



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0187; Directorate Identifier 2017-NE-08-AD; Amendment 39-18893; AD 2017-10-19]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Rolls-Royce plc (RR) Trent 1000–A2, Trent 1000–C2, Trent 1000–D2, Trent 1000–E2, Trent 1000–G2, Trent 1000–H2, Trent 1000–J2, Trent 1000–K2, and Trent 1000–L2 turbofan engines. This AD requires initial and repetitive on-wing inspections of affected intermediate pressure compressor (IPC) rotor seals. This AD was prompted by a failure of the IPC rotor seal. 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].

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].

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 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 01803. For information on the availability of this material at the FAA, call 781-238-7125. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0187.

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-2017-0187; 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-2017-0187; Directorate Identifier 2017-NE-08-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 2017-0017, dated February 1, 2017 (referred to hereinafter as “the MCAI”), to correct an unsafe condition for the specified products. The MCAI states:

Recently, a low speed abort (60 to 65 knots) occurred on take-off on a Trent 1000-powered Boeing 787 aeroplane. The pilot performed a commanded engine shutdown and the aeroplane safely returned to the gate. Following investigation, failure and release of the intermediate pressure compressor (IPC) rotor seal was confirmed as having caused this event. RR have confirmed that other IPC rotor seals, Part Number (P/N) KH19098, have been found with cracking at the seal head. This condition, if not detected and corrected, could lead to engine power loss, possibly resulting in reduced control of the aeroplane.

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-2017-0187.

Related Service Information under 1 CFR Part 51

RR has issued Alert Non-Modification Service Bulletin (NMSB) Trent 1000 72-AJ467, Revision 1, dated February 13, 2017; and NMSB Trent 1000 72-J353, Revision 1, dated November 24, 2016. The Alert NMSB describes procedures for initial and repetitive inspections of affected IPC rotor seal. The NMSB describes procedures for in-shop inspections of affected IPC rotor seals. 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 and Requirements of This AD

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. 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 initial and repetitive inspections of affected IPC rotor seal for cracks.

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 impracticable 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
Inspection of IPC rotor seal	12.5 work-hours X \$85 per hour = \$1,062.50	\$0	\$1,062.50	\$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):

2017-10-19 **Rolls-Royce plc**: Amendment 39-18893; Docket No. FAA-2017-0187; Directorate Identifier 2017-NE-08-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 plc (RR) Trent 1000–A2, Trent 1000–C2, Trent 1000–D2, Trent 1000–E2, Trent 1000–G2, Trent 1000–H2, Trent 1000–J2, Trent 1000–K2, and Trent 1000–L2 turbofan engines with intermediate pressure compressor (IPC) rotor seal, part number (P/N) KH19098, installed.

(d) Subject

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

(e) Reason

This AD was prompted by failure of the IPC rotor seal. We are issuing this AD to prevent failure of the IPC rotor seal, loss of engine thrust control, and reduced control of the airplane.

(f) Compliance

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

(g) Required Actions

(1) Perform an on-wing borescope inspection (BSI) of the IPC rotor seal using paragraph 3, Accomplishment Instructions, of RR Alert Non-Modification Service Bulletin (NMSB) Trent 1000 72-AJ467, Revision 1, dated February 13, 2017 as follows:

(i) For engines with an IPC rotor seal with 300 flight cycles (FC) or more before August 2017, perform a BSI before August 2017.

(ii) For engines with an IPC rotor seal with less than 300 FC before August 2017, perform a BSI before the IPC rotor seal accumulates 300 FC.

(2) Depending on the findings of the inspection(s) required by paragraph (g)(1) of this AD, repeat the on-wing BSI at intervals not to exceed those specified in Figures 2 or 4 of RR Alert NMSB Trent 1000 72-AJ467, Revision 1, dated February 13, 2017.

(3) An in-shop inspection in accordance with paragraph 3, Accomplishment Instructions, of RR NMSB Trent 1000 72-J353, Revision 1, dated November 24, 2016, may be substituted for an on-wing BSI as required by paragraphs (g)(1) and (2) of this AD, within the compliance times specified.

(4) After the effective date of this AD, do not operate an aircraft, having two engines installed that are both subject to the 20 FC IPC rotor seal re-inspection interval specified in Figure 4 of RR Alert NMSB Trent 1000 72-AJ467, Revision 1, dated February 13, 2017.

(5) If, during an on-wing inspection as required by paragraphs (g)(1) or (2) of this AD, or an in-shop inspection as specified in paragraph (g)(3) of this AD, any crack is found on the rear face of the affected IPC rotor seal that is at or beyond the reject limits specified in Figure 4 of RR Alert NMSB Trent 1000 72-AJ467, Revision 1, dated February 13, 2017, replace the IPC rotor seal with a part eligible for installation, before next flight.

(6) Replacing the IPC rotor seal on an engine, as required by paragraph (g)(5) of this AD, is not terminating action for the inspections required by paragraphs (g)(1) and (2) of this AD for that engine.

(7) No reports requested in any of the Alert NMSBs that are referenced in paragraphs (g)(1), (2), and (3) of this AD are required by this AD.

(h) Credit for Previous Actions

You may take credit for inspections and corrective action that are required by paragraph (g) of this AD, if you performed these actions and corrective action before the effective date of this AD, using RR Alert NMSB Trent 1000 72-AJ467, Initial Issue, dated November 9, 2016; or RR NMSB Trent 1000 72-J353, Initial Issue, dated August 25, 2016, or Revision 1, dated November 24, 2016.

(i) 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.

(j) 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 AD 2017-0017, dated February 1, 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-2017-0187.

(k) 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 plc (RR) Non-Modification Service Bulletin (NMSB) Trent 1000 72-J353, Revision 1, dated November 24, 2016.

(ii) RR Alert NMSB Trent 1000 72-AJ467, Revision 1, dated February 13, 2017.

(3) For RR 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>.

(4) 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.

(5) You may view this service information at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on May 11, 2017.

Robert J. Ganley,
Acting Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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