

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 39**

[Docket No. FAA-2008-0402; Directorate Identifier 2007-NM-165-AD]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747 Airplanes and Model 767 Airplanes Equipped With General Electric CF6-80C2 and CF6-80A Series Engines

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

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Boeing Model 747 airplanes and Model 767 airplanes. This proposed AD would require revising the airplane flight manual to advise the flightcrew to use certain procedures during descent in certain icing conditions. This proposed AD results from reports of several in-flight engine flameouts, including multiple dual engine flameout events and one total power loss event, in ice-crystal icing conditions. We are proposing this AD to ensure that the flightcrew has the proper procedures to follow in certain icing conditions. These certain icing conditions could cause a multiple engine flameout during flight without the ability of the engines to be relit, and consequent forced landing of the airplane.

DATES: We must receive comments on this proposed AD by May 22, 2008.

ADDRESSES: You may send comments 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 Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207.

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 (telephone 800-647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT:

Margaret Langsted, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6500; fax (425) 917-6590.

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-2008-0402; Directorate Identifier 2007-NM-165-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 have received reports indicating that there have been several in-flight engine flameout events, including one dual event, on Model 767 airplanes and four dual events on Model 747 airplanes, in ice-crystal icing conditions at altitudes between 13,000 and 36,000 feet during descent. These airplanes were equipped with General Electric (GE) CF6-80C2 series engines. Each flameout event was in or near convective weather with ice-crystal icing; this type of icing does not appear on radar due to its low reflectivity, and neither the airplane ice detector nor visual indications indicate the presence of icing conditions. Therefore, it is often undetected by the flightcrew. These conditions can cause ice crystals to

accumulate in the core flow path of the engine during low-power conditions, such as idle or idle descent. The accumulated ice sheds during throttle increase and is ingested into the engine, causing the combustor to flameout resulting in an in-flight flameout and potential damage to the high pressure compressor due to ice impact. The GE CF6-80C2 and CF6-80A series engines models have similar compressor designs.

Activating the engine anti-ice increases the flameout margin and reduces the potential for multiple engine flameouts by increasing bleed flow and idle speed. Engine anti-ice also assists with relighting the engines by turning on the igniters on airplanes that are not equipped with autorelight. However, in several of the subject engine flameout events, the engine anti-ice was already on when the engines flamed out. In each flameout event, the engines relit and continued to operate normally for the remainder of the flight.

The requirement to activate the engine anti-ice prior to descent in visible moisture with total air temperature less than 10 °Celsius (C) and greater than -40 °C already exists for airplanes that are not equipped with a primary in-flight ice detection system, which is designed to automatically activate wing anti-ice and engine anti-ice when the airplane is in icing conditions. However, the primary in-flight ice detection system does not detect ice-crystal icing; therefore, the engine anti-ice would not be activated during these icing encounters. There is no requirement to activate engine anti-ice at temperatures below -40 °C, and this proposed AD would require activation of engine anti-ice at temperatures below -40 °C.

This condition, if not corrected, could result in a multiple engine flameout during flight without the ability of the engines to be relit, and consequent forced landing of the airplane.

FAA's Determination and Requirements of This Proposed AD

We are proposing this AD because we evaluated all relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the(se) same type design(s). This proposed AD would require revising the airplane flight manual (AFM) to advise the flightcrew to use certain procedures during descent in certain icing conditions.

Interim Action

We consider this proposed AD interim action. If final action is later

identified, we might consider further rulemaking then.

Costs of Compliance

There are about 1,064 airplanes of the affected design in the worldwide fleet.

The following table provides the estimated costs for U.S. operators to comply with this proposed AD.

ESTIMATED COSTS

Action	Work hours	Average labor rate per hour	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
AFM revision	1	\$80	\$0	\$80	340	\$27,200

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 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 that the 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); 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 regulatory evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket. See the **ADDRESSES** section for a location to examine the regulatory evaluation.

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 Federal Aviation Administration (FAA) amends § 39.13 by adding the following new airworthiness directive (AD):

Boeing: Docket No. FAA-2008-0402; Directorate Identifier 2007-NM-165-AD.

Comments Due Date

- (a) The FAA must receive comments on this AD action by May 22, 2008.

Affected ADs

- (b) None.

Applicability

- (c) This AD applies to Boeing Model 747 airplanes and Model 767 airplanes, certified in any category, equipped with General Electric CF6-80C2 or CF6-80A series engines.

Unsafe Condition

- (d) This AD results from reports of several in-flight engine flameouts, including multiple dual engine flameout events and one total power loss event, in ice-crystal icing conditions. We are issuing this AD to ensure that the flightcrew has the proper procedures to follow in certain icing conditions. These certain icing conditions could cause a multiple engine flameout during flight without the ability of the engines to be relit, and consequent forced landing of the airplane.

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.

Airplane Flight Manual (AFM) Revision

(f) Within 14 days after the effective date of this AD, revise the Limitations Section of the Boeing 747 or 767 AFM, as applicable, to include the following statement. This may be done by inserting a copy of this AD into the AFM.

"Prior to descent in visible moisture and TAT less than 10 °C, including SAT less than -40 °C, nacelle anti-ice switch must be in the ON position."

Note 1: When a statement identical to that in paragraph (f) of this AD has been included in the general revisions of the AFM, the general revisions may be inserted into the AFM, and the copy of this AD may be removed from the AFM.

Alternative Methods of Compliance (AMOCs)

(g)(1) The Manager, Seattle Aircraft Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Issued in Renton, Washington, on March 27, 2008.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0406; Directorate Identifier 2007-NM-196-AD]

RIN 2120-AA64

Airworthiness Directives; Airbus Model A310 Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.