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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-23279; Directorate Identifier 2005-NE-44-AD; Amendment 39-14478; AD 2006-03-14]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc RB211 Trent 500 Series Turbofan Engines

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

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for Rolls Royce plc (RR) RB211 Trent 500 series turbofan engines. This AD requires initial and repetitive borescope inspections of the high pressure-and-intermediate pressure (HP-IP) turbine oil vent tubes and bearing chambers for coking and carbon buildup and replacing the vent tubes if necessary. This AD results from a report of an RB211 Trent 700 series engine that experienced a disk shaft separation, overspeed of the IP turbine rotor, and multiple blade release of IP turbine blades. Since the design arrangement in the Trent 500 series engines is similar to that of the Trent 700 series engines, the same failure could occur in the Trent 500 series engines. We are issuing this AD to prevent internal oil fires caused by coking and carbon buildup, that could result in uncontained engine failure and damage to the airplane.

DATES: Effective February 24, 2006. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of February 24, 2006.

We must receive any comments on this AD by April 10, 2006.

ADDRESSES: Use one of the following addresses to comment on this AD:

- DOT Docket Web site: Go to *http://dms.dot.gov* and follow the instructions for sending your comments electronically.
- Government-wide rulemaking Web site: Go to *http://www.regulations.gov* and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-0001.
- Fax: (202) 493-2251.
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Contact Rolls-Royce plc, Technical Publications, P.O. Box 31, Derby, DE24 8BJ, UK; telephone: 011-44-1332-242424; fax: 011-44-1332-249936, for the service information identified in this AD.

FOR FURTHER INFORMATION CONTACT: Christopher Spinney, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7175; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: The Civil Aviation Authority (CAA), which is the airworthiness authority for the United Kingdom (UK) recently notified us that an unsafe condition might exist on RR RB211 Trent 500 Series turbofan engines. The CAA advises that a previous service incident in a Trent 700 engine indicates that carbon restriction in the vent tube can cause over-pressurization of the HP-IP bearing chamber leading to oil ejection from the rear of the chamber. If this oil spray ignites, the fire can cause an IPT shaft failure, leading to overspeed and uncontained failure of the IPT disc. Since the design arrangement in the Trent 500 engines is similar to that of the Trent 700 engines, the same failure could occur in the Trent 500 series engines. We are issuing this AD to prevent internal oil fires caused by coking and carbon buildup, that could result in uncontained engine failure and damage to the airplane.

Relevant Service Information

We have reviewed and approved the technical contents of RR Alert Service Bulletin (ASB) RB.211-72-AE836, Revision 1, dated October 5, 2005. That ASB describes procedures for initial and repetitive borescope inspection and assessment of the HP-IP turbine oil vent tubes and bearing chamber. The CAA classified this service bulletin as mandatory and issued AD No. G-2005-0029, dated October 4, 2005, in order to ensure the airworthiness of these RR Trent 500 series engines in the U.K.

Bilateral Airworthiness Agreement

These RB211 Trent 500 series turbofan engines are manufactured in the U.K. and are type certificated for operation in the United States under the provisions of section 21.29 of the Federal Aviation Regulations (14 CFR 21.29) and the applicable bilateral airworthiness agreement. Under this bilateral airworthiness agreement, the CAA kept the FAA informed of the situation described above. We have examined the findings of the CAA, reviewed all available information, and determined that AD action is necessary for products of this type design that are certificated for operation in the United States.

FAA's Determination and Requirements of This AD

Although no airplanes that are registered in the United States use these engines, the possibility exists that the engines could be used on airplanes that are registered in the United States in the future. The unsafe condition described previously is likely to exist or develop on other RR RB211 Trent 500 series turbofan engines of the same type design. This AD requires initial and repetitive borescope inspections of the HP-IP turbine bearing oil vent tubes and bearing chambers for coking and carbon buildup; and replacement of the tubes if necessary.

We are issuing this AD to prevent internal oil fires from coking and carbon buildup that could cause uncontained engine failure and damage to the airplane. You must use the service information described previously to perform the actions required by this AD.

FAA's Determination of the Effective Date

Since there are currently no domestic operators of this engine model, notice and opportunity for public comment before issuing this AD are unnecessary. A situation exists that allows the immediate adoption of this regulation.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to send us any written relevant data, views, or arguments regarding this AD. Send your comments to an address listed under ADDRESSES. Include "AD Docket No. FAA-2005-23279; Directorate Identifier 2005-NE-44-AD" in the subject line of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify it.

