



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2012-0817; Directorate Identifier 99-NE-24-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; General Electric Company Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

**SUMMARY:** We are revising an earlier proposed airworthiness directive (AD) for certain General Electric Company (GE) CF6-80C2 series turbofan engines. That NPRM proposed to supersede an AD that required replacement of fuel tubes connected to the fuel flowmeter. That NPRM was prompted by several reports of fuel leaks, and two reports of engine fire, due to mis-assembled supporting brackets on the fuel tube connecting the flowmeter to the Integrated Drive Generator (IDG) fuel-oil cooler. That NPRM required installation of a new simplified one-piece supporting bracket to eliminate mis-assembly. This supplemental action adds an engine model, alters the list of affected part numbers (P/Ns), changes the replacement schedule, and revises our estimated cost of compliance. We are reopening the comment period to allow the public the opportunity to comment on these proposed changes. We are proposing this AD to prevent high-pressure fuel leaks caused by improper seating of fuel tube flanges, which could result in an engine fire and damage to the airplane.

**DATES:** We must receive comments on this supplemental NPRM by [INSERT DATE 60 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 <http://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: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact General Electric Company, GE-Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215, phone: (513) 552-3272; e-mail: [geae.aoc@ge.com](mailto:geae.aoc@ge.com). You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Kasra Sharifi, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7773; fax: 781-238-7199; e-mail: [kasra.sharifi@faa.gov](mailto:kasra.sharifi@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2012-0817; Directorate Identifier 99-NE-24-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We issued an NPRM to amend 14 CFR part 39 to include an AD that would apply to certain GE CF6-80C2 series turbofan engines. That NPRM published in the Federal Register on August 13, 2012 (77 FR 48110). That NPRM proposed to supersede AD 2000-04-14, Amendment 39-11597 (65 FR 10698, February 29, 2000) which had required replacement of certain fuel tubes. That NPRM proposed to require installation of a new simplified one-piece bracket to eliminate mis-assembly.

### **Actions since Previous NPRM was Issued**

Since we issued the previous NPRM (77 FR 48110, August 13, 2012), we received and evaluated comments from the public. The nature of the comments caused us to issue this supplemental NRPM to reopen the comment period and allow the public the opportunity to comment on the changes we have made.

## **Comments**

The following presents the comments received on the previous NPRM (77 FR 48110, August 13, 2012) and the FAA's response to each comment.

### **Request to Remove Certain Part Number from Final Rule**

Seven air carriers requested that we exclude bolt P/N MS9557-12 from the final rule because this is a common part used in other components of the engine besides the main engine control to flowmeter fuel tube.

We agree. We changed the proposed AD by removing reference to P/N MS9557-12 from the compliance and prohibition paragraphs.

### **Request to Remove Idle Leak Check Requirement**

The Boeing Company (Boeing) and FEDEX Express requested that we remove the idle leak check requirement, which they contend is not necessary to address the unsafe condition and which is included in normal maintenance, and so does not need to be mandated.

We disagree. We are issuing this AD to prevent fuel leak and fire due to mis-assembled connections, and idle leak check is necessary to ensure no fuel leaks occur after tube or bracket replacement. We did not change the proposed AD.

### **Request to Alter Mandate for Replacement of Hardware**

Boeing, General Electric Company, and American Airlines requested that we change the AD to mandate replacement of only the disconnected hardware during on-wing maintenance, and then the remaining balance of affected hardware during the next shop visit.

We agree. We changed the proposed AD to require that for on-wing maintenance, only those tubes and brackets that had been disconnected would be replaced at that time.

### **Request to Expand the Applicability**

GE and Boeing requested that we add the GE CF6-80C2B5F engine model to the list of applicable engines. Even though the production model of this engine used a one-piece design (2021M83G01), some engines may have subsequently received bracket P/N 1321M88P001A, allowed by GE Alert Service Bulletin (SB) 73-A0401 for the purpose of hardware interchangeability.

We agree. We changed the proposed AD by adding the GE CF6-80C2BF5 engine to the list of applicable engines specified in paragraph (c).

### **Request to Incorporate by Reference (IBR) applicable GE SBs**

Four air carriers requested that applicable GE SBs be incorporated by reference in the AD to provide more specific and detailed instructions to aid operators in part replacement.

