

[Federal Register: April 2, 2010 (Volume 75, Number 63)]
[Rules and Regulations]
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[DOCID:fr02ap10-6]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-19559; Directorate Identifier 2004-NE-03-AD; Amendment 39-16254; AD 2010-07-09]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc RB211-Trent 700 Series Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD) for Rolls-Royce plc RB211-Trent 700 series turbofan engines. That AD currently requires initial and repetitive borescope inspections of the high-pressure-and-intermediate pressure (HP-IP) turbine internal and external oil vent tubes for coking and carbon buildup, and cleaning or replacing the vent tubes if necessary. This AD requires the same actions, but adds additional inspections of the vent flow restrictor. This AD results from further analysis that the cleaning of the vent tubes required by AD 2007-02-05 could lead to loosened carbon fragments, causing a blockage downstream in the vent flow restrictor. We are issuing this AD to prevent internal oil fires due to coking and carbon buildup that could cause uncontained engine failure and damage to the airplane.

DATES: This AD becomes effective May 7, 2010. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of May 7, 2010.

ADDRESSES: You can get the service information identified in this AD from Rolls-Royce plc, P.O. Box 31, Derby, England; telephone: 011-44-1332-249428; fax: 011-44-1332-249223.

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: James Lawrence, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: james.lawrence@faa.gov; telephone (781) 238-7176; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 by superseding AD 2007-02-05, Amendment 39-14892 (72 FR 2603, January 22, 2007), with a proposed AD. The proposed AD applies to Rolls-Royce plc RB211-Trent 700 series turbofan engines. We published the proposed AD in the Federal Register on October 26, 2009 (74 FR 54940). That action proposed to require initial and repetitive borescope inspections of the HP-IP turbine internal and external oil vent tubes for coking and carbon buildup, cleaning or replacing the vent tubes if necessary, and inspections of the vent flow restrictor.

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.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

Request to Reference the Latest Service Bulletin

One commenter, Rolls-Royce plc, requests that we incorporate by reference the latest alert service bulletin (ASB) in the AD, which is ASB No. RB.211-72-AE302, Revision 8, dated October 21, 2009.

We agree. We changed the AD to incorporate by reference Revision 8 of that ASB.

Request To Allow Previous Credit

Rolls-Royce plc requests that we allow previous credit to operators that performed the initial inspections specified in paragraph (f) of the proposed AD before the AD effective date, using Revision 4, Revision 5, Revision 6, or Revision 7 of ASB No. RB.211-72-AE302.

We agree and added a previous credit paragraph to the AD.

Request to Change Initial Inspection Threshold

Rolls-Royce plc requests that we change the initial inspection threshold from 3 months to 2 months, to agree with the ASB.

We agree and changed the AD.

Clarification of AD Compliance Section

We clarified paragraphs (g) and (h) of the AD compliance section to better align with the Rolls-Royce plc ASB.

Conclusion

We have carefully 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 have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

Based on the service information, we estimate that this AD will affect about 33 engines of U.S. registry. We also estimate that it will take about one work-hour per engine to comply with this AD. The average labor rate is \$80 per work-hour. Required parts will cost about \$2,000 per engine. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$68,640.

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 have 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 that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under 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 summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary at the address listed under ADDRESSES.

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 Federal Aviation Administration 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 removing Amendment 39-14892 (72 FR 2603, January 22, 2007), and by adding a new airworthiness directive, Amendment 39-16254, to read as follows:



2010-07-09 Rolls-Royce plc: Amendment 39-16254. Docket No. FAA-2005-19559; Directorate Identifier 2004-NE-03-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective May 7, 2010.

Affected ADs

(b) This AD supersedes AD 2007-02-05, Amendment 39-14892.

Applicability

(c) This AD applies to Rolls-Royce plc RB211-Trent 768-60, RB211-Trent 772-60, and RB211-Trent 772B-60 series turbofan engines. These engines are installed on, but not limited to, Airbus A330-243, -341, -342 and -343 series airplanes.

Unsafe Condition

(d) This AD results from further analysis that the cleaning of the vent tubes required by AD 2007-02-05 could lead to loosened carbon fragments, causing a blockage downstream in the vent flow restrictor. We are issuing this AD to prevent internal oil fires due to coking and carbon buildup that could cause uncontained engine failure and damage to the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

Initial Inspections, Cleaning, and Replacements

(f) Using the schedule in Table 1 of this AD, borescope-inspect and clean as necessary, the high-pressure-and-intermediate pressure (HP-IP) turbine internal oil vent tubes, external oil vent tubes, and bearing chamber.

