**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA–2005–22124; Directorate Identifier 2005–NE–21–AD]**

**RIN 2120–AA64**

## Airworthiness Directives; General Electric Company CF6–45A, CF6–50A, CF6–50C, and CF6–50E Series Turbofan Engines

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

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for General Electric Company (GE) CF6–45A, CF6–50A, CF6–50C, and CF6–50E series turbofan engines. This proposed AD would require removing from service pre-GE Service Bulletin (SB) No. CF6–50 S/B 72–1268 configuration low pressure turbine (LPT) stage 2 interstage seal assemblies and stage 3 interstage seal assemblies. The proposed AD would also require installing new or reworked configuration stage 2 interstage seal assemblies and stage 3 interstage seal assemblies. This proposed AD results from reports of fan mid shaft separation, leading to separation of the LPT stage 1 disk, disk overspeed, and uncontained engine failure. We are proposing this AD to prevent uncontained engine failure and damage to the airplane.

**DATES:** We must receive any comments on this proposed AD by October 18, 2005.

**ADDRESSES:** Use one of the following addresses to comment on this proposed AD.

- DOT Docket Web site: Go to *http://dms.dot.gov* and follow the instructions for sending your comments electronically.
- Government-wide rulemaking Web site: Go to *http://www.regulations.gov* and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL–401, Washington, DC 20590–0001.
- Fax: (202) 493–2251.
- Hand Delivery: Room PL–401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Contact General Electric Company via Lockheed Martin Technology Services, 10525 Chester Road, Suite C, Cincinnati, Ohio 45215, telephone (513) 672–8400, fax (513) 672–8422, for the service information identified in this proposed AD.

You may examine the comments on this proposed AD in the AD docket on the Internet at *http://dms.dot.gov.*

**FOR FURTHER INFORMATION CONTACT:** Karen Curtis, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; telephone (781) 238–7192; fax (781) 238–7199.

**SUPPLEMENTARY INFORMATION:**

### Comments Invited

We invite you to send us any written relevant data, views, or arguments regarding this proposal. Send your comments to an address listed under **ADDRESSES**. Include ''Docket No. FAA–2005–22124; Directorate Identifier 2005–NE–21–AD'' in the subject line of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments received by the closing date and may amend the proposed AD in light of those comments.

We will post all comments we receive, without change, to *http://dms.dot.gov,* including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD. Using the search function of the Docket Management System (DMS) web site, anyone can find and read the comments in any of our dockets. This includes 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) or you may visit *http://dms.dot.gov.*

### Examining the AD Docket

You may examine the docket that contains the proposal, any comments received and, any final disposition in person at the DMS Docket Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647–5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in **ADDRESSES**. Comments will be available in the AD docket shortly after the DMS receives them.

### Discussion

Since 1975, there have been 13 reports of fan mid shaft separation in GE CF6–45A, CF6–50A, CF6–50C, and CF6–50E series turbofan engines. Two of these separations resulted in disk separation and uncontained engine failure. Another of these separations resulted in partial cut-through of the stage 1 disk spacer arm. On December 3, 1998, the National Transportation Safety Board issued Safety Recommendation No. A–98–125, to require GE to modify the engines to eliminate the cause of these uncontained engine failures. GE performed an extensive investigation which revealed that when a fan mid shaft separates, early contact and heavy rubbing of the stage 2 interstage seal assembly and stage 3 interstage seal assembly occurs with the stage 1 disk spacer arms. This heavy rubbing leads to separation of the LPT stage 1 disk, disk overspeed, and uncontained engine failure. The axial length of the current configuration seals, and their honeycomb density are the cause for the early contact and heavy rubbing. When a fan mid shaft separates, the intended failure sequence is for the LPT blade airfoils to be fragmented by contact with the LPT nozzles, causing the LPT rotor to decelerate, preventing uncontained engine failure. This condition, if not corrected, could result in uncontained engine failure and damage to the airplane. As corrective action, GE has introduced a redesigned stage 2 interstage seal assembly configuration and a redesigned stage 3 interstage seal assembly configuration that have a reduced axial length and a lower density honeycomb.

### FAA's Determination and Requirements of the Proposed AD

We have evaluated all pertinent information and identified an unsafe condition that is likely to exist or develop on other products of this same type design. We are proposing this AD, which would require:

- Removal from service of the pre-SB No. CF6–50 S/B 72–1268 configuration LPT stage 2 interstage seal assembly.
- Installation of a new or reworked configuration LPT stage 2 interstage seal assembly, part number (P/N) 9198M81G05, 2092M13G01, 2092M13G02, or 2092M13G03, or other FAA-approved equivalent part.
- Removal from service of the pre-SB No. CF6–50 S/B 72–1268 configuration stage 3 interstage seal assembly.

