



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-2712; Project Identifier AD-2024-00145-E; Amendment 39-23066; AD 2025-12-08]

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 CF34-8C1, 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 AD was prompted by a predicted reduction in the cyclic life of the combustion chamber assembly (CCA) forward flange. This AD requires fluorescent penetrant inspections (FPIs) of the CCA for any indications and replacement if necessary. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAAFAA-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 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.

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 notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain 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. The NPRM was published in the *Federal Register* on December 27, 2024 (89 FR 105483). The NPRM was prompted by a predicted reduction in the cyclic life of the CCA forward flange. In the NPRM, the FAA proposed to require FPIs of the CCA for any indications and replacement if necessary. The FAA is issuing this AD to address the unsafe condition on these products.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from four commenters. The commenters were the Air Line Pilots Association, International (ALPA), Fuji Dream Airlines, Horizon Air, and Japan Airlines. The following presents the comments received on the NPRM and the FAA's response to each comment.

Support for the NPRM

ALPA expressed support for the proposed AD.

Request for Clarification of Procedures for FPI of the CCA

Fuji Dream Airlines and Horizon Air requested that the FAA clarify the procedure for the FPI of the CCA in the NPRM. Fuji Dream Airlines proposed that the FAA revise paragraphs (g)(3) and (5) of the proposed AD to include reference to Paragraph 3., "Accomplishment Instructions" of GE CF34-8E Service Bulletin (SB) 72-A0250, dated May 1, 2024 (GE SB 72-A0250, dated May 1, 2024), in order to accomplish the requested clarification. Horizon Air proposed that the FAA revise paragraph (h) of the proposed AD to include reference to the associated subtask in the CF34-8E Engine Manual.

The FAA disagrees with the requests. The required actions of this AD do not deviate from the procedures contained in either reference regarding FPI of the CCA

forward flange and, therefore, the FAA does not consider additional service material references to be necessary. The FAA has not changed this AD as a result of this comment.

Request to Include Service Material

Japan Airlines requested that the FAA include GE SB 72-A0250, dated May 1, 2024, as the appropriate source of service material for accomplishing the actions required by the proposed AD.

The FAA disagrees with the request. As stated previously, the required actions of this AD do not deviate from the procedures contained in GE SB 72-A0250, dated May 1, 2024, regarding FPI of the CCA forward flange and, therefore, the FAA does not consider additional service material references to be necessary. The FAA has not changed this AD as a result of this comment.

Request to Allow Multiple FPIs

Fuji Dream Airlines requested that the FAA revise paragraph (g)(3) of the proposed AD to allow for multiple FPIs. Fuji Dream Airlines mentioned that GE SB 72-A0250, dated May 1, 2024, includes a note which specifies that multiple FPIs are permitted.

The FAA agrees with the request and has revised paragraph (g)(4) of this AD to include the following statement: Multiple FPIs of the forward flange prior to the 25,000 part cycles since new (PCSN) threshold are permitted. However, the affected CCA must be removed from service and replaced no later than 15,000 cycles from the last inspection performed before the 25,000 PCSN threshold.

Request to Clarify Definition of “Engine Shop Visit”

Horizon Air requested that the FAA clarify the definition of “engine shop visit” in paragraph (h)(3) of the proposed AD, which discussed the induction of an engine into the shop for maintenance involving the separation of major mating engine case flanges and included two exceptions; one for engine flanges separated solely for transportation, and the other for engine flanges separated solely for replacement of the fan or propulsor, both without subsequent maintenance. Horizon Air also stated that no definition is specified for what constitutes a “fan” or “propulsor,” and that replacement of the fan or propulsor

could be construed as “subsequent maintenance.” Additionally, Horizon Air mentioned that the GE Model CF34 engine is not typically separated at the engine flanges for transportation and proposed an alternative definition of “engine shop visit.”

The FAA agrees with the request for the reasons provided and has revised the definition of “engine shop visit” to the following: An “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine flanges.

Request to Align Compliance Time of the NPRM with Certain Service Material

Japan Airlines requested that the FAA align the compliance time threshold for the required actions of the proposed AD with the threshold stated in GE SB 72-A0250, dated May 1, 2024. Japan Airlines pointed out that some engines, due to the difference in compliance time threshold of the NPRM, would belong to different groups with different required actions than if the threshold specified in GE SB 72-A0250, dated May 1, 2024, were to be used. Fuji Dream Airlines also expressed support for this request.

The FAA disagrees with the request. The FAA acknowledges that the PCSN are going to be different based on the AD compliance time threshold, and that some parts may be subject to different requirements as a result. However, in developing an appropriate compliance time, the FAA considered the safety implications, parts availability, and normal maintenance schedules for timely accomplishment of the required actions. In consideration of all of these factors, the FAA determined that the compliance time threshold, as proposed, is appropriate, while still maintaining an adequate level of safety. If additional data are presented that would justify a different compliance threshold, the FAA may consider further rulemaking on this issue. The FAA has not changed this AD as a result of this comment.

Request to Clarify Replacement of the CCA

Japan Airlines requested that the FAA clarify the requirement for replacement of the CCA with part number (P/N) 4180T27G07, P/N 4180T27G08, or a later approved P/N. Japan Airlines asked if it is acceptable to replace the CCA with part numbers other than those specified in the proposed AD if the CCA must be replaced for reasons other than the requirements of paragraph (g) of the proposed AD.

The FAA agrees to clarify. If the CCA must be replaced for reasons other than the requirements of paragraph (g) of this AD, it is acceptable to replace it with part numbers other than those specified in this AD. However, if the replacement CCA has a part number that is affected by this AD, then the requirements of this AD will apply to the replacement CCA. The FAA has not changed this AD as a result of this comment.

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, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Costs of Compliance

The FAA estimates that this AD affects 2,988 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 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 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 AD, analyzed over 2024 through 2036, are \$265 million at a 2% financial discount rate.

On-condition costs

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

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:

2025-12-08 General Electric Company: Amendment 39-23066; Docket No. FAA-2024-2712; Project Identifier AD-2024-00145-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 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. Multiple FPIs of the forward flange prior to the 25,000 PCSN threshold are permitted. However, the affected CCA must be removed from service and replaced no later than 15,000 cycles from the last inspection performed before the 25,000 PCSN threshold.

(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 pairs of major mating engine flanges.

(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 June 13, 2025.

Peter A. White,
Deputy Director, Integrated Certificate Management Division,
Aircraft Certification Service.

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