[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [65 FR 50623 8/21/2000]

[Docket No. 2000-NE-31-AD; Amendment 39-11868; AD 2000-16-12]

RIN 2120-AA64

Airworthiness Directives; General Electric Company CF6-45, -50, -80A, -80C2, and –80E1 Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to General Electric Company (GE) CF6-45, -50, -80A, -80C2, and -80E1 turbofan engines with certain high pressure compressor rotor (HPCR) stage 3-9 spools installed. This action requires initial ultrasonic and eddy current inspections of certain HPCR stage 3-9 spools for cracks. This amendment is prompted by an uncontained failure of an HPCR 3-9 spool. The actions specified in this AD are intended to detect cracks which can cause separation of the HPCR stage 3-9 spool and result in an uncontained engine failure.

DATES: Effective September 5, 2000. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of September 5, 2000.

Comments for inclusion in the Rules Docket must be received on or before October 20, 2000.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2000-NE-31-AD, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may also be sent via the Internet using the following address: "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 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.

FOR FURTHER INFORMATION CONTACT: Chris Gavriel, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone: (781) 238-7147, fax: (781) 238-7199.

SUPPLEMENTARY INFORMATION: On June 7, 2000, a Boeing 767 experienced an uncontained engine failure of a CF6-80C2 engine during takeoff. That failure resulted in a rejected takeoff. Results of an investigation indicate that the failure was due to a crack that was located in the web of the 7th stage of the spool. The FAA has issued airworthiness directive (AD) 99-24-15 (64 FR 66554; November 29, 1999) that was effective on January 28, 2000, that requires an inspection program that includes an initial inspection of bores and webs of certain CF6 HPCR 3-9 spools at the next piece-part exposure after 1000 cycles-since-new (CSN). Since that AD was issued, additional data suggests that the compliance time for the initial inspection is not adequate. This AD will decrease the compliance times for the initial inspection for those spools. This AD does not reduce the initial inspection time for HPCR 3-9 spools part numbers 1333M66G10, 1782M22G04, 1854M95P08, 9136M89G28, and 9136M89G29 because of differences in manufacturing processes. The repetitive inspection schedule required by AD 99-24-15 remains in place for all HPCR 3-9 spools affected by that AD. These cracks, if not detected, could result in HPCR stage 3-9 spool separation, which can result in an uncontained engine failure and airplane damage.

Manufacturer's Service Information

The FAA has reviewed and approved the technical contents of the following GE Alert Service Bulletins (ASB's):

- ASB CF6-50 72-A1108, Revision 3, dated November 12, 1999
- ASB CF6-80A 72-A0678, Revision 3, dated November 12, 1999
- ASB CF6-80C2 72-A0812, Revision 2, dated October 28, 1999
- ASB CF6-80C2 72-A0848, Revision 5, dated August 3, 2000
- ASB CF6-80E1 72-A0135, Revision 1, dated October 28, 1999
- ASB CF6-80E1 72-A0126, Revision 3, dated August 3, 2000

Those ASB's describe procedures for eddy current and ultrasonic inspections of HPCR stage 3-9 spools for cracks.

Determination of an Unsafe Condition

Since an unsafe condition has been identified that is likely to exist or develop on other engines of the same type design, this AD is being issued to detect cracks which can cause separation of the HPCR stage 3-9 spool and result in an uncontained engine failure. This AD requires an initial inspection of spools with 10,500 or more CSN, within 500 cycles-in-service (CIS) after the effective date of this AD, by the next engine shop visit, or by May, 31, 2001, whichever occurs first. This AD also requires an initial inspection of spools with 7,000 CSN to 10,499 CSN within 1,000 CIS after the effective date of this AD, by the next shop visit, or by July 29, 2001, whichever occurs first. These initial inspections qualify the HPCR 3-9 spool as having been previously inspected when determining the repetitive inspection schedules under AD 99-24-15. The actions are required to be accomplished in accordance with the alert service bulletins described previously.

Immediate Adoption

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

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 notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2000-NE-31-AD." The postcard will be date stamped and returned to the commenter.

Regulatory Impact

This proposed rule does not have federalism implications, as defined in Executive Order No. 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 proposed rule.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979).

If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from 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.

§39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation Administration

AD's are posted on the internet at http://av-info.faa.gov

2000-16-12 General Electric Company: Amendment39-11868. Docket 2000-NE-31-AD.

Applicability

This airworthiness directive is applicable to General Electric Company (GE) CF6-45, -50, -80A, -80C2, and -80E1 turbofan engines with high pressure compressor rotor stage 3-9 spools with the following part numbers (P/N's). These engines are installed on, but not limited to, Airbus A300, A310, and A330 series, Boeing 747 and 767 series, and McDonnell Douglas DC-10 and MD-11 series airplanes.

