



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-1988; Project Identifier AD-2023-00991-E; Amendment 39-22567; AD 2023-20-08]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain General Electric Company (GE) Model CF6-80C2B1F, CF6-80C2B2F, CF6-80C2B4F, CF6-80C2B5F, CF6-80C2B6F, CF6-80C2B7F, and CF6-80C2K1F engines. This AD was prompted by an uncontained engine fire and consequent manufacturer investigation, which revealed that certain bearings were installed improperly. This AD requires inspection of the magnetic chip detector (MCD) probe tip for metallic particles and, if necessary, removal of the engine from service. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this 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](https://www.regulations.gov) under Docket No. FAA-2023-1988; 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 street address for Docket Operations is listed above.

Material Incorporated by Reference:

- For service information identified in this final rule, contact General Electric Company, 1 Neumann Way, Cincinnati, OH 45215; phone: (513) 552-3272; email: aviation.fleetsupport@ae.ge.com.

- You may view this service information 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](https://www.regulations.gov) under Docket No. FAA-2023-1988.

FOR FURTHER INFORMATION CONTACT: Sungmo Cho, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7241; email: sungmo.d.cho@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2023-1988; Project Identifier AD-2023-00991-E” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule 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 final rule.

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 AD 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 AD, 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 AD. Submissions containing CBI should be sent to Sungmo Cho, 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

On January 2, 2023, a Boeing Model B767-300 airplane, powered by GE Model CF6-80C2B6F engines experienced an uncontained engine fire during flight, resulting in a commanded in-flight shut-down and air turn-back. A consequent investigation by Korea’s Aviation and Railway Accident Investigation Board revealed that the root cause of the event was the failure of the number 5R bearing due to misalignment of the 5R bearing outer ring in the 5R bearing housing.

On August 4, 2023, during disassembly of a CF6-80C2 engine that failed its new engine (pre-delivery) acceptance test, the manufacturer discovered that the number 4R bearing was improperly installed. The 4R and 5R bearings utilize the same MCD and therefore inspection of the MCD is necessary to detect degradation to bearings and subsequent bearing failure. Failure of a bearing, if not addressed, could result in engine

fire and damage to the airplane. The FAA is issuing this AD to address the unsafe condition on these products.

FAA's Determination

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed GE CF6-80C2 Service Bulletin 72-1631, R00, dated August 25, 2023. This service information specifies procedures for inspection of the MCD for metallic particles. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

AD Requirements

This AD requires inspection of the MCD for metallic particles that cover more than 10 percent of the probe tip and, if necessary, removal of the engine from service.

Interim Action

The FAA considers this AD to be an interim action. This unsafe condition is still under investigation by the manufacturer and, depending on the results of that investigation, the FAA may consider further rulemaking action.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for "good cause," finds that those procedures are "impracticable, unnecessary, or contrary to the public interest." Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies forgoing notice and comment prior to

adoption of this rule. The presence of improperly installed number 4R or 5R bearings, discovered after the January 2, 2023 engine fire and the August 4, 2023 GE CF6-80C2 engine disassembly, could lead to bearing failure and consequent engine fire and damage to the airplane, which indicates an immediate safety of flight problem. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 37 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
Inspect MCD for metallic particles	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$3,145

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

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Analysis for bearing material	1 work-hour x \$85 per hour = \$85	\$0	\$85
Reporting	1 work-hour x \$85 per hour = \$85	\$0	\$85
Replace engine	50 work-hour x \$85 per hour = \$4,250	Unknown	\$4,250

The FAA has received no definitive data on which to base the parts cost estimate for the on-condition engine replacement (removal from service) that is specified in this AD.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

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, and
- (2) Will not affect intrastate aviation in Alaska.

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:

2023-20-08 General Electric Company: Amendment 39-22567; Docket No. FAA-2023-1988; Project Identifier AD-2023-00991-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

General Electric Company (GE) Model CF6-80C2B1F, CF6-80C2B2F, CF6-80C2B4F, CF6-80C2B5F, CF6-80C2B6F, CF6-80C2B7F, and CF6-80C2K1F engines, having engine serial numbers (S/Ns) 630-136 through 630-156 inclusive, and engine S/Ns 707-510 through 707-645 inclusive, which have accumulated less than 400 engine cycles since new (CSN) on the effective date of this AD.

(d) Subject

Joint Aircraft System Component (JASC) Code 7200, Engine (Turbine/Turboprop).

(e) Unsafe Condition

This AD was prompted by an uncontained engine fire and consequent manufacturer investigation which revealed that certain bearings were installed improperly. The FAA is issuing this AD to prevent premature bearing failure. The unsafe condition, if not addressed, could result in engine fire 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 engines, within 15 engine cycles after the effective date of this AD, inspect the magnetic chip detector (MCD) for metallic particles that cover more than 10 percent of the probe tip, and if necessary, do a material composition analysis as applicable, in accordance with paragraph 3., Accomplishment Instructions, of GE CF6-80C2 Service Bulletin (SB) 72-1631, R00, dated August 25, 2023 (GE SB 72-1631).

(2) Thereafter, at the applicable times specified in paragraphs (g)(2)(i) through (iii), inspect the MCD for metallic particles that cover more than 10 percent of the probe

tip, and if necessary, do a material composition analysis as applicable, in accordance with paragraph 3., Accomplishment Instructions, of GE SB 72-1631.

(i) For engines that have accumulated less than 100 engine CSN, within 25 engine cycles after the previous inspection.

(ii) For engines that have accumulated 100 or more and less than 200 engine CSN, within 50 engine cycles after the previous inspection.

(iii) For engines that have accumulated 200 or more and less than 399 engine CSN, within 100 engine cycles after the previous inspection.

(3) If bearing material is detected during any inspection and analysis required by paragraphs (g)(1) and (2) of this AD, before further flight, remove the engine from service.

(h) Reporting

If a positive identification of bearing material was made during the inspection and analysis required by paragraphs (g)(1) and (2) of this AD, submit a report within 10 days after the positive identification or within 10 days after the effective date of this AD, whichever occurs later. The report must include the MCD probe tip inspection results, material composition analysis, the engine serial number, and number of engine CSN. Submit the report to GE Aviation Fleet Support in accordance with paragraph 3., Accomplishment Instructions, of GE SB 72-1631.

(i) 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 (i) of this AD and email it to: ANE-AD-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.

(j) Additional Information

For more information about this AD, contact Sungmo Cho, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7241; email: sungmo.d.cho@faa.gov.

(k) Material Incorporated by Reference

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

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

(i) General Electric Company (GE) CF6-80C2 Service Bulletin 72-1631, R00, dated August 25, 2023.

(ii) [Reserved]

(3) For GE service information identified in this AD, contact General Electric Company, 1 Newman Way, Cincinnati, OH 45215, phone: (513) 552-3272; email: aviation.fleetsupport@ae.ge.com.

(4) You may view this service information 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.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on September 29, 2023.

Victor Wicklund, Deputy Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2023-22145 Filed: 10/2/2023 8:45 am; Publication Date: 10/4/2023]