



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2020-0371; Project Identifier AD-2019-00124-E]**

**RIN 2120-AA64**

**Airworthiness Directives; General Electric Company Turbofan 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 all General Electric Company (GE) CF6-80C2A1, CF6-80C2A2, CF6-80C2A3, CF6-80C2A5, CF6-80C2A5F, CF6-80C2A8, CF6-80C2B1, CF6-80C2B1F, CF6-80C2B2, CF6-80C2B2F, CF6-80C2B4, CF6-80C2B4F, CF6-80C2B5F, CF6-80C2B6, CF6-80C2B6F, CF6-80C2B6FA, CF6-80C2B7F, CF6-80C2B8F, and CF6-80C2D1F model turbofan engines. This proposed AD was prompted by reports of incidents that resulted in a significant fuel loss during flight and an in-flight shutdown (IFSD) of the engine. This proposed AD would require initial and repetitive shim checks of the hydromechanical unit/main engine control (HMU/MEC) idler adapter on the accessory gearbox (AGB) assembly and, depending on the results of the shim check, possible replacement of the inserts on the HMU/MEC idler adapter. As a terminating action to the repetitive shim checks, this proposed AD would also require a protrusion check and a pull-out test and replacements of inserts on the HMU/MEC idler adapter that fail either test. 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 <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.

For service information identified in this NPRM, contact General Electric Company, 1 Newman Way, Cincinnati, OH, 45215, United States; phone: (513) 552-3272; email: [aviation.fleetsupport@ae.ge.com](mailto:aviation.fleetsupport@ae.ge.com). You may view this referenced service information at the FAA, Engine & Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0371; 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. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Matthew Smith, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7735; fax: 781-238-7199; email: [matthew.c.smith@faa.gov](mailto:matthew.c.smith@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-2020-0371; Project Identifier AD-2019-00124-E” at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will consider all comments received by the closing date and may amend this NPRM 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 <https://www.regulations.gov>, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about this proposed AD.

### **Confidential Business Information**

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 Matthew Smith, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803. Any commentary that the FAA receives which

is not specifically designated as CBI will be placed in the public docket for this rulemaking.

### **Discussion**

The FAA received reports regarding incidents on GE CF6-80C2 model turbofan engines that resulted in fuel loss during flight and an IFSD of the engine. The incidents resulted from inserts on the HMU/MEC idler adapter on the AGB assembly pulling out of the housing. An investigation by the manufacturer discovered improperly cut threads on the inserts and erroneous instructions in the maintenance manual, which contributed to poor thread engagement. This condition, if not addressed, could result in failure of the HMU/MEC, engine fire, and damage to the airplane.

### **Related Service Information under 1 CFR part 51**

The FAA reviewed GE CF6-80C2 Service Bulletin (SB) 72-1577 R01, dated August 16, 2019. The SB describes procedures for performing shim checks of the HMU/MEC idler adapter. 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 the ADDRESSES section.

### **FAA's Determination**

The FAA is proposing this AD because the agency evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would require initial and repetitive shim checks of the HMU/MEC idler adapter on the AGB assembly and, depending on the results of the shim checks, replacement of the inserts on the HMU/MEC idler adapter. As a terminating action to the repetitive shim checks, this proposed AD would also require a protrusion

check and a pull-out test and replacements of inserts on the HMU/MEC idler adapter that fail either test.

**Costs of Compliance**

The FAA estimates that this proposed AD affects 555 engines installed on airplanes of U.S. registry.

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

**Estimated costs**

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Shim check	1.00 work-hour x \$85.00 per hour = \$85.00	\$0.00	\$85.00	\$47,175
Protrusion Check/Pull-out test	4.00 work-hours x \$85.00 per hour = \$340.00	\$0.00	\$340.00	\$188,700

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

**On-condition costs**

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per product</b>
Replace HMU/MEC idler adapter insert	4.00 work-hours x \$85.00 per hour = \$340.00	\$50.00	\$390.00

**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) 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 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 (AD):