• Installation of a new or reworked configuration stage 3 interstage seal assembly, P/N 9044M29G17 or 2092M14G01, or other FAA-approved equivalent part.

These actions would be required at the next disassembly of the LPT stage 2 interstage seal assembly and stage 3 interstage seal assembly from the LPT stator after the effective date of the proposed AD, but no later than December 31, 2010.

**Costs of Compliance**

There are about 2,079 CF6–45A, CF6–50A, CF6–50C, and CF6–50E series turbofan engines of the affected design in the worldwide fleet. We estimate that 790 engines installed on airplanes of U.S. registry would be affected by this proposed AD. We also estimate that it would take about 5 work hours per engine to rework the stage 2 interstage seal assembly and the stage 3 interstage seal assembly. The average labor rate is $65 per work hour. We estimate that 90% of the affected engines will have the parts reworked, and 10% will have new parts installed. A new stage 2 interstage seal assembly and new stage 3 interstage seal assembly would cost about $26,758 per engine. Based on these figures, we estimate the total cost of the proposed AD to U.S. operators to be $2,344,957.

**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 proposed 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 proposed 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 proposed AD would not have federalism implications under Executive Order 13132. This proposed AD 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.

For the reasons discussed above, I certify that the proposed regulation:

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. Would 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 proposed AD. See the **ADDRESSES** section for a location to examine the regulatory evaluation.

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

Air transportation, Aircraft, Aviation safety, Safety.

**The Proposed Amendment**

Under the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 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:

**General Electric Company:** Docket No. FAA–2005–22124; Directorate Identifier 2005–NE–21–AD.

**Comments Due Date**

(a) The Federal Aviation Administration (FAA) must receive comments on this airworthiness directive (AD) action by October 18, 2005.

**Affected ADs**

(b) None.

**Applicability**

(c) This AD applies to General Electric Company (GE) CF6–45A, CF6–50A, CF6–50C, and CF6–50E series turbofan engines. These engines are installed on, but not limited to, Boeing DC10 and 747 series airplanes, and Airbus Industrie A300 series airplanes.

**Unsafe Condition**

(d) This AD results from reports of fan mid shaft separation, leading to separation of the LPT stage 1 disk, disk overspeed, and uncontained engine failure. We are issuing this AD to prevent uncontained engine failure and damage to the airplane.

**Compliance**

(e) You are responsible for having the actions required by this AD performed at the next disassembly of the low pressure turbine (LPT) stage 2 interstage seal assembly and stage 3 interstage seal assembly from the LPT stator after the effective date of this AD, but no later than December 31, 2010, unless the actions have already been done.

**Stage 2 Interstage Seal Assemblies**

(f) Remove from service the pre-GE Service Bulletin (SB) No. CF6–50 72–1268 configuration LPT stage 2 interstage seal assembly.

(g) Install a new or reworked configuration LPT stage 2 interstage seal assembly, part number (P/N) 9198M81G05, 2092M13G01, 2092M13G02, or 2092M13G03, or other FAA-approved equivalent part.

(h) Information on reworking the pre-SB No. CF6–50 S/B 72–1268 configuration stage 2 interstage seal assembly to the new configuration can be found in GE SB No. CF6–50 S/B 72–1268, dated December 16, 2004.

**Stage 3 Interstage Seal Assemblies**

(i) Remove from service the pre-SB No. CF6–50 S/B 72–1268 configuration stage 3 interstage seal assembly.

(j) Install a new or reworked configuration LPT stage 3 interstage seal assembly, P/N 9044M29G17 or 2092M14G01, or other FAA-approved equivalent part.

(k) Information on reworking the pre-SB No. CF6–50 S/B 72–1268 configuration stage 3 interstage seal assembly to the new configuration can be found in GE SB No. CF6–50 S/B 72–1268, dated December 16, 2004.

**Prohibition of Pre-SB No. CF6–50 S/B 72–1268 Configurations**

(l) After the effective date of this AD, do not install pre-SB No. CF6–50 S/B 72–1268 configuration LPT stage 2 interstage seal assemblies or stage 3 interstage seal assemblies into any engine.

**Alternative Methods of Compliance**

(m) The Manager, Engine 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**

(n) National Transportation Safety Board Safety Recommendation No. A–98–125, dated December 3, 1998, pertains to the subject of this AD.

Issued in Burlington, Massachusetts, on August 12, 2005.

**Peter A. White,**

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

[FR Doc. 05–16452 Filed 8–18–05; 8:45 am]

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