We partially agree. We agree that GE SBs provide additional guidance. We disagree with incorporating the SBs by reference because multiple acceptable methods exist for performing the actions required by the AD. We did not change the proposed AD.

### **Request to Clarify Why the AD Mandates Fuel Tube Changes**

Onur Air requested clarification as to why the proposed AD would mandate fuel tube changes when the GE SB only applies to engines with a certain bracket.

We disagree. The proposed AD supersedes AD 2000-04-14, Amendment 39-11597 (65 FR 10698, February 29, 2000). That AD requires replacement of certain fuel tube P/Ns. The proposed AD retains that requirement and also mandates replacement of certain supporting brackets and spray shields. We did not change the proposed AD.

### **Request to Provide Method to Identify Affected Configuration without Disassembly**

American Airlines requested that the proposed AD provide a method to identify the affected fuel tube configuration without disassembling the tubes, because P/N 1321M42G04 is located under a loop clamp, making it difficult to read the P/N.

We disagree. Detailed maintenance instructions can be found in the Instructions for Continued Airworthiness for the engine. We did not change the proposed AD.

**Request to Issue a New AD Instead of Superseding a Prior AD**

The National Transportation Safety Board requested that we issue a new AD, instead of proposing to supersede AD 2000-04-14, Amendment 39-11597 (65 FR 10698, February 29, 2000), for actions regarding the removal of the bracket. Operators might presume that if they have already complied with AD-2000-04-14 that they might also comply with the additional requirements (replacement of brackets and spray shield) of the proposed supersedure AD.

We disagree. The proposed supersedure AD addresses the same unsafe condition as the original AD, but expands its scope. The proposed supersedure AD will receive its own amendment number and AD number, and the original AD will be deleted. We did not change the proposed AD.

**Request for Changes to the Costs of Compliance**

American Airlines requested that we revise the cost estimate to more accurately capture the cost of the spray shield and also to include the cost of the idle leak check.

We agree. In the “Cost of Compliance” section of the proposed AD, we have changed the cost estimate for each spray shield from \$180 to \$370, and we have included an estimated cost of \$1000 per engine for the idle leak check.

**Request to Clarify Spray Shield Part Numbers**

Delta Airlines requested that we change the conjunction “and” between the two P/Ns listed in paragraph (f)(4) to “or” since each engine only has one spray shield to be replaced, and that we add spray shield P/N 1606M57G03 to the list, resulting in three specified P/Ns. The added part number is an alternative spray shield to P/N 1775M61G01, and so is also affected by the AD.

We partially agree. We agree that P/N 1606M57G03 should be added to the list of P/Ns to be removed. We disagree that the conjunction “and” should be changed to “or” because all three spray shield P/Ns are subject to replacement. We changed the AD to require the replacement of P/N 1606M57G03.

**Request to Add Historical Information to Preamble**

GE requested that we add more historical information to the “Action Since Existing AD was Issued” paragraph in the AD preamble.

We disagree. The cited preamble paragraph will not appear in the final rule, and so additional historical information will not add value to that proposed rule. We did not change the proposed AD.

**Request to Provide the P/Ns of Eligible Replacement Parts**

UPS requested that we provide P/Ns of eligible replacement parts.

We disagree. The purpose of the AD is to identify and mandate removal of parts causing the unsafe condition. Operators are required to only use parts that are eligible for installation. We did not change the proposed AD.

**Request to Nullify Need for Compliance if SBs Already Accomplished**

Four air carriers requested that the AD state that no further action is required if the applicable GE SBs have already been accomplished.

We disagree. The “Compliance” and “Replacement” paragraphs sufficiently state that compliance actions do not have to be repeated if accomplished before the effective date of the AD. We did not change the proposed AD.

**Request to Withdraw the Proposed AD**

American Airlines requested that we withdraw the requirement to incorporate the spray shield on-wing any time the fuel tubes are disconnected because disconnecting them is an unnecessary hardship on air carriers.

We disagree. On-wing maintenance to the spray shield and affected tubes without removing and replacing them may lead to the unsafe condition. We did not change the proposed AD.

#### **FAA’s Determination**

We are proposing this supplemental NPRM because we 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. Certain changes described above expand the scope of the original NPRM. As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this supplemental NPRM.

