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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-1885; Project Identifier AD-2023-00995-E; Amendment 39-23081; AD 2025-14-03]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Engines

AGENCY:

Federal Aviation Administration (FAA), DOT.

ACTION:

Final rule.

SUMMARY:

The FAA is adopting a new airworthiness directive (AD) for certain General Electric Company (GE) Model CF34-10E2A1, CF34-10E6, CF34-10E6A1, CF34-10E7, CF34-10E7-B, CF34-10E5, and CF34-10E5A1 engines. This AD was prompted by a report of cracks found in the high-pressure turbine (HPT) front rotating air seal. This AD requires performing repetitive fluorescent penetrant inspections (FPIs) to detect indications or linear indications (any indication which is four times longer than the width of that same indication) in the HPT front rotating air seal and, if necessary, replacing the HPT front rotating air seal or HPT rotor disk with parts eligible for installation as applicable. This AD also includes an optional terminating action to the repetitive FPIs. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective August 25, 2025.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 25, 2025.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA-2024-1885; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

- For GE material identified in this AD, contact GE, 1 Neumann Way, Cincinnati, OH 45215; phone: (513) 552-3272; email: aviation.fleetsupport@ge.com; website: ge.com.
- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at *regulations.gov* under Docket No. FAA-2024-1885.

FOR FURTHER INFORMATION CONTACT:

Alexei Marqueen, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7178; email: alexei.t.marqueen@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a supplemental notice of proposed rulemaking (SNPRM) to amend [14 CFR part 39](#) by adding an AD that would apply to certain GE Model CF34-10E2A1, CF34-10E6, CF34-10E6A1, CF34-10E7, CF34-10E7-B, CF34-10E5, and CF34-10E5A1 engines. The SNPRM was published in the **Federal Register** on April 25, 2025 ([90 FR 17345](#)). The SNPRM was prompted by a report of indications found in certain HPT front rotating air seals at the rabbet surface where the affected part interacts with the HPT rotor disk tabs. The manufacturer investigated and determined that the indications were caused by high edge contact stress at the interface between the HPT rotor disk and the rabbet surface of the HPT front rotating air seal. The SNPRM proposed to require repetitive FPIs to detect indications or linear indications (any indication that is four times longer than the width of that same indication) in the HPT front rotating air seal and, if necessary, replacement of the HPT front rotating air seal or HPT rotor disk with parts eligible for installation. Additionally, replacing the HPT front rotating air seal with an updated design part constitutes as a terminating action for the proposed AD. The FAA has also determined that changes to the applicability are necessary, primarily based on comments received on the notice of proposed rulemaking (NPRM) ([89 FR 59860](#); July 24, 2024) from several commenters and additional review by the FAA. The FAA is issuing this AD to address the unsafe condition on these products.

Discussion of Final Airworthiness Directive

Comments

The FAA received a comment from one individual commenter. The commenter supported the SNPRM without change.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, this AD is adopted as proposed in the SNPRM. None of the changes will increase the economic burden on any operator.

Material Incorporated by Reference Under [1 CFR Part 51](#)

The FAA reviewed GE CF34-10E Service Bulletin 72-0341 Ro2, dated September 24, 2021 (GE SB 72-0341 Ro2). This material specifies procedures for repetitive FPIs and eddy current inspections of certain HPT front rotating air seals for indications or linear indications and, if necessary, replacement of the affected HPT front rotating air seals or the HPT rotor disk with parts eligible for installation. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Costs of Compliance

The FAA estimates that this AD, affects 228 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
FPI of the HPT front rotating air seal	8 work-hours × \$85 per hour = \$680	\$0	\$680	\$155,040

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the inspections. The agency has no way of determining the number of engines that might need these replacements:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replace HPT front rotating air seal	8 work-hours × \$85 per hour = \$680	\$332,000	\$332,680
Replace HPT rotor disk	8 work-hours × \$85 per hour = \$680	341,800	342,480

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.

The FAA is 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

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) Will not affect intrastate aviation in Alaska, 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.

List of Subjects in [14 CFR Part 39](#)

- Air transportation
- Aircraft
- Aviation safety
- Incorporation by reference
- Safety

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA 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:

2025-14-03 General Electric Company: Amendment 39-23081; Docket No. FAA-2024-

(a) Effective Date

This airworthiness directive (AD) is effective August 25, 2025.

