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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-0169; Directorate Identifier 2007-NE-45-AD; Amendment 39-15819; AD 2009-04-13]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG, BR700-715A1-30, BR700-715B1-30, and BR700-715C1-30 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:

The application of most recent 3D FEM modeling has resulted in the need to reconsider the disc lives as currently shown in the Time Limits Manual. The current Post Certification Life Statement for the low pressure (LP) compressor (fan) disc assembly revises the Declared Safe Cyclic Life (DSCL) from 33,000 flight cycles to 25,000 flight cycles for both the BR715 LP (fan) disc assembly Part No. (P/N) BRH10048 and BR715 LP compressor (fan) disc assembly P/N BRH19253, when installed in the BR700-715A1-30 engine model and operated against the Hawaiian Flight Mission.

We are issuing this AD to prevent uncontained failure of the LP compressor (fan) disc assembly and damage to the airplane.

DATES: This AD becomes effective March 26, 2009.

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: Jason Yang, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: Jason.yang@faa.gov; telephone (781) 238-7747; 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 February 5, 2008 (73 FR 6638). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states that:

The application of most recent 3D FEM modeling has resulted in the need to reconsider the disc lives as currently shown in the Time Limits Manual. The current Post Certification Life Statement for the low pressure (LP) compressor (fan) disc assembly revises the Declared Safe Cyclic Life (DSCL) from 33,000 flight cycles to 25,000 flight cycles for both the BR715 LP (fan) disc assembly P/N BRH10048 and BR715 LP compressor (fan) disc assembly P/N BRH19253, when installed in the BR700-715A1-30 engine model and operated against the Hawaiian Flight Mission.

This AD requires, within 25 flight cycles after the effective date of the AD:

- Amending the Airworthiness Limitations Section (ALS) of the Time Limits Manual SUBTASK 05-10-01-860-016, by revising the "GIVEN LIFE A1-30 RATING (FLIGHT CYCLES)" for both the LP compressor (fan) disc assembly P/N BRH10048 and LP compressor (fan) disc assembly P/N BRH19253 from 33,000 flight cycles to 25,000 flight cycles; and
- Checking the lifing of both the LP compressor (fan) disc assembly P/N BRH10048 and LP compressor (fan) disc assembly P/N BRH19253 if the relevant compressor (fan) disc assembly is currently installed or was previously installed, in the BR700-715A1-30 engine model and operated under the Hawaiian Flight Mission; and
- Removing the relevant compressor (fan) disc assembly from service before further flight, if the consumed life has exceeded the maximum approved life specified in the ALS.

Comments

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

Request To Change the AD Applicability

Rolls-Royce Deutschland requests that we change the AD applicability from "This AD applies to Rolls-Royce Deutschland Ltd & Co KG (RRD), BR700-715A1-30, BR700-715B1-30, and BR700-715C1-30 turbofan engines, with a low pressure (LP) compressor disc assembly, part number (P/N) BRH10048 or P/N BRH19253, when installed in the BR700-715A1-30 engine model and operated against the Hawaiian Flight Mission" to "This AD applies to Rolls-Royce Deutschland Ltd & Co KG (RRD), BR700-715A1-30, BR700-715B1-30, and BR700-715C1-30 turbofan engines, with a low pressure (LP) compressor disc assembly, P/N BRH10048 or P/N BRH19253". The commenter states that due to fan module mixing between engine models, the AD is applicable to all relevant fan assemblies that have, are, could, or will operate against the Hawaiian Flight Mission, when installed in the BR710-715A1-30 engine.

We agree, and changed the AD applicability.

Request To Combine the Compliance Requirements

Rolls-Royce Deutschland requests that the AD require the operators check the lifing of the LP compressor disc assemblies, P/N BRH10048 and P/N BRH19253, using the amended Time Limits Manual (TLM), whether currently installed or previously installed in the BR700-715A1-30 engine, and operated under the Hawaiian Flight mission.

