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DEPT. OF TRANSPORTATION  
DOCKETS

**DEPARTMENT OF TRANSPORTATION (DOT)**

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**Federal Aviation Administration**

**14 CFR Part 39**

[Docket No. FAA-2004-18648; Directorate Identifier 2004-NE-26-AD; Amendment  
39-13737; AD 2004-15-03]

**RIN 2120-AA64**

**Airworthiness Directives; General Electric Company CF34-3A1 and -3B1 Series**

**Turbofan Engines**

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

**ACTION:** Final rule; request for comments.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for General Electric Company (GE) CF34-3A1 and -3B1 series turbofan engines with certain serial numbers (SNs) of stage 5 low pressure turbine (LPT) disks, part number (P/N) 6078T92P01, and or certain SNs of stage 6 LPT disks, P/N 6089T89P01. This AD requires initial and repetitive visual and eddy current inspections of those disks. This AD also allows as optional terminating action to the repetitive inspections, replacement of those SN disks. This AD also requires replacement of certain stage 5 and stage 6 LPT disks. This AD results from a report of a stage 5 LPT disk that failed due to cracking from low-cycle-fatigue (LCF) during factory testing. We are issuing this AD to prevent LCF failure of stage 5 LPT disks and stage 6 LPT disks, which could lead to uncontained engine failure.

**DATES:** This AD becomes effective [Insert date 15 days after date of publication in the FEDERAL REGISTER]. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of [Insert date 15 days after date of publication in the FEDERAL REGISTER].

We must receive any comments on this AD by [Insert date 60 days after date of publication in the FEDERAL REGISTER].

**ADDRESSES:** Use one of the following addresses to submit comments on this 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; US Department of Transportation, 400 Seventh Street, S.W., Nassif Building, Room PL-401, Washington, DC 20590-001.
- Fax: (202) 493-2251.
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, S.W., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

You can get the service information identified in this AD from GE Aircraft Engines, 1000 Western Avenue, Lynn, MA 01910; Attention: CF34 Product Support Engineering, Mail Zone: 34017; telephone (781) 594-6323; fax (781) 594-0600.

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

**FOR FURTHER INFORMATION CONTACT:** Robert Grant, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7757; fax (781) 238-7199.

**SUPPLEMENTARY INFORMATION:** In February of 2004, we became aware of an LCF failure of a stage 5 LPT disk that occurred during factory testing. GE performed a metallurgical evaluation of the disk. The evaluation showed that the origin of the LCF failure was at a disk location contacted inadvertently by electrochemical etch probes. These probes were used to match-mark components during engine assembly. The evaluation concluded that the probe contact caused damage known as electrical arc-out. Electrical arc-out damage can lead to LCF failure of the disk. This condition, if not corrected, could result in uncontained engine failure.

**Relevant Service Information**

We have reviewed and approved the technical contents of GE Alert Service Bulletin No. CF34-AL S/B 72-A0173, Revision 3, dated July 20, 2004, that lists applicable disks by SN, and describes the procedures for performing visual and eddy current inspections on the applicable stage 5 LPT disks and stage 6 LPT disks.

**FAA's Determination and Requirements of this AD**

The unsafe condition described previously is likely to exist or develop on other GE CF34-3A1 and -3B1 series turbofan engines of the same type design. We are issuing this AD to prevent LCF failure of stage 5 LPT disks and stage 6 LPT disks, which could lead to uncontained engine failure. This AD requires:

- Initial and repetitive visual and eddy current inspections of certain SN stage 5 LPT disks and stage 6 LPT disks.
- Replacement of the suspect disks as optional terminating action to the repetitive inspections.
- Replacement of certain stage 5 LPT disks and stage 6 LPT disks.

You must use the service information described previously to perform the actions required by this AD.

#### **FAA's Determination of the Effective Date**

Since an unsafe condition exists that requires the immediate adoption of this AD, we have found that notice and opportunity for public comment before issuing this AD are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

#### **Docket Management System (DMS)**

We have implemented new procedures for maintaining AD docket electronically. As of May 17, 2004, we posted new AD actions on the DMS and assigned a DMS docket number. We track each action and assign a corresponding Directorate identifier. The DMS docket No. is in the form "Docket No. FAA-200X-XXXXX." Each DMS docket also lists the Directorate identifier ("Old Docket Number") as a cross-reference for searching purposes.

#### **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to submit any written relevant data, views, or arguments regarding this AD. Send your

comments to an address listed under ADDRESSES. Include “AD Docket No. FAA-2004-18648; Directorate Identifier 2004-NE-26-AD” in the subject line of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify it.

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 AD. Using the search function of the DMS web site, anyone can find and read the comments in any of our dockets, including 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>.

We are reviewing the writing style we currently use in regulatory documents. We are interested in your comments on whether the style of this document is clear, and your suggestions to improve the clarity of our communications with you. You can get more information about plain language at <http://www.faa.gov/language> and <http://www.plainlanguage.gov>.

### **Examining the AD Docket**

You may examine the docket that contains the AD, any comments received, and any final disposition in person at the DMS Docket Offices between 9:00 a.m. and 5:00 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.

**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 the 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. 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, Incorporation by reference, Safety.

**Adoption of the Amendment**

Under 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.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2004-15-03 **General Electric Company:** Amendment 39-13737. Docket No. FAA-2004-18648; Directorate Identifier 2004-NE-26-AD.

#### **Effective Date**

(a) This airworthiness directive (AD) becomes effective [insert date 15 days after date of publication in the FEDERAL REGISTER].

#### **Affected ADs**

(b) None.

