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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2007-28172; Directorate Identifier 2007-NE-23-AD; Amendment 39-15224; AD 2007-21-06]**

**RIN 2120-AA64**

#### **Airworthiness Directives; General Electric Company (GE) CF6-80C2A5F Turbofan Engines**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for GE CF6-80C2A5F turbofan engines installed on, but not limited to, Airbus A300F4-605R airplanes. This AD requires removing previous software versions from the engine electronic control unit (ECU). Engines with new version software will have increased margin to flameout. This AD results from reports of engine flameout events during flight, including reports of events where all engines simultaneously experienced a flameout or other adverse operation. Although the root cause investigation is not yet complete, we believe that exposure to ice crystals during flight is associated with these flameout events. We are issuing this AD to minimize the potential of an all-engine flameout event caused by ice accretion and shedding during flight.

**DATES:** This AD becomes effective November 15, 2007.

**ADDRESSES:** You can get the service information identified in this AD from General Electric Company via Lockheed Martin Technology Services, 10525 Chester Road, Suite C, Cincinnati, Ohio 45215, telephone (513) 672-8400, fax (513) 672-8422.

The Docket Operations office is located at U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001.

**FOR FURTHER INFORMATION CONTACT:** John Golinski, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: john.golinski@faa.gov; telephone: (781) 238-7135, fax: (781) 238-7199.

**SUPPLEMENTARY INFORMATION:** The FAA proposed to amend 14 CFR part 39 with a proposed AD. The proposed AD applies to GE CF6-80C2A5F turbofan engines installed on Airbus A300 series airplanes. We published the proposed AD in the Federal Register on June 28, 2007 (72 FR 35366). That action proposed to require removing previous software versions from the engine ECU. Engines with new version software will have increased margin to flameout.

### **Examining the AD Docket**

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

### **Comments**

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

### **Applicability Clarification**

One commenter, Airbus, points out that CF6-80C2A5F engines are installed on Airbus A300-600 series airplanes, and not on Airbus A300 series airplanes, as we stated in the proposed AD. We agree that the applicability needs clarification. However, to be more accurate, we changed the AD to state that the CF6-80C2A5F engines are installed on, but not limited to, Airbus A300F4-605R airplanes.

### **Request To Exclude Airplanes**

Airbus requests that we exclude airplanes that have incorporated modification number (No.) 13270, from the AD applicability. Airbus did not provide any technical rationale, information, or explanation regarding the content of modification No. 13270, or why airplanes with modification No. 13270 should be excluded from the AD.

We do not agree. We believe that modification No. 13270 might be an Airbus design change for removing previous versions of software from engines and incorporating new software. We state in the AD that the actions are required unless previously done. Airbus airplanes that have previously incorporated the actions of this AD by following the GE Service Bulletin, or any other document, such as Airbus modification No. 13270, have satisfied the requirements of this AD, and no further action is required. We did not change the AD.

### **Request To Add Airbus Service Bulletin Reference**

Airbus requests that we add a reference to Airbus Service Bulletin No. A300-73-6032, dated May 23, 2007 as another source of information on the subject. Airbus provided no explanation for adding the reference.

We do not agree. The AD requirements are for the GE CF6-80C2A5F turbofan engine, and not the airplane. Airbus did not send us a copy of their Service Bulletin, so we do not know the contents of it. We did not change the AD.

## **Update of Service Bulletin Reference**

In the related material paragraph, the proposed AD referenced GE software upgrade Service Bulletin No. CF6-80C2 S/B 73-0352, dated February 7, 2007. GE has since revised that Service Bulletin and we updated the reference to Service Bulletin No. CF6-80C2 S/B 73-0352, Revision 1, dated September 12, 2007, in that paragraph.

## **Request for Additional Information**

Airbus requests that we provide additional information to them on the number of engine flameout reports defined in the proposed AD.

We do not agree. GE has stated that they will continue to periodically update the airplane manufacturers on the root cause investigation and any revenue service flameout events. We did not change the AD.

## **Request for Differences Between GE Service Bulletin and AD To Be Reconciled**

KLM Royal Dutch Airlines states that the proposed AD statements regarding prohibition of installing ECUs with pre GE Service Bulletin No. 73-0352 software after 24 months of AD effective date, is different from the GE Service Bulletin requirement. The commenter requests that differences between the Service Bulletin and the AD be reconciled.

We do not agree. Both the AD and Service Bulletin compliance program identify 24 months as the calendar time cap for incorporating the software change. The AD requires that the new software be installed after 24 months. The Service Bulletin does not provide this statement but recommends the actions of the Service Bulletin be done within 24 months of the original issue date of the SB. We believe the intent of the AD and SB are the same, and that the AD program is appropriate for balancing the actions to address the unsafe condition and impact to the fleet. We did not change the AD.

