.

(j) 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 paragraph (k)(1) of this AD. 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.

(k) Related Information

(1) For more information about this AD, contact Stephen Elwin, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7236; fax: 781-238-7199; email: Stephen.L.Elwin@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2019-0234, dated September 19, 2019, for more information. You may examine the EASA AD in the AD docket on the Internet at https://www.regulations.gov by searching for and locating it in Docket No. FAA-2019-1109.

(3) For service information identified in this AD, contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany; phone: +49 (0) 33 708 6 0; email: https://www.rolls-royce.com/contact-us.aspx. You may

view this referenced service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Issued in Burlington, Massachusetts, on February 6, 2020.

Robert J. Ganley,
Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.
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