[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-6692; Directorate Identifier 2016-NE-13-AD; Amendment 39-18725; AD 2016-24-08]

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-Trent 875-17, RB211-Trent 877-17, RB211-Trent 884-17, RB211-Trent 884B-17, RB211-Trent 892-17, RB211-Trent 892B-17, and RB211-Trent 895-17 turbofan engines. This AD requires repetitive inspections of the engine upper bifurcation fairing and repairing or replacing any fairing that fails inspection. This AD was prompted by a report of cracking and material release from an engine upper bifurcation fairing. We are issuing this AD to prevent failure of the engine fire protection system, engine fire, and damage to the airplane.

DATES: This AD becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, 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://customers.rolls-royce.com/public/rollsroycecare. You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. 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-2016-6692; 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, 1200 District Avenue, 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 July 15, 2016 (81 FR 46000). The NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

> Inspection of in-service Rolls-Royce RB211 Trent 800 engines has identified cracking and/or material release from the upper bifurcation fairing. This fairing hardware mates to the aeroplane thrust reverser upper bifurcation forward fire seal. Both sets of hardware create the engine firewall to isolate the engine compartment fire zone, which is a firewall feature of the aeroplane type design. Damage (missing materials and holes/openings) to the upper bifurcation fairing creates a breach of the engine fire wall, which may decrease the effectiveness of the engine fire detection and suppression systems due to excess fan air entering the engine compartment fire zone. This could delay or prevent the fire detection and suppression system from functioning properly, and can result in an increased risk of prolonged burning, potentially allowing a fire to reach unprotected areas of the engine, strut and wing.

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-2016-6692.

Comments

We gave the public the opportunity to participate in developing this AD. We considered the comment received.

Request to Remove Reference to Guidance in Compliance

American Airlines, Inc. (AAL) requested that paragraph (e)(3)(ii) in this AD be revised to eliminate the references to Aircraft Maintenance Manual (AMM) Task 70-20-02 and to OMat 632. AAL indicated that AMM 70-20-02 requires the use of OMat 653 and TAM (PSM-5) TST panels for testing fluorescent penetrants for contamination and effectiveness. AAL noted that the Overhaul Material Manual (OMat 6) allows the use of

any products specified in the SAE-AMS-2644 Qualified Product List Group 1A2 as an alternative to OMat 653.

We disagree. Paragraph (e)(3)(ii) in this AD refers to AMM Task 70-20-02 and OMat 632 as guidance that operators may use when performing fluorescent penetrant inspection. This AD does not require that AMM TASK 70-20-02 or OMat 632 be followed when performing fluorescent penetrant inspection. We did not change this AD.

Conclusion

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting this AD as proposed except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Related Service Information

RR has issued Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AJ165, dated March 31, 2016. The NMSB describes procedures for inspecting and, if necessary, repairing or replacing the engine upper bifurcation fairing.

Costs of Compliance

We estimate that this AD affects 125 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
Inspection	3.25 work-hours x $85 per hour = $276.25	$0	$276.25	$34,531

We estimate the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. We estimate that 5 engines will need this repair and 5 engines will need this replacement:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Repair of engine upper bifurcation fairing	8 work-hours x $85 per hour = $680	$500	$1,180
Replacement of engine upper bifurcation fairing	30 work hours x $85 per hour = $2,550	$500	$3,050

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):

2016-24-08 **Rolls-Royce plc:** Amendment 39-18725; Docket No. FAA-2016-6692; Directorate Identifier 2016-NE-13-AD.

(a) Effective Date

This AD becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce plc (RR) RB211-Trent 875-17, RB211-Trent 877-17, RB211-Trent 884-17, RB211-Trent 884B-17, RB211-Trent 892-17, RB211-Trent 892B-17, and RB211-Trent 895-17 turbofan engines.

(d) Reason

This AD was prompted by a report of cracking and material release from an engine upper bifurcation fairing. We are issuing this AD to prevent failure of the engine fire protection system, engine fire, and damage to the airplane.

(e) Actions and Compliance

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

(1) Within 7,500 engine flight hours (FHs) time since new, or since last inspection, or within 150 flight cycles (FCs) after the effective date of this AD, whichever occurs later, inspect the engine upper bifurcation fairing for cracks or missing material. Use paragraph (e)(3) of this AD to perform the inspections.

(2) Repeat the inspection required by this AD within every 7,500 engine FHs time since last inspection.

(3) Inspect the engine upper bifurcation fairing as follows. Refer to Figure 1 of RR Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AJ165, dated March 31, 2016, for guidance on upper bifurcation fairing inspection locations.

(i) Visually inspect upper bifurcation fairing seal face 22, seal support 23, and zone A for any cracks or material loss on the right side.

(A) If fairing seal face 22 is found to have released material, repair or replace the fairing before further flight.

(B) If there is a single crack found on fairing seal face 22, shorter than 6 mm, repair or replace the fairing within 100 engine flight cycles, or at the next shop visit, whichever occurs sooner.

(C) If there is a single crack, longer than 6 mm, found on fairing seal face 22, repair or replace the fairing within 15 engine FCs or at the next shop visit, whichever occurs sooner.

(D) If there are two or more cracks found on fairing seal face 22, replace the fairing within 15 engine FCs or at next shop visit, whichever occurs sooner.

(E) If there is any cracking or material loss found on seal support 23, replace the fairing within 15 engine FCs or at next shop visit, whichever occurs sooner.

(ii) If the visual inspection required by paragraph (e)(3)(i) of this AD does not detect any crack, fluorescent penetrant inspect zone A. Refer to AMM TASK 70-20-02, Water Washable Fluorescent Penetrant Inspection (Maintenance Process 213), or OMat 632, high sensitivity fluorescent penetrant inspection, for guidance on fluorescent penetrant inspection.

(A) If a crack shorter than 6 mm is detected, repair or replace the fairing within 100 engine FCs, or at the next shop visit, whichever occurs sooner.

(B) If a crack longer than 6 mm is detected, repair or replace the fairing within 15 engine FCs or at the next shop visit, whichever occurs sooner.

(f) Definition

For the purpose of this AD, a "shop visit" is defined as induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine flanges, except that the separation of engine flanges solely for the purposes of transportation without subsequent engine maintenance does not constitute an engine shop visit.

(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, 1200

District Avenue, 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 2016-0084, dated April 28, 2016, 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-2016-6692.

(3) RR Alert NMSB RB.211-72-AJ165, dated March 31, 2016, which is not incorporated by reference in this AD, can be obtained from RR, using the contact information in paragraph (h)(4) of this AD.

(4) 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://customers.rolls-royce.com/public/rollsroycecare.

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

(i) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on November 16, 2016.

Colleen M. D'Alessandro,
Manager, Engine & Propeller Directorate,
Aircraft Certification Service.
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