



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-2712; Project Identifier AD-2024-00145-E]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain General Electric Company (GE) Model CF34-8C1, CF34-8C5, CF34-8C5A1, CF34-8C5A2, CF34-8C5A3, CF34-8C5B1, CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, and CF34-8E6A1 engines. This proposed AD was prompted by a predicted reduction in the cyclic life of the combustion chamber assembly (CCA) forward flange. This proposed AD would require fluorescent penetrant inspections (FPIs) of the CCA for any indications and replacement if necessary. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at regulations.gov under Docket No. FAA-2024-2712; 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 NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

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:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2024-2712; Project Identifier AD-2024-00145-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may revise this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked

submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Alexei Marqueen, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA received a report from the manufacturer that an analysis was conducted during a ream repair of the aft flange bolt hole of the high-pressure compressor. The analysis determined that the cyclic life of the CCA forward flange bolt holes adjacent to the compressor case horizontal split line is lower than the current certified limit. This condition, if not addressed, could result in failure of the CCA before reaching the published life limit, uncontained release of the CCA, damage to the engine, and damage to the airplane.

FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Proposed AD Requirements in this NPRM

This proposed AD would require FPIs of the CCA forward flange for any indications and replacement as applicable.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 2,988 engines installed on airplanes of U.S. registry.

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

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
FPI the CCA forward flange	8 work-hours x \$85 per hour = \$680	\$0	\$680	\$2,031,840

The FAA estimates an average CCA utilization of 2,143 part cycles per year. Based on this life estimate, the FAA is providing an estimated annual cost to replace these parts. The FAA estimates that 369 affected engines will require CCA replacement at 28,500 part cycles since new (PCSN), 855 affected engines will require CCA replacement at 25,500 PCSN, and 1,764 affected engines will require CCA replacement at 40,000 PCSN. The following summarizes the costs of the proposed AD over the analysis timeframe, for the 12 years spanning 2024-2036. The cost of early CCA removals, required by this proposed AD, analyzed over 2024 through 2036, are \$265 million at a 2% financial discount rate.

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators Annualized (2% discount rate)
Replace the CCA (prorated part cost)	8 work-hours x \$85 per hour = \$680	\$646,900	\$647,580	\$24,544,532

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

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD 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.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would 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 Proposed Amendment

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

General Electric Company: Docket No. FAA-2024-2712; Project Identifier AD-2024-00145-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to the following General Electric Company (GE) Model engines:

(1) CF34-8C1, CF34-8C5, CF34-8C5A1, CF34-8C5A2, CF34-8C5A3, and CF34-8C5B1 engines with an installed combustion chamber assembly (CCA) having part

number (P/N) 4145T11G08, 4145T11G10, 4180T27G02, 4180T27G04, or 4923T82G02;
and

(2) CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, and CF34-8E6A1 engines with an installed CCA having P/N 4145T11G08, 4145T11G09, 4180T27G01, or 4180T27G03.

(d) Subject

Joint Aircraft System Component (JASC) Code 7240, Turbine Engine
Combustion Section.

(e) Unsafe Condition

This AD was prompted by a predicted reduction in the cyclic life of the CCA forward flange. The FAA is issuing this AD to prevent failure of the CCA. The unsafe condition, if not addressed, could result in failure of the CCA before reaching the published life limit, uncontained release of the CCA, 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) For affected Group 1 engines with an installed CCA having less than 15,000 part cycles since new (PCSN) as of the effective date of this AD, before the accumulation of 28,500 PCSN, remove the CCA from service and replace with P/N 4180T27G08 or a later approved P/N.

(2) For affected Group 2 engines with an installed CCA having less than 15,000 PCSN as of the effective date of this AD, before the accumulation of 25,500 PCSN, remove the CCA from service and replace with P/N 4180T27G07 or a later approved P/N.

(3) For affected Group 1 and 2 engines with an installed CCA having between 15,000 PCSN and 24,999 PCSN as of the effective date of this AD, before the accumulation of 25,000 PCSN, perform a fluorescent penetrant inspection (FPI) on the forward flange of the CCA for any indications.

(4) If no indications are found during the FPI required by paragraph (g)(3) of this AD, within 15,000 part cycles from the date of the FPI, remove the CCA from service and replace with P/N 4180T27G07, 4180T27G08, or a later approved P/N, as applicable.

(5) For affected Group 1 and 2 engines with an installed CCA having more than 25,000 PCSN as of the effective date of this AD, at the next engine shop visit after the effective date of this AD, perform an FPI on the forward flange of the CCA for any indications.

(6) If no indications are found during the FPI required by paragraph (g)(5) of this AD, within 15,000 part cycles from the date of the FPI and not to exceed 41,100 PCSN, remove the CCA from service and replace with P/N 4180T27G07, 4180T27G08, or a later approved P/N, as applicable.

(7) If an indication is found during any FPI required by paragraph (g)(3) or (5) of this AD, before further flight, remove the CCA from service and replace with P/N 4180T27G07, P/N 4180T27G08, or a later approved P/N, as applicable.

(h) Definitions

For the purpose of this AD:

(1) “Group 1 engines” are GE Model CF34-8C1, CF34-8C5, CF34-8C5A1, CF34-8C5A2, CF34-8C5A3, and CF34-8C5B1 engines.

(2) “Group 2 engines” are GE Model CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, and CF34-8E6A1 engines.

(3) An “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of major mating engine case flanges, except for the following situations, which do not constitute an engine shop visit:

(i) Separation of engine flanges solely for the purposes of transportation of the engine without subsequent maintenance.

(ii) Separation of engine flanges solely for the purposes of replacing the fan or propulsor without subsequent maintenance.

(i) Installation Prohibition

After the effective date of this AD, do not reinstall any CCAs that were removed as a result of paragraphs (g)(1), (2), (4), (6), and (7) of this AD in any engine.

(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) Additional 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

None.

Issued on December 19, 2024.

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

[FR Doc. 2024-30785 Filed: 12/26/2024 8:45 am; Publication Date: 12/27/2024]