Engine Model	HPCR 3-9 Spool P/N			
CF6-45/50 Series Engines	9136M89G02, 9136M89G08, 9136M89G19, 9273M14G01,	9136M89G03, 9136M89G09, 9136M89G21, 9331M29G01,	9136M89G06, 9136M89G17, 9136M89G22, 9253M85G01,	9136M89G07 9136M89G18, 9136M89G27, 9253M85G02
CF6-80A Series Engines	9136M89G10, 9136M89G22,	9136M89G11, 9136M89G27	9136M89G20,	9136M89G21,
CF6-80C2 Series Engines	1333M66G01, 1781M52P01, 1854M95P03, 1854M95P07,	1333M66G03, 1781M53G01, 1854M95P04, 9380M28P05	1333M66G07, 1854M95P01, 1854M95P05,	1333M66G09, 1854M95P02, 1854M95P06,
CF6-80E1 Series Engines	1669M22G01,	1669M22G03,	1782M22G01,	1782M22G02

Note 1: This airworthiness directive (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 (j) 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 below, unless already done.

To detect cracks which can cause separation of the HPCR stage 3-9 spool and result in an uncontained engine failure, perform the following inspections:

CF6-45/50 Series Engines

(a) For HPCR stages 3-9 spools installed in CF6-45/50 series engines that have not been inspected in accordance with AD 99-24-15, do the following:

Number of Cycles-Since-New (CSN)	Action	By the earliest of
(1) More than 7,000 CSN but fewer than 10,500 CSN after the effective date of this AD.	Eddy current and ultrasonic inspect bores for cracks in accordance with ASB 72-A1108, Revision 3, dated November 12, 1999.	(i) Within the next 1,000 cycles-in-service (CIS) after the effective date of this AD, OR (ii) At the next engine shop visit (ESV) after the effective date of the AD, OR (iii) Before July 29, 2001.
(2) 10,500 or more CSN, after the effective date of this AD, on HPCR 3-9 spools P/N 9136M89G02, 9136M89G03, 9136M89G06, 9136M89G07, 9136M89G08, 9136M89G09, 9136M89G17, 9136M89G18, 9273M14G01, 9331M29G01, 9253M85G01, 9253M85G02.	Eddy current and ultrasonic inspect bores for cracks in accordance with ASB 72-A1108, Revision 3, dated November 12, 1999.	(i) Within the next 500 CIS after the effective date of this AD, OR (ii) At the next ESV after the effective date of the AD, OR (iii) Before May 31, 2001.
(3) 10,500 or more CSN, after the effective date of this AD, on HPCR 3-9 spools P/N 9136M89G19, 9136M89G21, 9136M89G22, 9136M89G27	Replace with a serviceable HPCR 3-9 spool.	(i) Within the next 500 CIS after the effective date of this AD, OR (ii) At the next ESV after the effective date of the AD, OR (iii) Before May 31, 2001.

(b) Remove any HPCR 3-9 spool from service that equals or exceeds the reject criteria established by ASB 72-A1108, Revision 3, dated November 12, 1999; and replace it with a serviceable spool before further flight.

CF6-80A Series Engines

(c) For HPCR stages 3-9 spools installed in CF6-80A series engines that have not been inspected in accordance with AD 99-24-15, do the following:

Number of Cycles-Since-New (CSN)	Action	By the earliest of
(1) More than 7,000 CSN but fewer than 10,500 CSN, after the effective date of this AD.	Eddy current and ultrasonic inspect bores for cracks in accordance with ASB 72-A0678, Revision 3, dated November 12, 1999.	(i) Within the next 1,000 CIS after the effective date of this AD, OR (ii) At the next ESV after the effective date of the AD, OR (iii) Before July 29, 2001.
(2) 10,500 or more CSN, after the effective date of this AD, on HPCR 3-9 spools P/N 9136M89G10, 9136M89G11.	Eddy current and ultrasonic inspect bores for cracks in accordance with ASB 72-A0678, Revision 3, dated November 12, 1999.	(i) Within the next 500 CIS after the effective date of this AD, OR (ii) At the next ESV after the effective date of the AD, OR (iii) Before May 31, 2001.

Number of Cycles-Since-New (CSN)	Action	By the earliest of
(3) 10,500 or more CSN, after the effective date of this AD, on HPCR 3-9 spools P/N 9136M89G20, 9136M89G21, 9136M89G22, 9136M89G27	Replace with a serviceable HPCR 3-9 spool.	(i) Within the next 500 CIS after the effective date of this AD, OR (ii) At the next ESV after the effective date of the AD, OR (iii) Before May 31, 2001.

(d) Remove any HPCR 3-9 spool from service that equals or exceeds the reject criteria established by ASB 72-A0678, Revision 3, dated November 12, 1999, and replace it with a serviceable spool before further flight.

