

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0684; Directorate Identifier 2010-NE-27-AD; Amendment 39-16842; AD 2011-22-01]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG (RRD) BR700-710 Series Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Analysis of service data carried out by Rolls-Royce Deutschland has shown that the effect of touch-and-go and overshoot on life cycle counting is higher than anticipated. Therefore, the life cycle counting method for touch-and-go and overshoot as defined by the Time Limits Manual needs to be changed to reflect this higher effect on life.

We are issuing this AD to prevent failure of high-energy, life-limited parts, uncontained engine failure, and damage to the airplane.

DATES: This AD becomes effective November 23, 2011.

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.

FOR FURTHER INFORMATION CONTACT: Mark Riley, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: mark.riley@faa.gov; phone: 781-238-7758; fax: 781-238-7199.

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. That NPRM was published in the Federal Register on July 5, 2011 (76 FR 39033). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states that:

Analysis of service data carried out by Rolls-Royce Deutschland has shown that the effect of touch-and-go and overshoot on life cycle counting is higher than anticipated. Therefore, the life cycle counting method for touch-and-go and overshoot as defined by the Time Limits Manual needs to be changed to reflect this higher effect on life.

This AD requires a change of the life cycle counting method for touch-and-go and overshoot for all critical parts and the Low Pressure (LP) compressor blades as specified in the Rolls-Royce Deutschland Alert NMSB-BR700-72-A900504 Revision 1. The chapter 05-00-01 and 05-00-02 of the applicable Time Limits Manuals will be revised accordingly.

You may obtain further information by examining the MCAI in the AD docket.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM.

Conclusion

We reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed.

Differences Between This AD and the MCAI or Service Information

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow our FAA policies. Any such differences are described in a separate paragraph of the AD, and take precedence over the actions copied from the MCAI.

Costs of Compliance

Based on the service information, we estimate that this AD would affect about 1,052 products of U.S. registry. We also estimate that it would take about 1 work-hour per product to comply with this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$89,420.

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); 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.

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

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 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.

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 AD:



2011-22-01 Rolls-Royce Deutschland Ltd & Co KG (Formerly Rolls-Royce Deutschland GmbH, formerly BMW Rolls-Royce GmbH): Amendment 39-16842; Docket No. FAA-2011-0684; Directorate Identifier 2011-NE-27-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective November 23, 2011.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to all Rolls-Royce Deutschland BR700-710A1-10 and BR700-710A2-20 turbofan engines, all BR700-710C4-11 model engines that have hardware configuration standard 710C4-11 engraved on the engine data plate (Service Bulletin SB-BR700-72-101466 standard not incorporated), and all BR700-710C4-11 model engines that have hardware configuration standard 710C4-11/10 engraved on the engine data plate (Service Bulletin SB-BR700-72-101466 standard incorporated). These engines are installed on, but not limited to, Bombardier BD-700-1A10 and BD-700-1A11 airplanes and Gulfstream GV (G500) and GV-SP (G550) airplanes.

Reason

- (d) This AD results from:

Analysis of service data carried out by Rolls-Royce Deutschland has shown that the effect of touch-and-go and overshoot on life cycle counting is higher than anticipated. Therefore, the life cycle counting method for touch-and-go and overshoot as defined by the Time Limits Manual needs to be changed to reflect this higher effect on life.

We are issuing this AD to prevent failure of high-energy, life-limited parts, uncontained engine failure, and damage to the airplane.

Actions and Compliance

- (e) Unless already done, do the following actions.

(1) Within 30 days after the effective date of this AD, revise the airworthiness limitations section (ALS) of the operators' approved maintenance program (reference the Time Limits Manual (TLM), chapters 05-00-01 and 05-00-02 of the applicable engine manuals (EMs)) to remove the requirement to record each touch-and-go or overshoot as $\frac{1}{5}$ of a flight cycle (FC) on an engine installed on an airplane used for Pilot Training.

(2) Within 30 days after the effective date of this AD, revise the ALS of the operators' approved maintenance program (reference the TLM, chapters 05-00-01 and 05-00-02 of the applicable EMs) to add a requirement to record each touch-and-go or overshoot as 1 FC to the life of all critical parts and the fan blades.

(3) Within 120 days after the effective date of this AD, determine the number of touch-and-go's and overshoots that each individual critical part except the fan shaft and LP turbine rotor shaft has experienced since entry into service for Pilot Training.

(i) If the number of touch-and-go's and overshoots on an individual critical part is less than one percent of the total number of FCs on the critical part, no further action is required by this AD.

(ii) If the number of touch-and-go's and overshoots on an individual critical part is one percent or more of the total number of FCs on the critical part, disregard the previous calculations of life on that individual critical part and retrospectively re-calculate the accumulated FCs of that individual critical part by the addition of one FC for every touch-and-go and overshoot to the total number of FCs.

Definitions

(f) A touch-and-go is a phase of a flight where a landing approach of an airplane is continued to the touch-down point and the airplane immediately takes off again without stopping.

(g) An overshoot is a phase of a flight where a landing approach of an airplane is not continued to the touch-down point. This includes missed approaches due to safety reasons, weather minimums, airplane engine configurations, runway incursions, and any other undetermined causes.

FAA AD Differences

(h) This AD differs from the Mandatory Continuing Airworthiness Information (MCAI) and/or service information as follows:

(1) This AD requires within 30 days after the effective date of this AD, revising the ALS of the operators' approved maintenance program (reference the TLM chapters 05-00-01 and 05-00-02 of the applicable EMs) to remove the requirement to record each touch-and-go or overshoot as $\frac{1}{5}$ of a FC on an engine installed on an airplane used for Pilot Training, and adding a requirement to record each touch-and-go or overshoot as 1 FC to the life of all critical parts and the fan blades. The MCAI requires that the revised method of life counting for each touch-and-go and overshoot be accomplished within 4 months.

(2) The MCAI requires determining the total number of touch-and-go's and overshoots that each individual critical part (except the fan shaft and LP turbine rotor shaft) has experienced since entry into service. This AD only requires determining those numbers for touch-and-go's and overshoots that had occurred during Pilot Training.

Alternative Methods of Compliance (AMOCs)

(i) The Manager, Engine Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

Related Information

(j) Refer to MCAI European Aviation Safety Agency Airworthiness Directive 2010-0077, dated April 20, 2010, and Rolls-Royce Deutschland Ltd & Co KG Alert Service Bulletin SB-BR700-72-A900504, Revision 1, dated February 19, 2010, for related information. Contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, Dahlewitz, 15827 Blankenfelde-Mahlow, Germany; phone: 49 0 33-7086-1883; fax: 49 0 33-7086-3276, for a copy of this service information.

(k) Contact Mark Riley, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: mark.riley@faa.gov; phone: 781-238-7758; fax: 781-238-7199, for more information about this AD.

Material Incorporated by Reference

(1) None.

Issued in Burlington, Massachusetts, on October 7, 2011.
Peter A. White,
Manager, Engine & Propeller Directorate,
Aircraft Certification Service.