We will post all comments we receive, without change, to *http://dms.dot.gov*, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this AD. Using the search function of the DMS Web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78) or you may visit *http://dms.dot.gov*.

Examining the AD Docket

You may examine the docket that contains the AD, any comments received, and any final disposition in person at the Docket Management Facility Docket Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647-5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in ADDRESSES. Comments will be available in the AD docket shortly after the DMS receives them.

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 the regulation:

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 summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under ADDRESSES. Include "AD Docket No. FAA-2005-23279; Directorate Identifier 2005-NE-44-AD" in your request.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Under the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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:

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

www.faa.gov/aircraft/safety/alerts/

2006-03-14 Rolls-Royce plc: Amendment 39-14478. Docket No. FAA-2005-23279; Directorate Identifier 2005-NE-44-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective February 24, 2006.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Rolls-Royce plc (RR) RB211 Trent 553-61, 553A2-61, 556B-61, 556A2-61, 556-61, 556B2-61, 560-61, and 560A2-61 turbofan engines. These engines are installed on, but not limited to, Airbus A340-500 and A340-600 series airplanes.

Unsafe Condition

(d) This AD results from a report of an RB211 Trent 700 series engine that experienced a disk shaft separation, overspeed of the IP turbine rotor, and multiple blade release of IP turbine blades. We are issuing this AD to prevent internal oil fires caused by coking and carbon buildup, that could result in 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 Inspection

(f) Using section 3, Parts A and B of the Accomplishment Instructions of RR Alert Service Bulletin (ASB) RB.211-72-AE836, Revision 1, dated October 5, 2005, perform an initial inspection of the high pressure-and-intermediate-pressure (HP-IP) turbine bearing oil vent tubes and bearing chambers as follows:

(1) For IP Turbine modules (05 modules) with 9,600 hours time-since-new (TSN) or 1,200 cycles-since-new (CSN) or more on the effective date of this AD, carry out the inspection within 2,400 hours time-in-service (TIS) or 300 cycles-in-service (CIS) from the effective date of this AD, whichever occurs first.

(2) For 05 modules that are below 9,600 hours TSN or 1,200 CSN on the effective date of this AD, carry out the inspection prior to 12,000 hours TSN or 1,500 CSN, whichever occurs first,.

Repetitive Inspections

(g) Repeat the inspection at intervals not to exceed 12,000 hours time-since-previous-inspection (TSPI) or 1,500 cycles-since-previous-inspection (CSPI), whichever occurs first, if at the previous inspection, any of the following conditions were observed:

(1) There was no carbon buildup of a visible thickness.

(2) The cleaning tool, HU82105, could pass along the full length of the internal vent tube into the bearing chamber.

(3) The 8 mm diameter borescope could pass along the full length of the internal vent tube into the bearing chamber.

(h) Repeat the inspection at intervals not to exceed 1,600 hours TSPI or 400 CSPI, whichever occurs first, if, at the previous inspection, the carbon restriction prevented the 8 mm diameter flexible borescope from passing through the internal vent tube, but the 6 mm diameter borescope could pass along the full length of the internal vent tube into the bearing chamber.

(i) Remove the engine within 10 CSPI, if the carbon restriction prevented the 6 mm diameter borescope from passing through the full length of the internal vent tubes.

05 Modules in the Shop

(j) For 05 modules in the shop on the effective date of this AD, inspect the vent tube for carbon buildup of a visible thickness and repair the vent tube as necessary prior to further flight. Information regarding the inspection and repair of vent tubes for 05 modules in the shop can be found in section B. of RR ASB RB.211-72-AE836, Revision 1, dated October 5, 2005.

Alternative Methods of Compliance

(k) 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

(l) United Kingdom Civil Aviation Authority airworthiness directive G-2005-0029, dated October 4, 2005, also addresses the subject of this AD.

Material Incorporated by Reference

(m) You must use Rolls-Royce plc Alert Service Bulletin RB.211-72-AE836, Revision 1, dated October 5, 2005, to perform the inspections 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, Technical Publications, P.O. Box 31, Derby, DE24 8BJ, UK; telephone: 011-44-1332-242424; fax: 011-44-1332-249936, for a copy of this service information. You may review copies at the Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-0001, on the internet at *http://dms.dot.gov*; 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/ibrlocations.html*.

Issued in Burlington, Massachusetts, on February 1, 2006.

Peter A. White,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 06-1145 Filed 2-8-06; 8:45 am]

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