CF6-80C2 Series Engines

(e) For HPCR stages 3-9 spools installed in CF6-80C2 series engines that have not been inspected in accordance with both ASB 72-A0812, Revision 2, dated October 28, 1999; and ASB 72-A0848, Revision 5, dated August 3, 2000; or AD 99-24-15, do the following:

Number of Cycles-Since-New (CSN)	Action	By the earliest of
(1) More than 7,000 CSN but fewer than 10,500 CSN, after the effective date of this AD.	Eddy current and ultrasonic inspect the bores and webs for cracks in accordance with ASB 72-A0812, Revision 2, dated October 28, 1999; and ASB 72-A0848, Revision 5, dated August 3, 2000.	(i) Within the next 1,000 CIS after the effective date of this AD, OR (ii) At the next ESV after the effective date of the AD, OR (iii) Before July 29, 2001.
(2) 10,500 or more CSN, after the effective date of this AD.	Replace with a serviceable HPCR 3-9 spool.	(i) Within the next 500 CIS after the effective date of this AD, OR (ii) At the next ESV after the effective date of the AD, OR (iii) Before May 31, 2001.

(f) Remove any HPCR 3-9 spool from service that equals or exceeds the reject criteria established by ASB 72-A0812, Revision 2, dated October 28, 1999; and ASB 72-A0848, Revision 5, dated August 3, 2000, and replace it with a serviceable spool before further flight.

CF6-80E1 Series Engines

(g) For HPCR stages 3-9 spools installed in CF6-80E1 series engines that have not been inspected in accordance with both ASB 72-A0135, Revision 1, dated October 28, 1999; and ASB 72-A0126, Revision 3, dated August 3, 2000; or AD 99-24-15, do the following:

Number of Cycles-Since-New (CSN)	Action	By the earliest of
(1) More than 7,000 CSN but fewer than 10,500 CSN, after the effective date of this AD.	Eddy current and ultrasonic inspect the bores and webs for cracks in accordance with ASB 72-A0126, Revision 3, dated August 3, 2000, and ASB 72-A0135, Revision 1, dated October 28, 1999.	(i) Within the next 1,000 CIS after the effective date of this AD, OR (ii) At the next ESV after the effective date of the AD, OR (iii) Before July 29, 2001.

Number of Cycles-Since-New (CSN)	Action	By the earliest of
(2) 10,500 or more CSN after the effective date of this AD.	Replace with a serviceable HPCR 3-9 spool.	(i) Within the next 500 CIS after the effective date of this AD, OR (ii) At the next ESV after the effective date of the AD, OR (iii) Before May 31, 2001.

(h) Remove any HPCR 3-9 spool from service before further flight that equals or exceeds the reject criteria established by ASB 72-A0135, revision 1, dated October 28, 1999; or ASB 72-A0126, revision 3, dated August 3, 2000, and replace it with a serviceable spool.

Definitions

(i) For the purpose of this AD, an ESV is defined as any time an engine is introduced into a shop for the separation of a major engine flange.

Alternative Methods of Compliance

(j) 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 shall 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 ECO.

Special Flight Permits

(k) Special flight permits may be issued in accordance with §§ 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 accomplished.

(l) The inspection shall be done in accordance with the following GE Alert Service Bulletins:

Document No.	Pages	Revision	Date
GE CF6-50 ASB No. 72-A1108	1-15	3	November 12, 1999
Total pages: 15			
GE CF6-80A ASB No. 72-A0678	1-18	3	November 12, 1999
Total pages: 18			
GE CF6-80C2 ASB No. 72-A0812	1-13	2	October 28, 1999
Total pages: 13			
GE CF6-80C2 ASB No. 72-A0848	1-47	5	August 3, 2000
Total pages: 47			
GE CF6-80E1 ASB No. 72-A0126	1-47	3	August 3, 2000
Total pages: 47			
GE CF6-80E1 ASB No. 72-A0135	1-11	1	October 28, 1999
Total pages: 11			

The incorporations by reference of ASB's No. CF6-50 72-A1108, Revision 3; CF6-80A 72-A0678, Revision 3; CF6-80C2 72-A0812, Revision 2; and CF6-80E1 72-A0135, Revision 1, were approved by the Director of the Federal Register on January 28, 2000 (64 FR 66554; November 29, 1999). The incorporations by reference of ASB's CF6-80C2 72-A0848, Revision 5; and CF6-80E1 72-A0126, Revision 3 were approved by the Director of the Federal Register on September 5, 2000 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 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.

(m) This amendment becomes effective on September 5, 2000.

FOR FURTHER INFORMATION CONTACT: Chris Gavriel, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone: (781) 238-7147, fax: (781) 238-7199.

Issued in Burlington, Massachusetts, on August 10, 2000.
David A. Downey, Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.