EMERGENCY AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

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

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

DATE: September 8, 2008
AD #: 2008-19-51

This emergency airworthiness directive (AD) is sent to all owners and operators of Rolls-Royce Corporation (RRC) AE 3007A series turbofan engines. These engines are installed on, but not limited to Empresa Brasileira de Aeronautica S. A. (EMBRAER) EMB-135 and EMB-145 airplanes.

Background

This emergency AD results from reports of cracked high-pressure turbine (HPT) stage 2 wheels. This condition, if not corrected, could result in a possible uncontained failure of the HPT stage 2 wheel, which could cause damage to the airplane.

Explanation of Relevant Service Information

We have reviewed RRC Alert Service Bulletin (ASB) AE 3007A-A-72-367, dated September 5, 2008. The ASB describes procedures for eddy current inspection (ECI) of the HPT stage 2 wheel on AE 3007A series engines.

FAA's Determination and Requirements of the Rule

We have identified an unsafe condition that is likely to exist or develop on other RRC AE 3007A series turbofan engines of this same type design. This AD requires:

- Performing an ECI on the HPT stage 2 wheel that has 6,500 or more cycles-since-new (CSN) before the AE 3007A series engine is installed on an airplane after the effective date of this AD; and
- For HPT stage 2 wheels with 19,000 or more CSN, within 120 cycles-in-service (CIS) or the next time the engine is at a maintenance facility for any type of maintenance after the effective date of this AD, whichever occurs first, ECIs of HPT stage 2 wheels; and
- For HPT stage 2 wheels with 18,000 to 18,999 CSN, within 400 CIS or the next time the engine is at a maintenance facility for any type of maintenance after the effective date of this AD, whichever occurs first, ECIs of HPT stage 2 wheels; and
- For HPT stage 2 wheels with 16,000 to 17,999 CSN, within 600 CIS or the next time the engine is at a maintenance facility for any type of maintenance after the effective date of this AD, whichever occurs first, ECIs of HPT stage 2 wheels; and
- For HPT stage 2 wheels with 12,000 to 15,999 CSN, within 1,000 CIS or the next time the engine is at a maintenance facility for any type of maintenance after the effective date of this AD, whichever occurs first, ECIs of HPT stage 2 wheels; and
- For HPT stage 2 wheels with 6,500 to 11,999 CSN, within 2,000 CIS or the next time the engine is at a maintenance facility for any type of maintenance after the effective date of this AD, whichever occurs first, ECIs of HPT stage 2 wheels; and

- For HPT stage 2 wheels with fewer than 6,500 CSN, the next time the engine is at a maintenance facility for any type of maintenance after accumulating 6,500 CSN, but not to exceed 11,999 CSN, ECIs of HPT stage 2 wheels; and
- Repeating the ECI on the HPT stage 2 wheel within 2,500 cycles-since-last inspection.

You must use the service information described previously to perform these actions.

Interim Action

These actions are interim actions and we may take further rulemaking actions in the future.

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.

Determination of Rule's Effective Date

We are issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator, and it is effective immediately upon receipt.

2008-19-51 Rolls-Royce Corporation (RRC) (Formerly Allison Engine Company): Directorate Identifier 2008-NE-29-AD.

Effective Date

(a) Emergency AD 2008-19-51, issued on September 8, 2008, is effective upon receipt.

Affected ADs

(b) None.

Applicability

(c) This AD applies to RRC AE 3007A series turbofan engines. These engines are installed on, but not limited to, Empresa Brasileira de Aeronautica S. A. (EMBRAER) EMB-135 and EMB-145 airplanes.

Unsafe Condition

(d) This AD results from reports of cracked high-pressure turbine (HPT) stage 2 wheels. This condition, if not corrected, could result in a possible uncontained failure of the HPT stage 2 wheel, which could cause 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.

Installation Prohibition

(f) After the effective date of this AD, don't install any RRC AE 3007A series engine that has an HPT stage 2 wheel with 6,500 or more cycles-since-new (CSN) on any airplane unless the HPT stage 2 wheel was inspected as specified in RRC Alert Service Bulletin (ASB) AE 3007A-A-72-367, dated September 5, 2008.

Initial Eddy Current Inspection

(g) Perform an eddy current inspection (ECI) on the HPT stage 2 wheel using paragraphs 2.A. through 2.C.(4) of RRC ASB AE 3007A-A-72-367, dated September 5, 2008, and compliance times specified in Table 1 of this AD.

Table 1 – Compliance Times for ECI of the HPT Stage 2 Wheels

For HPT stage 2 wheels with	Perform ECI within
(1) 19,000 or more CSN on the effective date of this AD.	120 cycles-in-service (CIS) or the next time the engine is at any maintenance facility for a type of maintenance after the effective date of this AD, whichever occurs first.
(2) 18,000 to 18,999 CSN on the effective date of this AD.	400 CIS or the next time the engine is at a maintenance facility for any type of maintenance after the effective date of this AD, whichever occurs first.
(3) 16,000 to 17,999 CSN on the effective date of this AD.	600 CIS or the next time the engine is at a maintenance facility for any type of maintenance after the effective date of this AD, whichever occurs first.
(4) 12,000 to 15,999 CSN on the effective date of this AD.	1,000 CIS or the next time the engine is at a maintenance facility for any type of maintenance after the effective date of this AD, whichever occurs first.
(5) 6,500 to 11,999 CSN on the effective date of this AD.	2,000 CIS or the next time the engine is at a maintenance facility for any type of maintenance after the effective date of this AD, whichever occurs first.
(6) Fewer than 6,500 CSN on the effective date of this AD.	The next time the engine is at a maintenance facility for any type of maintenance after accumulating 6,500 CSN, but not to exceed 11,999 CSN.

Repetitive Inspection

(h) Thereafter, perform an ECI as specified in paragraph (g) of this AD within 2,500 cycles-since-last inspection.

Alternative Methods of Compliance

(i) The Manager, Chicago 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.

Special Flight Permits

(j) Under 14 CFR part 39.23, we are limiting the special flight permits for this AD by restricting the flight to essential flight crew only.

Related Information

(k) Rolls-Royce Corporation ASB AE 3007A-A-72-367, dated September 5, 2008, pertains to the subject of this AD.

Contact Information

(l) For further information, contact: Kyri Zaroyiannis, Aerospace Engineer, Chicago Aircraft Certification Office, Small Airplane Directorate, FAA, 2300 E. Devon Ave., Des Plaines, IL 60018; e-mail: kyri.zaroyiannis@faa.gov; telephone (847) 294-7836; fax (847) 294-7834.

Issued in Burlington, Massachusetts, on September 8, 2008.

Peter A. White,
Assistant Manager, Engine and Propeller Directorate,
Aircraft Certification Service.