

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 39**

[Docket No. 99-NE-49-AD; Amendment 39-11560; AD 2000-03-03]

RIN 2120-AA64

**Airworthiness Directives; General Electric Company CF34 Series Turbofan Engines**

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

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), that requires revisions to the Engine Maintenance Program specified in the manufacturer's Instructions for Continued Airworthiness (ICA) for General Electric Company (GE) CF34 series turbofan engines to include required enhanced inspection of selected critical life-limited parts at each piece-part exposure. This AD also requires that an air carrier's approved continuous airworthiness maintenance program incorporate these inspection procedures. This amendment is prompted by a Federal Aviation Administration (FAA) study of in-service events involving uncontained failures of critical rotating engine parts that indicated the need for improved inspections. The improved inspections are needed to identify those critical rotating parts with conditions, which if allowed to continue in service, could result in uncontained failures. The actions specified by this AD are intended to prevent critical life-limited rotating engine part failure, which could result in an uncontained engine failure and damage to the airplane.

**DATES:** Effective March 13, 2000.

**FOR FURTHER INFORMATION CONTACT:**

Kevin Donovan, Aerospace Engineer Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7743, fax (238) 238-7199.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to General Electric Company CF34 series turbofan engines was published in the **Federal Register** on October 7, 1999 (64 FR 54584). That action proposed to require, within the next 30 days after the effective date of this AD, revisions to the CF34 Engine Maintenance Program specified in the manufacturer's Instructions for

Continued Airworthiness (ICA), and, for air carriers, their approved continuous airworthiness maintenance program. General Electric Company, the manufacturer of CF34-3A1 and -3B1 series turbofan engines, has provided the FAA with a detailed proposal that identifies and prioritizes the critical rotating engine parts with the highest potential to hazard the airplane in the event of failure, along with instructions for enhanced, focused inspection methods. These enhanced inspections will be conducted at piece-part opportunity, as defined in this AD, rather than at specific inspection intervals.

**Comments Received**

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

*Change Name of Manual Section*

One commenter (the manufacturer) states that the proposal should reference the Airworthiness Limitations Section instead of the Time Limits Section. The FAA concurs in part. The reference to the Time Limits Section will be removed and changed to the CF34 Engine Maintenance Program in this final rule.

*Part Numbers (P/Ns)*

One commenter notes that in Table 804 of the proposal, the Stage 2 High Pressure Turbine (HPT) Rotor Disk, P/N 5079T53 is incorrect. The correct P/N is 5079T73. The FAA concurs. To make this AD consistent with other enhanced inspection ADs, and in response to comments received on the other ADs, the P/Ns have been removed from Table 804 and the word "all" has been substituted for P/Ns.

*Concurs With Proposal*

One commenter concurs with the rule as proposed.

**Conclusion**

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes described previously. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

*Economic Analysis*

The FAA estimates that 352 engines installed on aircraft of US registry will be affected by this AD, that it will take

approximately 2 work hours per engine to accomplish the required actions, and that the average labor rate is \$60 per work hour. The total cost of the new inspections per engine will be approximately \$120 per year. Using average shop visit rates, 275 engines are expected to be affected per year. The annual cost impact of the AD on US operators is therefore estimated to be \$33,000.

*Regulatory Impact*

The regulations adopted herein 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. Therefore, it is determined that this final rule does not have federalism implications under Executive Order (EO) 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under EO 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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it 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, 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:

**2000-03-03 General Electric Company:**  
Amendment 39-11560. Docket 99-NE-49-AD.

*Applicability:* General Electric Company (GE) CF34-3A1 and -3B1 series turbofan

engines, installed on but not limited to Bombardier Canadair CL601R (R) aircraft.

**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 (c) 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:** Required as indicated, unless accomplished previously.

To prevent critical life-limited rotating engine part failure, which could result in an

uncontained engine failure and damage to the airplane, accomplish the following:

#### Inspections

(a) Within the next 30 days after the effective date of this AD, revise the CF34 Engine Maintenance Program, Chapter 5–21–00, of the GE CF34 Series Turbofan Engine Manual, SEI–756, and for air carrier operations revise the approved continuous airworthiness maintenance program, by adding the following:

“9. CF34–3A1 and CF34–3B1 Engine Maintenance Program—Shop Level Mandatory Inspection Requirements.

