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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2013-0397; Directorate Identifier 2013-NE-15-AD; Amendment 39-17656; AD 2013-23-01]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG Turbofan Engines**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for all Rolls-Royce Deutschland Ltd & Co KG (RRD) model Tay 620-15, 650-15, and 651-54 turbofan engines. This AD requires a one-time inspection of the high-pressure (HP) air bleed valve operating mechanism and, depending on findings, corrective action. This AD was prompted by excessive deterioration of the HP air bleed valve operating mechanism, which is influencing the aerodynamic fan flutter margin. This condition, if not corrected, could lead to multiple fan blade failure. We are issuing this AD to prevent multiple fan blade failure, which could result in uncontained engine failure and damage to the airplane.

**DATES:** This AD becomes effective December 30, 2013.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of December 30, 2013.

**ADDRESSES:** The Docket Operations office is located at Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; 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), the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (phone: 800-647-5527) is provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Frederick Zink, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7779; fax: 781-238-7199; email: frederick.zink@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. The NPRM was published in the Federal Register on June 13, 2013 (78 FR 35574). The NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

A review of the service history of Tay engines discovered that the High Pressure (HP) air bleed valve operating mechanism is exposed to excessive deterioration, influencing the aerodynamics and stability of the Low Pressure (LP) compressor (fan) rotor.

This condition, if not corrected, could reduce fan flutter margin and, in some cases, could lead to multiple fan blade failures, possibly resulting in an uncontained release of high energy debris with consequent damage to, and/or reduced control of, the aeroplane.

### **Comments**

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

### **Request To Change Unsafe Condition Statement Wording**

RRD requested that we clarify the cause of fan blade flutter stated in the unsafe condition statement to include ". . . affects the aerodynamic flutter margin causing subsequent multiple fan blade failure . . .". Fan blade flutter does not occur automatically. Reduction of fan flutter margin increases the risk of fan flutter potentially leading to fan blade cracking.

We agree. We changed the unsafe condition statement to "This AD was prompted by excessive deterioration of the HP air bleed valve operating mechanism, which is influencing the aerodynamic fan flutter margin. This condition, if not corrected, could lead to multiple fan blade failure".

### **Request To Change Applicability**

RRD requested that we change the scope of the AD to include Tay 650-15 and Tay 651-54 engine models. The justification for this request is supported by European Aviation Safety Agency AD 2013-0142, dated July 12, 2013 and RRD Alert Non-Modification Service Bulletin (NMSB) No. TAY-75-A1784, Revision 1, dated May 30, 2013.

We partially agree. We disagree with adding the Tay 650-15 engine model because it is already in the AD. We agree with adding the Tay 651-54 engine model to the applicability because it is included in RRD NMSB No. TAY-75-A1784, Revision 1, dated May 30, 2013. Additionally, we added the Tay 620-15 engine model to the applicability because the latest MCAI added it. We changed the applicability accordingly, which increased the costs of compliance. Further, we updated the paragraph number reference in Compliance paragraph (e)(2) of this AD to correspond to the revised NMSB.

## **Conclusion**

We reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We determined that these changes will not significantly increase the economic burden on any operator or increase the scope of the AD.

## **Costs of Compliance**

We estimate that this AD will affect about 78 engines of U.S. registry. We also estimate that it will take about 10 hours per engine to comply with this AD. The average labor rate is \$85 per hour. Required parts will cost about \$153 per engine. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$78,234.

## **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.

We prepared a regulatory evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

## **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):



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**2013-23-01 Rolls-Royce Deutschland Ltd & Co KG:** Amendment 39-17656; Docket No. FAA-2013-0397; Directorate Identifier 2013-NE-15-AD.

**(a) Effective Date**

This AD becomes effective December 30, 2013.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all Rolls-Royce Deutschland Ltd & Co KG (RRD) model Tay 620-15, 650-15, and 651-54 turbofan engines.

**(d) Reason**

This AD was prompted by excessive deterioration of the high-pressure (HP) air bleed valve operating mechanism which is influencing the aerodynamic fan flutter margin. This condition, if not corrected, could lead to multiple fan blade failure. We are issuing this AD to prevent multiple fan blade failure, which could result in uncontained engine failure and damage to the airplane.

**(e) Actions and Compliance**

Unless already done, do the following actions.

(1) Within 1,500 flight cycles after the effective date of this AD, perform a one-time inspection of the HP air bleed valve operating mechanism. Use paragraphs 3.D. and 3.E. of RRD Alert Non-Modification Service Bulletin (NMSB) No. TAY-75-A1784, Revision 1, dated May 30, 2013, to do your inspection.

(2) If the measured torque necessary to open and close the HP air bleed valve is higher than the torque values referenced in paragraph 3.D.(1)(a)[1] for the Tay 620-15 and 650-15 engines, or 3.D.(2)(a)[1] for the Tay 651-54 engine, of RRD Alert NMSB No. TAY-75-A1784, Revision 1, dated May 30, 2013, then before next flight, accomplish paragraph 3.D(1)(a)[1][a], for the Tay 620-15 and 650-15 engines, or 3.D.(2)(a)[1][a], for the Tay 651-54 engine, of RRD Alert NMSB No. TAY-75-A1784, Revision 1, dated May 30, 2013.

**(f) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(g) Related Information**

(1) For more information about this AD, contact Frederick Zink, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7779; fax: 781-238-7199; email: frederick.zink@faa.gov.

(2) Refer to European Aviation Safety Agency AD 2013-0142, dated July 12, 2013, for more information. You may examine the AD on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2013-0397-0004>.

**(h) 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 Deutschland Alert Non-Modification Service Bulletin No. TAY-75-A1784, Revision 1, dated May 30, 2013.

(ii) Reserved.

(3) For service information identified in this AD, contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, Dahlewitz, 15827 Blankenfelde-Mahlow, Germany; phone: 49 0 33-7086-1200; fax: 49 0 33-7086-1212.

(4) You may view this service information at FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. 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 November 1, 2013.

Thomas A. Boudreau,  
Acting Assistant Directorate Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.