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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-1055; Directorate Identifier 2012-NE-33-AD; Amendment 39-17351; AD 2013-03-17]

RIN 2120-AA64

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

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Rolls-Royce Deutschland Ltd & Co KG (RRD) BR700-710A1-10 and BR700-710A2-20 turbofan engines, and certain BR700-710C4-11 model engines. This AD was prompted by RRD performing an evaluation that determined that certain high-pressure turbine (HPT) stage 1 and stage 2 discs from a specific supplier may contain steel inclusions that may cause the discs to fail before they reach their current life limits. This AD requires reducing the life limits for certain HPT stage 1 and stage 2 discs. We are issuing this AD to prevent failure of the HPT stage 1 and stage 2 discs, which could result in uncontained failure of the engine and damage to the airplane.

DATES: This AD becomes effective March 21, 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.

FOR FURTHER INFORMATION CONTACT: Robert Morlath, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7154; fax: 781-238-7199; email: robert.c.morlath@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. That NPRM was published in the Federal Register on

November 16, 2012 (77 FR 68714). That NPRM proposed to correct an unsafe condition for the specified products. The Mandatory Continuing Airworthiness Information (MCAI) states:

The results of a recent quality review of high pressure turbine (HPT) stage 1 and stage 2 discs identified potential for steel inclusions in some production scale parts. Further investigation concluded that all affected parts were manufactured by Udimet 720I and melted by a certain supplier. Subsequent evaluation concluded that the affected parts life limitation values declared in the engine Time Limits Manual cannot be supported for discs with potential steel inclusion.

This condition, if not corrected, could lead to an uncontained HPT disc failure, potentially resulting in damage to, and/or reduced control of the aeroplane.

The FAA has further determined that the risk to the engine is increased by installing an HPT stage 1 disc and an HPT stage 2 disc from the affected population, on the same engine. Therefore the FAA is prohibiting the installation of an HPT stage 1 and HPT stage 2 discs from the affected population in the same engine. 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 (77 FR 68714, November 16, 2012).

Conclusion

We reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed (77 FR 68714, November 16, 2012).

Costs of Compliance

We estimate that this AD will affect about 10 engines installed on airplanes of U.S. registry. Prorated parts life will cost about \$210,000. Based on these figures, we estimate the cost of this AD on U.S. operators to be \$2,100,000. Our cost estimate is exclusive of possible warranty coverage.

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:



2013-03-17 Rolls-Royce Deutschland Ltd & Co KG (Formerly Rolls-Royce Deutschland GmbH, formerly BMW Rolls-Royce GmbH): Amendment 39-17351; Docket No. FAA-2012-1055; Directorate Identifier 2012-NE-33-AD.

(a) Effective Date

This airworthiness directive (AD) becomes effective March 21, 2013.

(b) Affected ADs

None.

(c) Applicability

This AD applies to the following Rolls-Royce Deutschland Ltd & Co KG (RRD) turbofan engines that have any of the high-pressure turbine (HPT) stage 1 or stage 2 discs with a serial number (S/N) listed in Table 1 to paragraph (c) of this AD, installed:

- (1) RRD BR700-710A1-10 and BR700-710A2-20 turbofan engines; and
- (2) BR700-710C4-11 model engines that have hardware configuration standard 710C4-11 or 710C4-11/10 engraved on the engine data plate.

Table 1 to Paragraph (c)–Affected HPT Stage 1 and Stage 2 Discs

| S/Ns of HPT Stage 1 Discs, Part Number (P/N) BRR23952 | S/Ns of HPT Stage 2 Discs, P/N BRR22008 |
|---|---|
| LDRQA05719 | LDRQA05791 |
| LDRQA05720 | LDRQA05944 |
| LDRQA05721 | LDRQA05945 |
| LDRQA05722 | |
| LDRQA05723 | |
| LDRQA05724 | |
| LDRQA05726 | |
| LDRQA05727 | |
| LDRQA05841 | |
| LDRQA05842 | |

(d) Reason

This AD was prompted by RRD performing an evaluation that determined that certain HPT stage 1 and stage 2 discs from a specific supplier may contain steel inclusions that may cause the discs to

fail before they reach their current life limits. We are issuing this AD to prevent failure of the HPT stage 1 and stage 2 discs, which could result in uncontained failure of the engine and damage to the airplane.

(e) Actions and Compliance

Unless already done, remove from service the HPT stage 1 and stage 2 discs listed by S/N in Table 1 to paragraph (c) of this AD, at the following:

(1) For BR700-710A1-10, BR700-710A2-20, and BR700-710C4-11 engine models (without RRD Mod 72-101466), remove the HPT stage 1 and stage 2 discs from service before accumulating 3,000 cycles-since-new (CSN).

(2) For the BR700-710C4-11 engine model (with RRD Mod 72-101466), remove the HPT stage 1 and stage 2 discs from service before accumulating 2,300 CSN.

(f) Installation Prohibition

After the effective date of this AD, do not install an HPT stage 1 and an HPT stage 2 disc, identified by S/N in Table 1 to paragraph (c) of this AD, in the same engine.

(g) 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.

(h) Related Information

(1) For more information about this AD, contact Robert Morlath, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7154; fax: 781-238-7199; email: robert.c.morlath@faa.gov.

(2) Refer to European Aviation Safety Agency Airworthiness Directive 2012-0166, dated August 30, 2012, and Rolls-Royce Deutschland Ltd & Co KG Alert Service Bulletin SB-BR700-72-A900508, dated July 26, 2012, 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.

(3) You may view this service information at the 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.

(i) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on February 5, 2013.

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