(b) Affected ADs

None.

(c) Applicability

This AD applies to General Electric Company (GE) Model CF34-10E2A1, CF34-10E6, CF34-10E6A1, CF34-10E7, CF34-10E7-B, CF34-10E5, and CF34-10E5A1 engines with an installed high-pressure turbine (HPT) front rotating air seal having part number (P/N) 1865M49P04, 2448M30P02, or 2448M30P03.

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by a report of cracks found in the HPT front rotating air seal. The FAA is issuing this AD to detect indications and linear indications (any indication which is four times longer than the width of that same indication) of the HPT front rotating air seal. The FAA is issuing this AD to prevent failure of the HPT front rotating air seal or HPT rotor disk. The unsafe condition, if not addressed, could result in uncontained release of the HPT front rotating air seal or HPT rotor disk, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) At the next exposure of the HPT rotor assembly after the effective date of this AD and each exposure thereafter, perform a fluorescent penetrant inspection (FPI) of the HPT front rotating air seal for indications or linear indications in accordance with paragraphs 3.B.(1)(a) through (f), of GE CF34-10E Service Bulletin (SB) 72-0341 R02, dated September 24, 2021 (GE CF34-10E SB 72-0341 R02).

(2) If during any FPI required by paragraph (g)(1) of this AD, any indication greater than 0.015 in. (0.38mm) or any linear indication is found, before further flight, remove the HPT front rotating air seal from service and replace with a part eligible for installation, in accordance with paragraphs 3.B.(1)(g) and (h) of GE CF34-10E SB 72-0341 R02.

(3) If during any FPI required by paragraph (g)(1) of this AD, any indication is found that extends beyond the rabbet diameter M, as specified in paragraph 3.B.(1)(i), Figure 1, and Figure 4 (Sheet 2) of

GE CF34-10E SB 72-0341 R02, before further flight, remove the HPT rotor disk from service and replace with a part eligible for installation, in accordance with paragraph 3.B.(1)(i)2 of GE CF34-10E SB 72-0341 R02.

(h) Optional Terminating Action

Replacing the HPT front rotating air seal with an HPT front rotating air seal having P/N 2929M57P01 terminates the requirements of this AD.

(i) Definitions

For the purpose of this AD, the definitions in paragraphs (i)(1) through (3) of this AD apply:

(1) An “exposure of the HPT rotor assembly” is when the HPT rotor assembly is removed from the core module assembly.

(2) A “linear indication” is any indication whose length is at least four times greater than its width.

(3) A “part eligible for installation” is defined as the following, as applicable:

(i) An HPT front rotating air seal that is eligible for installation is an HPT front rotating air seal having P/N 1865M49P04, P/N 2448M30P02, or P/N 2448M30P03 that has passed the inspection required by paragraph (g)(1) of this AD, or an HPT front rotating air seal having P/N 2929M57P01.

(ii) An HPT rotor disk that is eligible for installation is an HPT rotor disk having P/N 1865M51P03 or P/N 1865M51P04 that has not been removed from service as a result of the actions required by paragraph (g)(3) of this AD.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, AIR-520 Continued Operational Safety Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in [14 CFR 39.19](#). In accordance with [14 CFR 39.19](#), send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the AIR-520 Continued Operational Safety Branch, send it to the attention of the person identified in paragraph (k) of this AD and email to: AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

For more information about this AD, contact Alexei Marqueen, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7178; email: alexei.t.marqueen@faa.gov.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the material listed in this paragraph under [5 U.S.C. 552\(a\)](#) and [1 CFR part 51](#).

(2) You must use this material as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) General Electric Company (GE) CF34-10E Service Bulletin 72-0341 R02, dated September 24, 2021.

(ii) [Reserved]

(3) For GE material identified in this AD, contact GE, 1 Neumann Way, Cincinnati, OH 45215; phone: (513) 552-3272; email: aviation.fleetsupport@ge.com; website: ge.com.

(4) You may view this material at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.

Issued on July 10, 2025.

Peter A. White,

Deputy Director, Integrated Certificate Management Division, Aircraft Certification Service.

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