#### **Proposed Requirements of the Supplemental NPRM**

This supplemental NPRM would require installation of a new simplified one-piece bracket to eliminate mis-assembly of supporting brackets on the fuel tube connecting the flowmeter to the IDG fuel-oil cooler.

#### **Costs of Compliance**

We estimate that this proposed AD would affect 926 GE CF6-80C2 engines installed on airplanes of U.S. registry. We also estimate that one hour would be required per engine to accomplish the actions required by this AD. The average labor rate is \$85 per hour. We also estimate that the required parts will cost about \$370 per engine. We estimate that the cost of the idle leak check is \$1000 per engine. Based on these figures, we estimate the total cost of the proposed AD to U.S. operators is \$3,275,231.

#### **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.

We are 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**

We 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) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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, 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):

**2012-XX-XX General Electric Company:** Docket No. FAA-2012-0817; Directorate Identifier 99-NE-24-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD supersedes AD 2000-04-14, Amendment 39-11597 (65 FR 10698, February 29, 2000).

#### **(c) Applicability**

This AD applies to all General Electric Company (GE) CF6-80C2 A1/A2/A3/A5/A8/A5F/B1/B2/B4/B5F/B6/B1F/B2F/B4F/B6F/B7F/D1F turbofan engines with fuel tubes, part number (P/N) 1321M42G01, 1334M88G01, 1374M30G01, 1383M12G01, 1606M57G03, 1606M57G01, or 1775M61G01, or supporting bracket, P/N 1321M88P001A, installed.

#### **(d) Unsafe Condition**

This AD was prompted by several reports of fuel leaks, and two reports of engine fire, due to mis-assembled supporting brackets on the fuel tube connecting the flowmeter to the Integrated Drive Generator (IDG) fuel-oil cooler. We are proposing this AD to prevent high-pressure fuel leaks caused by improper seating of fuel tube flanges, which could result in an engine fire and damage to the airplane.

**(e) Compliance**

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

**(f) Replacement**

After the effective date of this AD, if the fuel tubes are disconnected for any reason, or at the next engine shop visit, whichever occurs first, replace the fuel tubes and brackets with improved tubes and brackets eligible for installation. For on-wing maintenance, replace only tubes and brackets that have been disconnected. Do the following:

(1) Replace the fuel flowmeter to IDG fuel-oil cooler fuel tube, P/N 1321M42G01, with a part eligible for installation.

(2) For engines with Power Management Controls, replace the Main Engine Control to fuel flowmeter fuel tube, P/N 1334M88G01, with a part eligible for installation.

(3) For engines with Full Authority Digital Electronic Controls, replace the Hydromechanical Unit to fuel flowmeter fuel tubes, P/Ns 1383M12G01 and 1374M30G01, with a part eligible for installation.

(4) Replace supporting bracket, P/N 1321M88P001A, and spray shields, P/Ns 1606M57G01, 1606M57G03, and 1775M61G01 with one-piece supporting bracket, P/N 2021M83G01.

(5) Perform an idle leak check after accomplishing paragraphs (f)(1), (f)(2), (f)(3), or (f)(4), or any combination thereof.

**(g) Prohibition**

After the effective date of this AD, do not install any of the following parts into any GE CF6-80C2 series turbofan engines: P/Ns 1321M42G01, 1321M88P001A, 1334M88G01, 1374M30G01, 1383M12G01, 1606M57G01, 1606M57G03, and 1775M61G01.

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

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(i) Related Information**

(1) For more information about this AD, contact Kasra Sharifi, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7773; fax: 781-238-7199; e-mail: [kasra.sharifi@faa.gov](mailto:kasra.sharifi@faa.gov).

(2) For guidance on the replacements, refer to GE Alert Service Bulletins CF6-80C2 SB 73-A0224, CF6-80C2 SB 73-A0231, CF6-80C2 SB 73-A0401, and CF6-80C2 SB 73-0242.

(3) For service information identified in this AD, contact General Electric Company, GE-Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215, phone: (513) 552-3272; e-mail: [geae.aoc@ge.com](mailto:geae.aoc@ge.com). You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts on December 20, 2012.

Robert J. Ganley,  
Acting Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

[FR Doc. 2012-31362 Filed 12/28/2012 at 8:45 am; Publication Date: 12/31/2012]