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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0176; Directorate Identifier 2011-NE-05-AD; Amendment 39-16636; AD 2011-06-11]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc (RR) RB211-Trent 900 Series Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

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:

> An uncontained engine failure has recently occurred on a Rolls-Royce RB211 Trent 900 involving release of high energy debris and resulting in damage to the aeroplane. Analysis of the available elements from the incident investigation shows that an oil fire in the High Pressure/Intermediate Pressure (HP/IP) structure cavity may have initiated a sequence of events leading to rupture of the drive arm of the IP Turbine (IPT) disc and subsequent overspeed and burst of that same disc.

We are issuing this AD to prevent overspeed of the intermediate pressure turbine, which could result in loss of disc integrity, an uncontained failure of the engine, and damage to the airplane.

DATES: This AD becomes effective April 4, 2011.

We must receive comments on this AD by April 18, 2011.

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to http://www.regulations.gov and follow the instructions for sending your comments electronically.
- Mail: U.S. Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

- Fax: (202) 493-2251.

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 the same as the Mail address provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park; Burlington, MA 01803; e-mail: alan.strom@faa.gov; phone: (781) 238-7143; fax: (781) 238-7199.

SUPPLEMENTARY INFORMATION:

Discussion

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA Airworthiness Directive 2010-0262, dated December 13, 2010 (referred to after this as "the MCAI"), to correct an unsafe condition for the specified products. The MCAI states:

> An uncontained engine failure has recently occurred on a Rolls-Royce RB211 Trent 900 involving release of high energy debris and resulting in damage to the aeroplane. Analysis of the available elements from the incident investigation shows that an oil fire in the High Pressure/Intermediate Pressure (HP/IP) structure cavity may have initiated a sequence of events leading to rupture of the drive arm of the IP Turbine (IPT) disc and subsequent overspeed and burst of that same disc.
>
> Rolls-Royce has developed a modification of the Engine Electronic Controller (EEC) software, featuring an IPT Overspeed Protection System (IPTOS). The purpose of the IPTOS functionality is to detect engine conditions that may potentially lead to an IP turbine overspeed, and shut down the engine before the level of overspeed reaches the disc burst speed.

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

Relevant Service Information

Rolls-Royce plc has issued Trent 900 Series Propulsion Systems Alert Service Bulletin No. RB.211-73-AG639, dated December 3, 2010. The actions described in this service information are intended to correct the unsafe condition identified in the MCAI.

FAA's Determination and Requirements of This AD

This product has been approved by the aviation authority of the United Kingdom, and is approved for operation in the United States. Pursuant to our bilateral agreement with the United Kingdom, EASA has notified us of the unsafe condition described in the MCAI and service information referenced above. We are issuing this AD because we evaluated all information provided

by the EASA, and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

FAA's Determination of the Effective Date

Since no domestic operators use this product, notice and opportunity for public comment before issuing this AD are unnecessary. Therefore, we are adopting this regulation immediately.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and opportunity for public comment. We invite you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2011-0176; Directorate Identifier 2011-NE-05-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to http://www.regulations.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 Web site, anyone can find and read the comments in any of our dockets, including, if provided, 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).

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.

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:

2011-06-11 Rolls-Royce plc (RR): Amendment 39-16636; Docket No. FAA-2011-0176; Directorate Identifier 2011-NE-05-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective April 4, 2011.

Affected ADs

(b) None.

Applicability

(c) This AD applies to RR model RB211-Trent 970-84, 970B-84, 972-84, 972B-84, 977-84, 977B-84, and 980-84 turbofan engines. These engines are installed on, but not limited to, Airbus A380 series airplanes.

Reason

(d) An uncontained engine failure has recently occurred on a Rolls-Royce RB211 Trent 900 involving release of high energy debris and resulting in damage to the aeroplane. Analysis of the available elements from the incident investigation shows that an oil fire in the High Pressure/Intermediate Pressure (HP/IP) structure cavity may have initiated a sequence of events leading to rupture of the drive arm of the IP Turbine (IPT) disc and subsequent overspeed and burst of that same disc.

Rolls-Royce has developed a modification of the Engine Electronic Controller (EEC) software, featuring an IPT Overspeed Protection System (IPTOS). The purpose of the IPTOS functionality is to detect engine conditions that may potentially lead to an IP turbine overspeed, and shut down the engine before the level of overspeed reaches the disc burst speed.

We are issuing this AD to prevent overspeed of the intermediate pressure turbine, which could result in loss of disc integrity, an uncontained failure of the engine, and damage to the airplane.

Actions and Compliance

(e) Unless already done, do the following actions:

(1) Within 10 flight cycles after the effective date of this AD, incorporate software 10.6 to the EEC.

(2) Guidance on incorporating software 10.6 can be found in Rolls-Royce plc Trent 900 Series Propulsion Systems Alert Service Bulletin (SB) No. RB.211-73-AG639, dated December 3, 2010.

Prior Software Version Prohibition

(3) After incorporation of software 10.6, do not incorporate any software version prior to 10.6 to the EEC.

FAA AD Differences

(f) This AD differs from the Mandatory Continuing Airworthiness Information (MCAI) as follows:

(1) MCAI European Aviation Safety Agency (EASA) AD 2010-0262, dated December 13, 2010, requires that after EEC modification of an installed engine as required by that AD, do not intermix with any EEC software standards prior to modification 73-F328 (standard 9.2.1) on that airplane. This AD does not, because there are no U.S. registered airplanes with RB211-Trent 900 engines.

(2) MCAI EASA AD 2010-0262, dated December 13, 2010, states that from the effective date of the AD, no engine may be installed in an airplane unless the engine has incorporated the new software. This AD does not, because there are no U.S. registered airplanes with RB211-Trent 900 engines.

(3) MCAI EASA AD 2010-0262, dated December 13, 2010, allows incorporation of later approved versions of EEC software standards that will include IPTOS functionality. This AD does not. Instead, we prohibit software installation prior to version 10.6.

Alternative Methods of Compliance (AMOCs)

(g) 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

(h) Refer to MCAI EASA AD 2010-0262, dated December 13, 2010, and Rolls-Royce plc Trent 900 Series Propulsion Systems Alert SB No. RB.211-73-AG639, dated December 3, 2010, for related information.

(i) Contact Rolls-Royce plc, P.O. Box 31, Derby, DE24 8BJ, United Kingdom; phone: 44 1332 242424; fax: 44 1332 249936, for a copy of the service information referenced in this AD.

(j) Contact Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: alan.strom@faa.gov; phone: (781) 238-7143; fax: (781) 238-7199, for more information about this AD.

Material Incorporated by Reference

(k) None.

Issued in Burlington, Massachusetts, on March 11, 2011.
Peter A. White,
Acting Manager, Engine and Propeller Directorate,
Aircraft Certification Service.