#### **Applicability**

(c) This AD applies to General Electric Company (GE) CF34-3A1 and -3B1 series turbofan engines with stage 5 low pressure turbine (LPT) disks, part number (P/N) 6078T92P01, and or stage 6 LPT disks, P/N 6089T89P01, with serial numbers (SNs) listed in Figure 3 of GE Alert Service Bulletin (ASB) No. CF34-AL S/B 72-A0173, Revision 3, dated July 20, 2004. These engines are installed on, but not limited to, Bombardier Canadair CL600-2B19 (RJ) airplanes.

#### **Unsafe Condition**

(d) This AD results from a report of a stage 5 LPT disk that failed due to cracking from low-cycle-fatigue during factory testing. The crack started at the site of an electrical arc-out.

## 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.

## Initial Inspection or Replacement

(f) Using the compliance schedule in Table 1 of this AD:

(1) Visually inspect and eddy current inspect (ECI) applicable stage 5 LPT disks and applicable stage 6 LPT disks using paragraphs 3.C.(1) through 3.E.(6) of GE ASB No. CF34-AL S/B 72-A0173, Revision 3, dated July 20, 2004, if the inspections can be completed within 9 calendar months after the effective date of this AD; or

(2) If the inspections specified in paragraph (f)(1) of this AD cannot be completed within 9 calendar months after the effective date of this AD, replace applicable stage 5 LPT disks and applicable stage 6 LPT disks with a serviceable disk using the compliance schedule in Table 1 of this AD.

(3) The requirements of paragraphs (f)(1) and (f)(2) of this AD do not apply if the inspections were conducted using paragraph (g)(1) of this AD.

**Table 1 Compliance Schedule**

<b>On the Effective Date of This AD, If the Disk Has:</b>	<b>Then Perform the Actions Defined in Paragraph (f) of This AD at Next Piece-Part Exposure, Not to Exceed the Accumulation of:</b>
(i) 14,750 or more cycles-since-new (CSN) and has not been fluorescent penetrant inspected (FPI) at an earlier piece-part exposure.	An additional 250 cycles-in-service (CIS) after the effective date of this AD.
(ii) 14,750 or more CSN and has been FPI at an earlier piece-part exposure.	An additional 500 CIS after the effective date of this AD.
(iii) 14,500 or more CSN but fewer than 14,750 CSN.	An additional 500 CIS after the effective date of this AD.

(iv) 14,250 or more CSN but fewer than 14,500 CSN.	An additional 750 CIS after the effective date of this AD.
(v) 13,000 or more CSN but fewer than 14,250 CSN.	An additional 1,000 CIS after the effective date of this AD.
(vi) 2,500 or more CSN but fewer than 13,000 CSN.	An additional 4,000 CIS after the effective date of this AD, or 14,000 CSN, whichever comes first.
(vii) Fewer than 2,500 cycles-since-new (CSN).	6,500 CSN.

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(g) Before installation in an airplane:

(1) Visually inspect and ECI applicable stage 5 LPT disks and applicable stage 6 LPT disks installed in replacement engines or replacement LPT modules using paragraphs 3.C.(1) through 3.E.(6) of GE ASB No. CF34-AL S/B 72-A0173, Revision 3, dated July 20, 2004, if the inspections can be completed within 9 calendar months after the effective date of this AD; or

(2) If the inspections specified in paragraph (g)(1) of this AD cannot be completed within 9 calendar months after the effective date of this AD, replace applicable stage 5 LPT disks and applicable stage 6 LPT disks installed in replacement engines or replacement LPT modules with a serviceable disk.

**Repetitive Inspections**

(h) For stage 5 LPT disks and stage 6 LPT disks initially inspected as specified in paragraph (f)(1) or (g)(1) of this AD, perform repetitive visual inspections and ECIs within every 3,100 cycles-since-last-inspection, using paragraphs 3.C.(1) through 3.E.(6) of GE ASB No. CF34-AL S/B 72-A0173, Revision 3, dated July 20, 2004, until the life limit of the part is reached.

### **Disks That Pass Inspection**

(i) If a disk passes inspection, it must be reinstalled into the same LPT module it was removed from.

### **Optional Terminating Action**

(j) Replacement of an applicable stage 5 LPT disk or applicable stage 6 LPT disk with a disk not listed in Figure 3 of GE ASB No. CF34-AL S/B 72-A0173, Revision 3, dated July 20, 2004, is terminating action to the inspections required by this AD for that disk.

### **Definitions**

(k) For the purposes of this AD, a serviceable disk is defined as a disk that has a SN not listed in Figure 3 of GE ASB No. CF34-AL S/B 72-A0173, Revision 3, dated July 20, 2004.

(l) For the purposes of this AD, the definition of piece-part exposure for the stage 5 LPT disk is when the disk is separated from the forward and aft bolted joints.

(m) For the purpose of this AD, the definition of piece-part exposure for the stage 6 LPT disk is when the disk is separated from the forward bolted joint.

(n) For the purposes of this AD, the definition of a replacement engine or replacement LPT module is an engine or LPT module that is not installed on an operational airplane on the effective date of this AD.

### **Alternative Methods of Compliance**

(o) 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.

### **Material Incorporated by Reference**

(p) You must use GE ASB No. CF34-AL S/B 72-A0173, Revision 3, dated July 20, 2004, to perform the visual inspections, ECIs, and disk replacements required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You can get a copy from GE Aircraft Engines, 1000 Western Avenue, Lynn, MA 01910; Attention: CF34 Product Support Engineering, Mail Zone: 34017; telephone (781) 594-6323; fax (781) 594-0600, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

### **Related Information**

(q) GE Alert Service Bulletin No. CF34-AL S/B 72-A0178 pertains to the subject of this AD.

Issued in Burlington, Massachusetts, on July 20, 2004.



Francis A. Favara,  
Acting Manager, Engine and Propeller Directorate,  
Aircraft Certification Service.