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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2008-0230; Directorate Identifier 2007-NE-24-AD; Amendment 39-15809; AD 2009-04-03]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Rolls-Royce Corporation AE 3007A1E and AE 1107C Turboprop/Turboshaft Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for Rolls-Royce Corporation (RRC) AE 3007A1E and AE 1107C turboprop/turboshaft engines. This AD requires removal from service of certain 2nd stage, 3rd stage, and 4th stage compressor wheels, compressor cone shaft assemblies, and 1st to 2nd-stage turbine spacers at new, reduced, published life limits. This AD results from RRC applying an updated lifing methodology to the affected parts. We are issuing this AD to prevent low-cycle-fatigue failure of the parts listed in Table 1 of this AD, which could result in an uncontained engine failure and damage to the aircraft.

**DATES:** This AD becomes effective March 24, 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:** Michael Downs, Aerospace Engineer, Chicago Aircraft Certification Office, Small Airplane Directorate, FAA, 2300 E. Devon Ave., Des Plaines, IL 60018; telephone (847) 294-7870; fax (847) 294-7834.

**SUPPLEMENTARY INFORMATION:** The FAA proposed to amend 14 CFR part 39 with a proposed AD. The proposed AD applies to RRC AE 3007A1E and AE 1107C turboprop/turboshaft engines. We published the proposed AD in the Federal Register on June 11, 2008 (73 FR 33025). That action proposed to require removal from service of certain 2nd stage, 3rd stage, and 4th stage compressor wheels, compressor cone shaft assemblies, and 1st to 2nd-stage turbine spacers, at new, reduced, published life limits.

## **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 received no comments on the proposal or on the determination of the cost to the public.

## **Conclusion**

We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed.

## **Costs of Compliance**

We estimate that this AD will affect 220 AE 3007A1E turbofan engines installed on aircraft of U.S. registry. The action does not impose any additional labor costs since it will be performed at engine overhaul. Required parts will cost about \$100,000 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$22,000,000.

## **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, 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 adding the following new airworthiness directive:



**2009-04-03 Rolls-Royce Corporation (Formerly Allison Engine Company, Inc.):** Amendment 39-15809. Docket No. FAA-2008-0230; Directorate Identifier 2007-NE-24-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective March 24, 2009.

**Affected ADs**

(b) None.

**Applicability**

(c) This AD applies to Rolls-Royce Corporation (RRC) AE 3007A1E and AE 1107C turbofan/turboshaft engines, with the following parts in Table 1 installed, as applicable:

**Table 1 – Affected Parts and Reduced Life Limits**

<b>Engine</b>	<b>Part Name</b>	<b>Part Number</b>	<b>New Reduced Published Life Limit, in Flight Cycles</b>
AE 3007A1E	2 <sup>nd</sup> Stage Compressor Wheel	23050752	15,200
	3 <sup>rd</sup> Stage Compressor Wheel	23065303	13,300
AE 1107C	2 <sup>nd</sup> Stage Compressor Wheel	23050752	11,400
	2 <sup>nd</sup> Stage Compressor Wheel	23084157	11,400
	3 <sup>rd</sup> Stage Compressor Wheel	23065303	6,200
	3 <sup>rd</sup> Stage Compressor Wheel (serial numbers L72422, L72475, L72505, L130704, L130829, L130830, L138218, L138226, L138621, L206084, L206163)	23065303	5,000
	3 <sup>rd</sup> Stage Compressor Wheel	23084158	6,200
	4 <sup>th</sup> Stage Compressor Wheel	23050754	14,900
	4 <sup>th</sup> Stage Compressor Wheel	23071259	14,900
	4 <sup>th</sup> Stage Compressor Wheel	23084159	14,900
	Compressor Cone Shaft Assembly	23050728	2,900
	Compressor Cone Shaft Assembly	23070729	2,900
1 <sup>st</sup> to 2 <sup>nd</sup> -Stage Turbine Spacer	23065300	9,500	

AE 3007A1E turbofan engines are installed on, but not limited to, EMBRAER EMB-135BJ and EMB-145XR airplanes. AE 1107C turboshaft engines are U.S. type-certificated and are installed on, but not limited to, certain U.S. military aircraft.

### **Unsafe Condition**

(d) This AD results from RRC applying an updated lifing methodology to the affected parts. We are issuing this AD to prevent low-cycle-fatigue failure of the parts listed in Table 1 of this AD, which could result in an uncontained engine failure and damage to the aircraft.

### **Compliance**

(e) You are responsible for having the actions required by this AD performed within 5 days after the effective date of this AD, unless the actions have already been done.

(f) Remove from service the parts listed in Table 1 of this AD, at the new, reduced, published life limits specified in Table 1 of this AD.

### **Alternative Methods of Compliance**

(g) The Manager, Chicago Aircraft 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**

(h) RRC Alert Service Bulletin (ASB) No. AE 3007A-A-72-346, dated May 1, 2007; Service Bulletin No. AE 1107C-A-72-086, Revision 2, dated January 28, 2008; and ASB No. AE 1107C-A-72-089, dated January 28, 2008, also pertain to the subject of this AD. Contact Rolls-Royce Corporation, P.O. Box 420, Indianapolis, IN 46206-0420; telephone (317) 230-6400; fax (317) 230-4243, for a copy of this service information.

(i) Contact Michael Downs, Aerospace Engineer, Chicago Aircraft Certification Office, Small Airplane Directorate, FAA, 2300 E. Devon Ave., Des Plaines, IL 60018; telephone (847) 294-7870; fax (847) 294-7834, for more information about this AD.

Issued in Burlington, Massachusetts, on February 5, 2009.  
Peter A. White,  
Assistant Manager, Engine and Propeller Directorate,  
Aircraft Certification Service.