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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2003-NE-67-AD; Amendment 39-13914; AD 2004-26-02]

RIN 2120-AA64

Airworthiness Directives; GE Aircraft Engines (GE) CF34-3A, CF34-3A2, CF34-1A, CF34-3A1, CF34-3B, and CF34-3B1 Series Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for GE CF34-3A, CF34-3A2, CF34-1A, CF34-3A1, CF34-3B, and CF34-3B1 series turbofan engines. This AD requires removal from service of certain high pressure compressor (HPC) forward spools, at the first piece-part level exposure after 6,000 cycles since new (CSN); but not later than 20,000 CSN for CF34-3B engines, and not later than 22,000 CSN for CF34-3A, CF34-3A2, CF34-1A, CF34-3A1, and CF34-3B1 engines. This AD results from an updated low-cycle fatigue (LCF) analysis performed on certain HPC forward spools. We are issuing this AD to prevent LCF cracks and failure of the HPC forward spool, which could result in an uncontained engine failure and damage to the airplane.

DATES: This AD becomes effective January 26, 2005.

ADDRESSES: You may examine the AD docket at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

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

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with a proposed AD. The proposed AD applies to GE CF34-3A, CF34-3A2, CF34-1A, CF34-3A1, CF34-3B, and CF34-3B1 series turbofan engines. We published the proposed AD in the Federal Register on May 18, 2004 (69 FR 28093). That action proposed to require removal from service of certain HPC forward spools, at the first piece-part level exposure after 6,000 CSN, but not later than 20,000 CSN for CF34-3B engines and not later than 22,000 CSN for CF34-3A, CF34-3A2, CF34-1A, CF34-3A1,

and CF34-3B1 engines. That action results from GE updating the LCF analysis for these HPC forward spools.

Examining the AD Docket

You may examine the AD Docket (including any comments and service information), by appointment, between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. See ADDRESSES for the location.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the one comment received.

Request for Definition Clarification of Serviceable HPC Forward Spool

One commenter requests that we clarify the definition of a serviceable HPC forward spool. The commenter states that a clarification would ensure that operators are not led to believe that HPC forward spools installed in their engines are not serviceable based on the AD's definition of a serviceable HPC forward spool.

We partially agree. As written in the proposal, the compliance requires replacing certain HPC forward spools with a serviceable HPC forward spool at next piece-part level exposure, and then defines what a serviceable HPC forward spool is and what it is not. We agree that this definition could cause confusion. We do not agree that a clarification to the existing definition is the best approach to ensure that the AD is understandable. For clarification, we have rewritten the compliance in the final rule to require operators to remove certain specific spools from service. We have also added a paragraph in the final rule to clarify that after the effective date of this AD, do not install any HPC forward spool, P/N 6078T56P03. We have also clarified the requirement that after the effective date of this AD, do not install any HPC forward spool, P/N 6078T56P04, with more than 0 CSN. We have also deleted from the final rule the definition which described serviceable spools.

Conclusion

We have carefully reviewed the available data, including the comment received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

There are about 2,681 GE CF34-3A, CF34-3A2, CF34-1A, CF34-3B and CF34-3B1 series turbofan engines of the affected design in the worldwide fleet. We estimate that 1,826 engines installed on airplanes of U.S. registry would be affected by this AD. We also estimate that 59% of the replacements will not be done at piece-part exposure, and will require approximately 650 work hours per engine to perform the actions, and that the average labor rate is $65 per work hour. Required parts will cost about $16,000 per engine (a prorated cost of the unused spool life to the original life). Based on these figures, we estimate the total cost of the AD to U.S. operators to be $74,420,000.

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

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 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); 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 by sending a request to us at the address listed under ADDRESSES. Include "AD Docket No. 2003-NE-67-AD" in your request.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration 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):

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.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).

2004-26-02 GE Aircraft Engines (GE): Amendment 39-13914. Docket No. 2003-NE-67-AD.

Effective Date

(a) This AD becomes effective January 26, 2005.

Affected ADs

(b) None.

Applicability

(c) This AD applies to GE CF34-3A, CF34-3A2, CF34-1A, CF34-3A1, CF34-3B, and CF34-3B1 series turbofan engines with high pressure compressor (HPC) forward spool, part number (P/N) 6078T56P03 or 6078T56P04, installed. These engines are installed on, but not limited to, Bombardier series Business Jet Model CL-600-2A12 (CL-601), Bombardier series Business Jet Model CL-600-2B16 (CL-601-3A, CL-601-3R, and CL-604), and Bombardier series Regional Jet Model CL-600-2B19 (Regional Jet Series 100 and 440) airplanes.

Unsafe Condition

(d) This AD results from an updated low-cycle fatigue (LCF) analysis performed on HPC forward spools, P/Ns 6078T56P03 and 6078T56P04, by GE. We are issuing this AD to prevent LCF cracks and failure of the HPC forward spool, which could result in an uncontained engine failure and damage to the airplane.

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.

HPC Spool Replacement

(f) For CF34-3B engines, remove from service HPC forward spools, P/Ns 6078T56P03 and 6078T56P04 at the first piece-part exposure after 6,000 cycles-since-new (CSN), but no later than 20,000 CSN.

(g) For CF34-3A, CF34-3A2, CF34-1A, CF34-3A1, and CF34-3B1 engines, remove from service HPC forward spools, P/Ns 6078T56P03 and 6078T56P04 at the first piece-part exposure after 6,000 CSN, but no later than 22,000 CSN.

(h) After the effective date of this AD:
(1) Do not install any HPC forward spool, P/N 6078T56P03.
(2) Do not install any HPC forward spool, P/N 6078T56P04, with more than 0 CSN.

Definition

(i) For the purpose of this AD, the definition of piece-part exposure for the HPC forward spool is when the spool is completely disassembled.

Alternative Methods of Compliance

(j) 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

(k) None.

Related Information

(l) None.

Issued in Burlington, Massachusetts, on December 15, 2004.
Francis A. Favara,
Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.
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