**General Electric Company: Docket No. FAA-2020-0371; Project Identifier AD-2019-00124-E.**

**(a) Comments Due Date**

The FAA must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to General Electric Company (GE) CF6-80C2A1, CF6-80C2A2, CF6-80C2A3, CF6-80C2A5, CF6-80C2A5F, CF6-80C2A8, CF6-80C2B1, CF6-80C2B1F, CF6-80C2B2, CF6-80C2B2F, CF6-80C2B4, CF6-80C2B4F, CF6-80C2B5F, CF6-80C2B6, CF6-80C2B6F, CF6-80C2B6FA, CF6-80C2B7F, CF6-80C2B8F, and CF6-80C2D1F model turbofan engines that underwent an engine shop visit prior to November 1, 2018.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7321, Fuel Control/Turbine Engines.

**(e) Unsafe Condition**

This AD was prompted by failure of the hydromechanical unit/main engine control (HMU/MEC) on the accessory gearbox (AGB) assembly. The FAA is issuing this AD to prevent failure of the HMU/MEC. 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) Perform a shim check of the HMU/MEC idler adapter inserts in accordance with paragraph 3.B.(1) of GE CF6-80C2 Service Bulletin (SB) 72-1577 R01, dated August 16, 2019, within 1,200 flight hours after the effective date of this AD.

(2) Thereafter, perform a repetitive shim check of the HMU/MEC idler adapter inserts in accordance with paragraph 3.B.(1) of GE CF6-80C2 SB 72-1577 R01, dated August 16, 2019 within every 1,200 flight hours since last shim check.

(3) If any HMU/MEC idler adapter insert fails the shim check required by paragraph (g)(1) or (2) of this AD, perform the following prior to further flight:

(i) Retorque the bolts at each bolt location that failed the shim check, in accordance with paragraph 3.B.(1)(c) of GE CF6-80C2 SB 72-1577 R01, dated August 16, 2019.

(ii) Perform the shim check again, in accordance with paragraph (g)(1) of this AD. If the shim check fails again, perform the terminating action required by paragraph (h) of this AD.

**(h) Terminating Action**

As a terminating action to the repetitive shim check requirements of paragraph (g)(2) and (g)(3) of this AD, and as required by paragraph (g)(3)(ii) of this AD, perform the following:

(1) Do a protrusion check at all eight bolt locations in accordance with paragraph 3.C.(3) of GE CF6-80C2 SB 72-1577 R01, dated August 16, 2019.

(2) Do a pull-out test at all eight bolt locations in accordance with paragraph 3.C.(4) of GE CF6-80C2 SB 72-1577 R01, dated August 16, 2019.

(3) If the inserts on the HMU/MEC idler adapter fail the protrusion check or pull-out test required by paragraph (h)(1) or (2) of this AD, replace the inserts in accordance with paragraph 3.C.(5) of GE CF6-80C2 SB 72-1577 R01, dated August 16, 2019. After replacement of the inserts is accomplished, the requirements of this AD have been met and no further action is required.

(4) If the inserts on the HMU/MEC idler adapter pass both the protrusion check and the pull-out test required by paragraphs (h)(1) and (2) of this AD, the requirements of this AD have been met and no further action is required.

**(i) Credit for Previous Actions**

You may take credit for the initial shim check of the HMU/MEC idler adapter required by paragraph (g)(1) of this AD if you performed this shim check before the effective date of this AD using GE CF6-80C2 SB 72-1577 R00, dated October 31, 2018.

**(j) Definition**

For the purpose of this AD, an “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine case flanges, except separation of engine flanges solely for the purposes of transportation of the engine without subsequent maintenance, which does not constitute an engine shop visit.

**(k) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO 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 certification office, send it to the attention of the person identified in paragraph (l)(1) of this AD. You may email your request 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.

**(1) Related Information**

(1) For more information about this AD, contact Matthew Smith, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7735; fax: 781-238-7199; email: matthew.c.smith@faa.gov.

(2) For service information identified in this AD, contact General Electric Company, 1 Newman Way, Cincinnati, OH, 45215, United States; phone: (513) 552-3272; email: aviation.fleetsupport@ae.ge.com. You may view this referenced service information at the FAA, Engine & Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Issued on April 6, 2020.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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