A. This procedure is used to identify specific piece-parts that require mandatory inspections that must be accomplished at each piece-part exposure using the applicable Chapters referenced in Table 804 for the inspection requirements.

B. Piece-part exposure is defined as follows:

(1) For engines that utilize the “On Condition” maintenance requirements:

The part is considered completely disassembled when done in accordance with the disassembly instructions in the GEAE engine authorized overhaul Engine Manual, and the part has accumulated more than 100 cycles-in-service since the last piece-part opportunity inspection, provided that the part was not damaged or related to the cause for its removal from the engine.

(2) For engines that utilize the “Hard Time” maintenance requirements: The part is considered completely disassembled when done in accordance with the disassembly instructions used in the “Minor Maintenance” or “Overhaul” instructions in the GEAE engine authorized Engine Manual, and the part has accumulated more than 100 cycles in service since the last piece-part opportunity inspection, provided that the part was not damaged or related to the cause for its removal from the engine.

C. Refer to Table 804 below for the mandatory inspection requirements.

TABLE 804.—MANDATORY INSPECTION REQUIREMENTS

Part nomenclature	Manual chapter/section/subject	Mandatory inspection
Fan Disk (all) .....	72–21–00, Inspection .....	All areas (FPI) <sup>1</sup> Bores (ECI) <sup>2</sup>
Stage 1 high pressure turbine (HPT) Rotor Disk (all) .....	72–46–00, Inspection .....	All areas (FPI) <sup>1</sup> Bores (ECI) <sup>2</sup> Boltholes (ECI) <sup>2</sup> Air Holes (ECI) <sup>2</sup>
Stage 2 HPT Rotor Disk (all) .....	72–46–00, Inspection .....	All areas (FPI) <sup>1</sup> Bores (ECI) <sup>2</sup> Boltholes (ECI) <sup>2</sup> Air Holes (ECI) <sup>2</sup>
HPT Rotor Outer Torque Coupling (all) .....	72–46–00, Inspection .....	All areas (FPI) <sup>1</sup> Bore (ECI) <sup>1</sup>

<sup>1</sup> FPI = Fluorescent Penetrant Inspection Method.

<sup>2</sup> ECI = Eddy Current Inspection.

(b) Except as provided in paragraph (c) of this AD, and notwithstanding contrary provisions in section 43.16 of the Federal Aviation Regulations (14 CFR 43.16), these mandatory inspections shall be performed only in accordance with the CF34 Engine Maintenance Program, Chapter 5–21–00, of the General Electric Company, CF34 Series Turbofan Engine Manual, SEI–756.

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

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

(d) Special flight permits may be issued in accordance with sections 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 accomplished.

(e) FAA-certificated air carriers that have an approved continuous airworthiness maintenance program in accordance with the record keeping requirement of § 121.369 (c) of the Federal Aviation Regulations [14 CFR 121.369 (c)] must maintain records of the mandatory inspections that result from revising the CF34 Engine Maintenance Program and the air carrier's continuous airworthiness program. Alternately, certificated air carriers may establish an approved system of record retention that provides a method for preservation and retrieval of the maintenance records that include the inspections resulting from this AD, and include the policy and procedures for implementing this alternate method in the air carrier's maintenance manual required by § 121.369(c) of the Federal Aviation Regulations [14 CFR 121.369 (c)]; however, the alternate system must be accepted by the appropriate PMI and require the maintenance records be maintained either indefinitely or until the work is repeated. Records of the piece-part inspections are not required under § 121.380(a)(2)(vi) of the Federal Aviation Regulations [14 CFR 121.380(a)(2)(vi)]. All other operators must maintain the records of mandatory inspections required by the

applicable regulations governing their operations.

**Note 3:** The requirements of this AD have been met when the engine manual changes are made and air carriers have modified their continuous airworthiness maintenance plans to reflect the Engine Maintenance Program requirements specified in the GE CF34 Series Turbofan Engine Manual.

(f) This amendment becomes effective on March 13, 2000.

Issued in Burlington, Massachusetts, on February 1, 2000.

**David A. Downey,**

*Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.*  
[FR Doc. 00–2687 Filed 2–4–00; 8:45 am]

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