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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. 99-NE-46-AD; Amendment 39-12558; AD 2001-25-05]**

**RIN 2120-AA64**

**Airworthiness Directives; Rolls-Royce Corporation (Formerly Allison Engine Company) AE 3007 Series Turbofan Engines**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment supersedes an existing airworthiness directive (AD), that is applicable to Rolls-Royce Corporation (formerly Allison Engine Company) AE 3007 series turbofan engines. That AD currently requires removal of certain compressor cone shafts from service before exceeding new cyclic life limits and replacement with serviceable parts. This amendment requires increasing the cyclic life limit for certain serial numbers of new compressor cone shafts, part number (P/N) 23070729, that are used on AE3007A1/3 and AE3007A1P engines. This amendment is prompted by recent approved changes in engineering and manufacturing processes for new compressor cone shafts P/N 23070729. The actions specified by this AD are intended to prevent low-cycle fatigue (LCF) failure of cone shafts, which could result in an uncontained engine failure and damage to the airplane.

**DATES:** Effective date January 23, 2002.

**ADDRESSES:** The information in this AD may be examined, by appointment, at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

**FOR FURTHER INFORMATION CONTACT:** Michael Downs, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, Small Airplane Directorate, 2300 East Devon Avenue, Des Plaines, IL 60018; telephone: (847) 294-7870, fax: (847) 294-7834.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 2000-09-05, Amendment 39-11714 (65 FR 26121, May 5, 2000), which is applicable to Rolls-Royce Corporation (formerly Allison Engine Company)

AE 3007 series turbofan engines was published in the Federal Register on May 25, 2001 (66 FR 28850). That action proposed to require increasing the cyclic life limit for certain serial numbers of new compressor cone shafts, part number (P/N) 23070729, that are used on AE3007A1/3 and AE3007A1P engines.

## **Comments**

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were received on the proposal or the FAA's determination of the cost to the public. The FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

## **Economic Analysis**

There are approximately 598 Rolls-Royce Corporation (formerly Allison Engine Company) AE 3007 series turbofan engines of the affected design in the worldwide fleet. The FAA estimates that 364 engines installed on airplanes of U.S. registry will be affected by this AD, that it will take approximately 150 work hours per engine to accomplish the required actions, and that the average labor rate is \$60 per work hour. Required parts will cost approximately \$3,921 per engine. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be \$4,703,244.

## **Regulatory Analysis**

This final rule does not have federalism implications, as defined in Executive Order 13132, because it would 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. Accordingly, the FAA has not consulted with state authorities prior to publication of this final rule.

For the reasons discussed above, I certify that this action (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) if promulgated, 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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Safety.

## **Adoption of the Amendment**

Accordingly, pursuant to 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.

**Sec. 39.13 [Amended]**

2. Section 39.13 is amended by removing Amendment 39-11714 (65 FR 26121, May 5, 2000) and by adding a new airworthiness directive, Amendment 39-12558, to read as follows:

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

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

*We post ADs on the internet at "av-info.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2001-25-05 Rolls-Royce Corporation:** Amendment 39-12558. Docket No. 99-NE-46-AD.  
Supersedes AD 2000-09-05, Amendment 39-11714.

## *Applicability*

This airworthiness directive (AD) is applicable to Rolls-Royce Corporation (formerly Allison Engine Company) models AE 3007A, AE 3007A1, AE 3007A1/1, AE 3007A1/2, AE 3007A1/3, AE 3007A1P, and AE 3007C turbofan engines, with compressor cone shafts, part numbers (P/N's) 23050728 and 23070729, installed. These engines are installed on but not limited to EMBRAER EMB-135 and EMB-145 series and Cessna 750 series airplanes.

**Note 1:** This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (h) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

## *Compliance*

Compliance with this AD is required as indicated, unless already done.

To prevent low-cycle fatigue (LCF) failure of cone shafts, which could result in an uncontained engine failure and damage to the airplane, do the following:

- (a) For Rolls-Royce Corporation model AE 3007A engines, remove cone shafts from service prior to accumulating 9,500 cycles-since-new (CSN) and replace with serviceable parts.
- (b) For Rolls-Royce Corporation model AE 3007C engines, remove cone shafts from service prior to accumulating 14,500 CSN and replace with serviceable parts.
- (c) For Roll-Royce Corporation models AE 3007A1, AE 3007A1/1, and AE 3007A1/2 engines, remove cone shafts from service prior to accumulating 7,500 CSN and replace with serviceable parts.
- (d) For Rolls-Royce Corporation model AE 3007A1/3 engines:
  - (1) With compressor cone shafts P/N 23070729, serial number (SN) MM78599, MM78615, MM78632, MM78650, MM78651, MM78652, MM78653, MM78654, MM78655, MM78656, MM78657, MM78658, MM78659, MM78660, MM78661, MM78662, MM78663, MM78665 or higher, remove cone shafts from service prior to accumulating 9,300 CSN and replace with serviceable parts.
  - (2) With compressor cone shafts P/N 23050728, or P/N 23070729 having other than the S/N's listed in paragraph (d)(1) of this AD, remove cone shafts from service prior to accumulating 3,500 CSN and replace with serviceable parts.

(e) For Rolls-Royce Corporation AE 3007A1P engines:

(1) With compressor cone shafts P/N 23070729, SN MM78599, MM78615, MM78632, MM78650, MM78651, MM78652, MM78653, MM78654, MM78655, MM78656, MM78657, MM78658, MM78659, MM78660, MM78661, MM78662, MM78663, MM78665 or higher, remove cone shafts from service prior to accumulating 7,300 CSN and replace with serviceable parts.

(2) With compressor cone shafts P/N 23050728, or P/N 23070729 having other than the SN's listed in paragraph (e)(1) of this AD, remove cone shafts from service prior to accumulating 2,400 CSN and replace with serviceable parts.

### **New Life Limits**

(f) Paragraphs (a), (b), (c), (d) and (e) of this AD establish new, lower life limits for cone shafts, P/N's 23050728 and 23070729.

(g) Except for the provisions of paragraph (h) of this AD, no cone shafts, P/Ns 23050728 and 23070729, may remain in service exceeding the life limits established in paragraphs (a), (b), (c), (d) and (e) of this AD.

### **Alternative Methods of Compliance**

(h) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Chicago Aircraft Certification Office. Operators must submit their request through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Chicago Aircraft Certification Office.

**Note 2:** Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Chicago Aircraft Certification Office.

### **Special Flight Permits**

(i) Special flight permits may be issued in accordance Secs. 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be done.

### **Effective Date**

(j) This amendment becomes effective on January 23, 2002.

Issued in Burlington, Massachusetts, on December 7, 2001.

**Jay J. Pardee,**

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

[FR Doc. 01-30952 Filed 12-18-01; 8:45 am]

**BILLING CODE 4910-13-P**