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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2011-0599; Directorate Identifier 2011-NE-19-AD; Amendment 39-16922; AD 2012-01-10]**

**RIN 2120-AA64**

#### **Airworthiness Directives; General Electric Company Turbofan Engines**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for General Electric Company (GE) CF34-10E series turbofan engines. This AD was prompted by a report of heavy wear found on the seating surface of the center vent duct (CVD) (commonly referred to as center vent tube) support ring and on the inside diameter of the fan drive shaft at the mating location. This AD requires removing from service all CVD support assemblies and any fan drive shaft on the affected engines if wear is found on either the CVD support ring or the fan drive shaft. We are issuing this AD to prevent fan drive shaft failure, leading to uncontained engine failure and damage to the airplane.

**DATES:** This AD is effective February 27, 2012.

**ADDRESSES:** For service information identified in this AD, contact GE-Aviation, M/D Rm. 285, One Neumann Way, Cincinnati, OH 45215, phone: (513) 552-3272; email: geae.aoc@ge.com. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call (781) 238-7125.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility 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 address for the Docket Office (phone: (800) 647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** John Frost, Aerospace Engineer, Engine Certification Office, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: (781) 238-7756; fax: (781) 238-7199; email: john.frost@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM published in the Federal Register on October 18, 2011 (76 FR 64287). That NPRM proposed to require removing from service all CVD support assemblies and any fan drive shaft on the affected engines if wear is found on either the CVD support ring or the inside diameter of the fan drive shaft.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and the FAA's response to each comment.

#### **Request To Include an Engine Serial Number (S/N)**

One commenter, Embraer Aircraft Maintenance Services, requests that we include engine S/N 994187 in the applicability. They cite the GE All Operators Wire they received as being accurate with the affected engine S/Ns, which includes S/N 994187.

We agree. We added S/N 994187.

#### **Request To Allow Previous Credit**

One commenter, GE, requests that we allow previous credit for engines with records of prior CVD support assembly replacement and fan drive shaft inspection per the Engine Manual, before the effective date of the AD.

We agree that previous credit should be allowed. Paragraph (e) of the AD requires compliance before accumulating 11,500 total cycles-in-service on the engine, unless already done. We did not change the AD.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the change described previously.

### **Costs of Compliance**

We estimate that this AD will affect 71 GE CF34-10E series turbofan engines installed on airplanes of U.S. registry. We also estimate that it will take about 8 work-hours per engine to perform a replacement of the CVD support assembly and visual inspections, and that the average labor rate is \$85 per work-hour. A replacement CVD support assembly costs about \$3,080. We estimate that two fan drive shafts will fail inspection and require replacement. A replacement fan drive shaft costs about \$126,900. We estimate that no additional labor costs would be incurred to perform the required part replacements as the replacements are done at time of scheduled engine shop visit. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$520,760.

## **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**

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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

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

Air transportation, Aircraft, Aviation safety, Incorporation by reference, 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 airworthiness directive (AD):



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**2012-01-10 General Electric Company:** Amendment 39-16922; Docket No. FAA-2011-0599; Directorate Identifier 2011-NE-19-AD.

**(a) Effective Date**

This AD is effective February 27, 2012.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to General Electric Company (GE) CF34-10E series turbofan engines, serial number (S/N) 994116, and S/Ns 994118 through 994187, inclusive.

**(d) Unsafe Condition**

This AD was prompted by a report of heavy wear found on the seating surface of the center vent duct (CVD) (commonly referred to as center vent tube) support ring and on the inside diameter of the fan drive shaft at the mating location. The wear is caused by relative motion between the CVD support assembly (consisting of self-locking nut, part number (P/N) 2226M57G03, threaded sleeve, P/N 2226M55P03, and support ring, P/N 2226M56P01) and the fan drive shaft, during engine operation. We are issuing this AD to prevent fan drive shaft failure, leading to uncontained engine failure and damage to the airplane.

**(e) Compliance**

Comply with this AD before accumulating 11,500 total cycles-in-service on the engine, unless already done.

**(f) Removal from Service of CVD Support Assembly and Determination of Fan Drive Shaft Serviceability**

Visually inspect the seating surface of the CVD support ring for wear.

(1) If there is sign of wear on the CVD support ring, remove the CVD support assembly and the fan drive shaft from service before further flight.

(2) If there is no sign of wear on the CVD support ring, remove the CVD support assembly from service and borescope inspect the inside diameter of the fan drive shaft at the CVD support ring contact area for wear.

(3) If there is sign of wear on the inside diameter of the fan drive shaft, remove the fan drive shaft from service before further flight.

**(g) Installation Prohibition**

After the effective date of this AD, do not return to service any CVD support assembly (consisting of self-locking nut, P/N 2226M57G03, threaded sleeve, P/N 2226M55P03, and support ring, P/N 2226M56P01) or fan drive shaft removed from service as specified in this AD.

**(h) Definition**

For the purposes of this AD, the phrase “sign of wear” is defined as any visual indication of removal of parent material from the CVD seating surface or the fan drive shaft.

**(i) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(j) Related Information**

(1) For more information about this AD, contact John Frost, Aerospace Engineer, Engine Certification Office, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: (781) 238-7756; fax: (781) 238-7199; email: john.frost@faa.gov.

(2) GE Service Bulletin No. CF34-10E S/B 72-0188, dated April 12, 2011, pertains to the subject of this AD. For service information identified in this AD, contact GE-Aviation, M/D Rm. 285, One Neumann Way, Cincinnati, OH 45215, phone: (513) 552-3272; email: geae.aoc@ge.com.

(3) You may review copies of the service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call (781) 238-7125.

**(k) Material Incorporated by Reference**

None.

Issued in Burlington, Massachusetts, on January 12, 2012.  
Peter A. White,  
Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.