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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2017-0652; Product Identifier 2017-NE-18-AD; Amendment 39-18997; AD 2017-17-07]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Rolls-Royce plc Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Rolls-Royce plc (RR) Trent XWB-75, Trent XWB-79, Trent XWB-79B, and Trent XWB-84 turbofan engines. This AD requires inspection of the intermediate-pressure (IP) turbine stage 2 locking plates. This AD was prompted by a report of several IP turbine stage 2 locking plates cracked during module assembly. We are issuing this AD to correct the unsafe condition on these products.

**DATES:** This AD becomes effective September 12, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of September 12, 2017.

We must receive comments on this AD by October 12, 2017.

**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](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 and Propeller Standards Branch, Policy and Innovation Division, 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-2017-0652.

## **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-2017-0652; 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, FAA, ECO Branch, Compliance and Airworthiness Division, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: [robert.green@faa.gov](mailto: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-2017-0652; Directorate Identifier 2017-NE-18-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 2017-0088, dated May 16, 2017 (referred to hereinafter as “the MCAI”), to correct an unsafe condition for the specified products. The MCAI states:

During module assembly, cracking was observed on several intermediate pressure (IP) turbine stage 2 locking plates from one particular supplier. These locking plates form part of the IP turbine stage 2 assembly, providing axial retention of the IP turbine stage 2 blades onto the disk, and constitute a seal for the local air system. These locking plates are pre-bent during manufacture and are pressed flat during installation such that they fit between grooves in the IP stage 2 disk and blades. There are 16 locking plates, Part Number (P/N) KH12922 or P/N KH16183, installed on an IP turbine stage 2 assembly. It is possible that parts, manufactured by this supplier, may have cracked during module assembly, without those cracks being detectable prior to release to service of an engine. Propagation of cracks during engine operation may lead to loss of a locking plate. Missing locking plates will allow hot gas ingestion which will locally overheat the blade retention features of the disk.

This condition, if not detected and corrected, could lead to accelerated fatigue of the blade retention features of the disk and release of one or more IP turbine stage 2 blades, possibly resulting in high energy uncontained debris release from the engine, with consequent damage to, and 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-2017-0652.

**Related Service Information Under 1 CFR Part 51**

RR has issued Alert Non-Modification Service Bulletin (NMSB) Trent XWB 72-AJ738, dated April 11, 2017. The NMSB describes procedures to inspect the IP turbine stage 2 locking plates. 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 the aviation authority of 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 inspection of the IP turbine stage 2 locking plates.

**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 unnecessary 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 engine 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 work-hours × \$85 per hour = \$255	\$0	\$255	\$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.

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**

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):



**FAA**  
**Aviation Safety**

## **AIRWORTHINESS DIRECTIVE**

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

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**2017-17-07 Rolls-Royce plc:** Amendment 39-18997; Docket No. FAA-2017-0652; Product Identifier 2017-NE-18-AD.

**(a) Effective Date**

This AD is effective September 12, 2017.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Rolls-Royce plc (RR) Trent XWB-75, Trent XWB-79, Trent XWB-79B, and Trent XWB-84 turbofan engines with an engine serial number (S/N) listed in Appendix 1 of RR Alert Non-Modification Service Bulletin (NMSB) Trent XWB 72-AJ738, dated April 11, 2017, and with intermediate-pressure (IP) turbine stage 2 locking plates, part number (P/N) KH12922 or KH16183, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) 7250, Turbine/Turboprop Engine/Turbine Section.

**(e) Reason**

This AD was prompted by a report of several IP turbine stage 2 locking plates cracked during module assembly. We are issuing this AD to prevent failure of the IP turbine stage 2 locking plates, uncontained release of the IP turbine stage 2 blades, damage to the engine, and damage to the airplane.

**(f) Compliance**

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

(1) Inspect the IP turbine stage 2 locking plates on-wing before exceeding 750 engine flight cycles (FCs) since new, or within 100 engine FCs after the effective date of this AD, whichever occurs later. Use the Accomplishment Instructions, paragraph 3.A., of RR Alert NMSB Trent XWB 72-AJ738, dated April 11, 2017, to do the inspection.

(2) Thereafter, re-inspect the IP turbine stage 2 locking plates at intervals not to exceed 750 engine FCs since the last locking plate inspection. Use the Accomplishment Instructions, paragraph 3.A., of RR Alert NMSB Trent XWB 72-AJ738, dated April 11, 2017, to do the inspection.

(i) If all IP turbine stage 2 locking plates installed on the engine have an S/N beginning with 20452, or are not marked with an S/N, the repetitive inspection required by paragraph (f)(2) of this AD is not required.

(ii) If one or more IP turbine stage 2 locking plates are missing, remove the engine from service within the compliance times specified in the Accomplishment Instructions, paragraph 3.A.(3), of RR Alert NMSB Trent XWB 72-AJ738, dated April 11, 2017.

(3) Inspect the IP turbine stage 2 locking plates during the next engine shop visit (ESV) after the effective date of this AD.

(i) Use the Accomplishment Instructions, paragraph 3.B., of RR Alert NMSB Trent XWB 72-AJ738, dated April 11, 2017, to do this inspection. This in-shop inspection may be substituted for the on-wing inspection required by paragraphs (f)(1) and (2) of this AD.

(ii) If one or more IP turbine stage 2 locking plates are missing, use the acceptance criteria in the Accomplishment Instructions, paragraph 3.B.(3), of RR Alert NMSB Trent XWB 72-AJ738 dated April 11, 2017, to disposition the engine.

### **(g) Installation Prohibition**

After the effective date of this AD, do not install an engine unless the IP turbine stage 2 locking plates were inspected using the Accomplishment Instructions, paragraph 3.A. or 3.B., of RR Alert NMSB Trent XWB 72-AJ738, dated April 11, 2017.

### **(h) Definition**

For the purpose of this AD, an ESV is when the engine is subject to a serviceability check and repair, rebuild, or overhaul.

### **(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, FAA, ECO Branch, Compliance and Airworthiness Division, 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.

(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 Robert Green, Aerospace Engineer, FAA, ECO Branch, Compliance and Airworthiness Division, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: robert.green@faa.gov.

(2) Refer to MCAI European Aviation Safety Agency AD 2017-0088, dated May 16, 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-2017-0642.

### **(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) Alert Non-Modification Service Bulletin Trent XWB 72-AJ738, dated April 11, 2017.

(ii) Reserved.

(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](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 and Propeller Standards Branch, Policy and Innovation Division, 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 August 16, 2017.

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