## **Proposed AD Allows for No Exemptions**

KLM Royal Dutch Airlines states that, unlike AD 2007-12-07 (Boeing 747 and 767 ECU fleet) the proposed AD allows for no exemptions. The commenter requests that we allow for exemptions, to make the AD in line with other ADs for CF6-80C2 engine applications.

We do not agree. The AD actions for AD 2007-12-07 were developed specifically for the affected fleet of CF6-80C2 engines installed on Boeing 747 and 767 airplanes. That action considers the number of affected engines, available resources, risk of unsafe condition, and other factors. The actions identified in this AD are specific to the CF6-80C2 engines installed on Airbus A300F4-605R airplanes, and are appropriate for balancing the actions needed to address the unsafe condition and impact to the fleet. We did not change the AD.

## **Request To Rewrite All of the CF6-80 Ice Accretion ADs**

KLM Royal Dutch Airlines requests that we rewrite all of the compliance requirements and determination definitions for all of the CF6-80 ice accretion ADs, to make them identical. The commenter did not provide any justification for this change.

We do not agree. We developed the AD compliance programs for the icing inclement weather threat for the various fleets of CF6-80C2 and CF6-80E1 engines. These AD programs are different relative to corrective actions, due to several factors, including risk of unsafe condition, fleet size, and available resources. We believe having a tailored compliance plan for each population of CF6 engine

provides the best approach of mitigating the risk of an unsafe condition and minimizing the impact to the respective fleet. We did not change the AD.

## **Conclusion**

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

## **Costs of Compliance**

We estimate that this AD will affect 81 CF6-80C2A5F turbofan engines installed on Airbus A300F4-605R airplanes of U.S. registry. We also estimate it will take about 3.5 work-hours per ECU to perform the actions. The average labor rate is \$80 per work-hour. Based on these figures, we estimate the cost to U.S. operators to be \$22,680. Our cost estimate is exclusive of warranty coverage.

## **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 have determined that 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) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); 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.

We prepared a summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary at the address listed under ADDRESSES.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration 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:



**2007-21-06 General Electric Company:** Amendment 39-15224. Docket No. FAA-2007-28172; Directorate Identifier 2007-NE-23-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective November 15, 2007.

**Affected ADs**

(b) None.

**Applicability**

(c) This AD applies to General Electric Company (GE) CF6-80C2A5F turbofan engines, installed on, but not limited to, Airbus A300F4-605R airplanes.

**Unsafe Condition**

(d) This AD results from reports of engine flameout events during flight, including reports of events where all engines simultaneously experienced a flameout or other adverse operation. We are issuing this AD to minimize the potential of an all-engine flameout event, due to ice accretion and shedding during flight. Exposure to ice crystals during flight is believed to be associated with these flameout events.

**Compliance**

(e) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

**Interim Action**

(f) These actions are interim actions due to the on-going investigation, and we may take further rulemaking actions in the future based on the results of the investigation and field experience.

**Engine ECU Software Removal**

(g) Within 24 months after the effective date of this AD, remove software version 8.4.E or older versions, from the engine ECUs, part numbers 1797M63P01, 1797M63P02, 1797M63P03, 1797M63P04, 1797M63P05, 1820M99P01, 1820M99P02, 1820M99P03, 1820M99P04, and 1820M99P05.

**Previous Software Versions of ECU Software**

(h) You may use an ECU installed on an engine with a software version of 8.4.E or older for no longer than 24 months after the effective date of this AD.

(i) Once software version 8.4.E or older has been removed and new FAA-approved software version is installed in an ECU, reverting to version 8.4.E or older of ECU software in that ECU is prohibited.

(j) After 24 months from the effective date of this AD, use of an ECU with a software version of 8.4.E or older is prohibited.

### **Alternative Methods of Compliance**

(k) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

### **Special Flight Permits**

(l) Special flight permits are not authorized.

### **Related Information**

(m) Information on removing ECU software and installing new software, which provides increased margin to flameout, can be found in GE Service Bulletin No. CF6-80C2 S/B 73-0352, Revision 1, dated September 12, 2007.

(n) Contact John Golinski, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: john.golinski@faa.gov; telephone: (781) 238-7135, fax: (781) 238-7199, for more information about this AD.

### **Material Incorporated by Reference**

(o) None.

Issued in Burlington, Massachusetts, on October 4, 2007.  
Thomas A. Boudreau,  
Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.  
[FR Doc. E7-20036 Filed 10-10-07; 8:45 am]