Table 1 - Initial Inspection Schedule

If the Engine or the 05 Module:	Then Initially Inspect:
Has reached 10,000 hours time-since-new (TSN) or reached 2,500 cycles-since-new (CSN) on the effective date of this AD.	Within 2 months after the effective date of this AD.
Has fewer than 10,000 hours TSN and fewer than 2,500 CSN on the effective date of this AD.	Within 2 months after reaching 10,000 hours TSN or 2,500 CSN, whichever occurs first.
Is returned for an engine shop visit.	Before returning to service.

(1) If after cleaning, there is still carbon in the vent tube that prevents cleaning tool number HU80298 from passing through the tube, then replace the internal oil vent tube within 10 cycles-in-service (CIS).

(2) If after cleaning, there is still carbon of visible thickness in either of the two external oil vent tubes, then replace the external oil vent tube before further flight.

(3) Use paragraphs 3.A. through 3.A.(7) of the Accomplishment Instructions and Appendix A of Rolls-Royce plc Alert Service Bulletin (ASB) No. RB.211-72-AE302, Revision 8, dated October 21, 2009, to do the borescope inspections and cleaning of the oil vent tubes and bearing chamber.

Initial Visual Inspection of the Vent Flow Restrictor

(g) For engines that, on the effective date of this AD, have not accumulated 25 service cycles since the last cleaning and inspection specified in paragraphs (f) through (f)(3) of this AD, visually inspect the vent flow restrictor:

- (1) Either after a high-power ground run immediately following the cleaning and inspection; or
- (2) Within 25 service cycles of the last cleaning and inspection.

(h) For engines that, on the effective date of this AD, have accumulated 25 or more service cycles since the last cleaning and inspection specified in paragraphs (f) through (f)(3) of this AD, visually inspect the vent flow restrictor within 25 service cycles after the effective date of this AD.

(i) Use paragraph 3.A.(8) of the Accomplishment Instructions of Rolls-Royce plc ASB No. RB.211-72-AE302, Revision 8, dated October 21, 2009, to do the visual inspections.

Repetitive Inspections, Cleaning, and Replacements

(j) Within 6,400 hours time-in-service since last inspection and cleaning, or within 1,600 cycles-since-last inspection and cleaning, or at the next engine shop visit, whichever occurs first, borescope-inspect the HP-IP turbine internal and external oil vent tubes and bearing chamber, and clean the oil vent tubes as necessary.

(1) If after cleaning there is still carbon in the internal oil vent tube that prevents cleaning tool, number HU80298, from passing through the tube, then replace the internal oil vent tube within 10 CIS.

(2) If after cleaning there is still carbon of visible thickness, in either of the two external oil vent tubes, then replace the external oil vent tube before further flight.

(3) Use paragraphs 3.A. through 3.A.(7) of the Accomplishment Instructions and Appendix A of Rolls-Royce plc ASB No. RB.211-72-AE302, Revision 8, dated October 21, 2009, to do the borescope inspections and cleaning of the oil vent tubes and bearing chamber.

(k) Visually inspect the vent flow restrictor either after a high-power ground run or within 25 service cycles after performing the cleaning and inspection specified in paragraph (f) through (f)(3) of this AD. Use paragraph 3.A.(8) of the Accomplishment Instructions of Rolls-Royce plc ASB No. RB.211-72-AE302, Revision 8, dated October 21, 2009, to do the visual inspection.

Definition

(l) For the purpose of this AD, an engine shop visit is induction of the engine into the engine shop for any cause.

Previous Credit

(m) Initial inspections specified in paragraph (f) of this AD and performed before the effective date of this AD using Rolls-Royce plc ASB No. RB.211-72-AE302, Revision 4, dated April 30, 2007, or Revision 5, dated May 22, 2007, or Revision 6, dated January 29, 2009, or Revision 7, dated April 30, 2009, satisfy the initial inspection requirements in paragraph (f) of this AD.

Alternative Methods of Compliance

(n) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD, if requested using the procedures found in 14 CFR 39.19.

Related Information

(o) European Aviation Safety Agency AD 2007-0201, dated August 1, 2007, and AD 2007-0202 (corrected August 8, 2007), also address the subject of this AD.

(p) Contact James Lawrence, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: james.lawrence@faa.gov; telephone (781) 238-7176; fax (781) 238-7199, for more information about this AD.

Material Incorporated by Reference

(q) You must use Rolls-Royce plc Alert Service Bulletin No. RB.211-72-AE302, Revision 8, dated October 21, 2009, including Appendix A, to perform the actions required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Rolls-Royce plc, P.O. Box 31, Derby, England; telephone: 011-44-1332-249428; fax: 011-44-1332-249223 for a copy of this service information. You may review copies at the FAA, New England Region, 12 New England Executive Park, Burlington, MA; or 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 March 25, 2010.
Robert J. Ganley,
Acting Manager, Engine and Propeller Directorate,
Aircraft Certification Service.