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[Page 4326-4328]  
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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. 2001-NE-45-AD; Amendment 39-12595; AD 2002-01-04]**

**RIN 2120-AA64**

**Airworthiness Directives; General Electric Company CF6-80E1 Model Turbofan Engines**

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

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

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD) that is applicable to General Electric Company CF6-80E1 model turbofan engines. This action requires flex borescope inspections of high pressure turbine (HPT) stage two (S2) nozzle guide vanes (NGV) installed in CF6-80E1 model turbofan engines. This amendment is prompted by an uncontained engine failure attributed to HPT S2 NGV distress. The actions specified in this AD are intended to prevent blade failure from HPT S2 NGV distress, which could result in an uncontained engine failure.

**DATES:** Effective February 14, 2002. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of February 14, 2002.

Comments for inclusion in the Rules Docket must be received on or before April 1, 2002.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2001-NE-45-AD, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may be inspected at this location, by appointment, between 8:00 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. Comments may also be sent via the Internet using the following address: "[9-ane-adcomment@faa.gov](mailto:9-ane-adcomment@faa.gov)". Comments sent via the Internet must contain the docket number in the subject line.

The service information referenced in this AD may be obtained from General Electric Company via Lockheed Martin Technology Services, 10525 Chester Road, Suite C, Cincinnati, Ohio 45215, telephone (513) 672-8400, fax (513) 672-8422. This information 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; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Karen Curtis, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone: (781) 238-7192; fax: (781) 238-7199.

**SUPPLEMENTARY INFORMATION:** On July 25, 2001, an uncontained engine failure (engine case only) and in flight shutdown (IFSD) occurred on a CF6-80E1 engine installed in an Airbus A330 airplane. There was no nacelle penetration or aircraft damage as a result of this event. However, similar events have occurred on other CF6 engine models with similar design HPT S2 NGV's that have resulted in nacelle penetration and minor airplane damage. HPT NGV's modified per GE Aircraft Engines (GE) Service Bulletin (SB) 72-0164, part numbers (P/N's) 1647M84G09/G10, are more susceptible to airfoil outer fillet cracking. This cracking can propagate to a condition where the nozzle segment sags backward and contacts the HPT Stage 2 blade row. This contact can progress to notching of the blade airfoil at the root and lead to blade failure. The actions specified in this AD are intended to prevent blade failure from HPT S2 NGV distress, which could result in an uncontained engine failure.

### **Manufacturer's Service Information**

The FAA has reviewed and approved the technical contents of GE SB CF6-80E1 S/B 72-0217, dated October 25, 2001, and S/B 72-0217, Revision 1, dated January 14, 2002 that describe procedures for initial and repetitive flex borescope inspection of HPT S2 NGV P/N's 1647M84G09/G10.

### **FAA's Determination of an Unsafe Condition and Required Actions**

Although none of these affected engine models are used on any airplanes that are registered in the United States, the possibility exists that the engine models could be used on airplanes that are registered in the United States in the future. This AD is being issued to prevent blade failure from HPT S2 NGV distress, which could result in an uncontained engine failure. This AD requires flex borescope inspections of HPT S2 NGV's installed in CF6-80E1 model turbofan engines. The actions are required to be done in accordance with the service bulletin described previously.

### **Immediate Adoption of This AD**

Since there are currently no domestic operators of this engine model, notice and opportunity for prior public comment are unnecessary. Therefore, a situation exists that allows the immediate adoption of this regulation.

### **Comments Invited**

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified under the caption ADDRESSES. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this action must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2001-NE-45-AD." The postcard will be date stamped and returned to the commenter.

## 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, Incorporation by reference, 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 adding the following new airworthiness directive:

# 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).

**2002-01-04 General Electric Company:** Amendment 39-12595. Docket No. 2001-NE-45-AD.

## *Applicability*

This airworthiness directive (AD) is applicable to General Electric Company CF6-80E1 engine models with high pressure turbine (HPT) stage 2 (S2) nozzle guide vane (NGV) part numbers (P/N's) 1647M84G09 or 1647M84G10. These engines are installed on, but not limited to, Airbus A330 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 (f) 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 blade failure from HPT S2 NGV distress, which could result in an uncontained engine failure, do the following.

## **Previously Flex Borescope Inspected NGV's**

(a) For NGV P/N's 1647M84G09 or 1647M84G10 that have been flex borescope inspected before the effective date of this AD, re-inspect the NGV's in accordance with Conditions and Re-inspection intervals listed in the "Inspection Table for Cracking in the Airfoil Outer Fillet," Figure 5, of GE Aircraft Engines (GE) Service Bulletin (SB) CF6-80E1 S/B 72-0217, dated October 25, 2001 or S/B 72-0217, Revision 1, dated January 14, 2002, or within 250 cycles-in-service-since-last inspection (CSLI), whichever is earlier.

## **NGV's Not Previously Inspected**

(b) For NGV's P/N's 1647M84G09 or 1647M84G10 not previously flex borescope inspected, inspect in accordance with the Accomplishment Instructions of GE SB CF6-80E1 S/B 72-0217, Revision 1, dated January 14, 2002, as follows:

(1) For NGV's with 1,200 or more cycles-since-overhaul (CSO) on the effective date of this AD, flex borescope inspect within 50 cycles-in-service (CIS) after the effective date of this AD.

(2) For NGV's with 1,200 or fewer CSO on the effective date of this AD, flex borescope inspect at the first regular HPT blade inspection after 1,200 CSO, but before reaching 1,250 CSO.

## Reinspection

(c) Re-inspect or remove from service NGV's in accordance with the Conditions and Re-inspection intervals listed in the "Inspection Table for Cracking in the Airfoil Outer Fillet," Figure 5, of GE SB CF6-80E1 S/B 72-0217, Revision 1, dated January 14, 2002.

## Cycles-Since-Overhaul Defined

(d) For the purposes of this proposed AD, cycles-since-overhaul (CSO) is defined as cycles since repair as described in GE SB CF6-80E1 S/B 72-0164, dated March 16, 1999.

## Engines Not Affected by this AD

(e) Engines configured with HPT S2 NGV P/N's 1647M84G05 or 1647M84G06, or 2080M47G01 or 2080M47G02 are not affected by this AD.

## Alternative Methods of Compliance

(f) 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, Engine Certification Office (ECO). Operators must submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, ECO.

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

## Special Flight Permits

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

## Documents That Have Been Incorporated by Reference

(h) The inspection must be done in accordance with GE Aircraft Engines Service Bulletin CF6-80E1 S/B 72-0217, dated October 25, 2001 or S/B 72-0217, Revision 1, dated January 14, 2002. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from General Electric Company via Lockheed Martin Technology Services, 10525 Chester Road, Suite C, Cincinnati, Ohio 45215, telephone (513) 672-8400, fax (513) 672-8422. Copies may be inspected, by appointment, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

## Effective Date

(i) This amendment becomes effective on February 14, 2002.

Issued in Burlington, Massachusetts, on January 15, 2002.

**Thomas A. Boudreau,**

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

[FR Doc. 02-1692 Filed 1-29-02; 8:45 am]

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