We partially agree. Operators are responsible for following the applicable ALS of the TLM to ensure that all critical rotating parts are replaced within the life limitations specified in the Manual. However, for clarification purposes, we included this action in the AD.

Other AD Changes

We determined the AD must be complied with, within 25 flight cycles after the effective date of the AD, instead of 100 flight cycles after the effective date, as proposed, to expeditiously amend the ALS of the TLM with life reduction of the relevant fan disk assembly.

We also require removing fan disk assemblies from service before the next flight if their consumed life has exceeded the maximum approved life as specified in the ALS of the TLM. All life limited part must be removed from service before reaching its declared life in the ALS.

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 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 240 engines installed on aircraft of U.S. registry. This LP compressor (fan) disc assembly removal does not impose any additional labor costs if performed at the time of scheduled engine overhaul. We also estimate that it will take about one work-hour per engine to calculate and re-establish the achieved cyclic life for an LP compressor (fan) disc assembly, and that the average labor rate is \$80 per work-hour. We estimate that the prorate cost of the life reduction per engine will be \$33,000. Total cost of this AD is, therefore, \$7,939,200.

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 (telephone (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, 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:



2009-04-13 Rolls-Royce Deutschland Ltd & Co KG (formerly BMW Rolls-Royce GmbH, and BMW Rolls-Royce Aero Engines): Amendment 39-15819. Docket No. FAA-2007-0169; Directorate Identifier 2007-NE-45-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective March 26, 2009.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Rolls-Royce Deutschland Ltd & Co KG (RRD), BR700-715A1-30, BR700-715B1-30, and BR700-715C1-30 turbofan engines, with a low pressure (LP) compressor (fan) disc assembly, part number (P/N) BRH10048 or P/N BRH19253. These engines are installed on, but not limited to, McDonnell Douglas Corporation model 717-200 airplanes.

Reason

- (d) The mandatory continuous airworthiness information (MCAI) states:

The application of most recent 3D FEM modeling has resulted in the need to reconsider the disc lives as currently shown in the Time Limits Manual. The current Post Certification Life Statement for the low pressure (LP) compressor (fan) disc assembly revises the Declared Safe Cyclic Life (DSCL) from 33,000 flight cycles to 25,000 flight cycles for both the BR715 LP (fan) disc assembly P/N BRH10048 and BR715 LP compressor (fan) disc assembly P/N BRH19253, when installed in the BR700-715A1-30 engine model and operated against the Hawaiian Flight Mission.

This condition, if not corrected, could result in uncontained failure of the LP compressor (fan) disc assembly and damage to the airplane.

Actions and Compliance

(e) Within 25 flight cycles after the effective date of this AD, do the following actions, unless already done.

(1) Amend the Airworthiness Limitations Section (ALS) of the Time Limits Manual SUBTASK 05-10-01-860-016, by revising the "GIVEN LIFE A1-30 RATING (FLIGHT CYCLES)" for both the LP compressor (fan) disc assembly P/N BRH10048 and LP compressor (fan) disc assembly P/N BRH19253 from 33,000 flight cycles to 25,000 flight cycles.

(2) Check the lifing of both the LP compressor (fan) disc assembly P/N BRH10048 and LP compressor (fan) disc assembly P/N BRH19253 if the relevant compressor (fan) disc assembly is currently installed or was previously installed, in the BR700-715A1-30 engine model and operated under the Hawaiian Flight Mission.

(3) Remove the relevant compressor (fan) disc assembly from service before further flight, if the consumed life has exceeded the maximum approved life specified in the ALS.

Alternative Methods of Compliance (AMOC)

(f) 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

(g) Refer to MCAI European Aviation Safety Agency AD 2007-0116-E, dated May 4, 2007, for related information.

(h) Contact Jason Yang, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: Jason.yang@faa.gov; telephone (781) 238-7747; fax (781) 238-7199, for more information about this AD.

Issued in Burlington, Massachusetts, on February 10, 2009.
Peter A. White,
Assistant Manager, Engine and Propeller Directorate,
Aircraft Certification Service.