

**Alternative Methods of Compliance (AMOCs)**

(h)(1) The Manager, Seattle ACO, FAA, ATTN: Sulmo Mariano, Aerospace Engineer, Propulsion Branch, ANM-140S, 1601 Lind Avenue SW., Renton, Washington 98057-3356; telephone (425) 917-6501; fax (425) 917-6590; has the authority to approve AMOCs for this AD, if requested using 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 January 18, 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-2008-0090; Directorate Identifier 2007-NM-312-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Boeing Model 747 Airplanes**

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

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for certain Boeing Model 747 airplanes. This proposed AD would require measuring the electrical bond resistance between the motor operated valve (MOV) actuators and airplane structure for the main, center, auxiliary, and horizontal stabilizer fuel tanks as applicable, and corrective action if necessary. This proposed AD would also require a revision to the FAA-approved maintenance program to incorporate airworthiness limitation (AWL) No. 28-AWL-21 or AWL No. 28-AWL-27, as applicable. This proposed AD results from fuel system reviews conducted by the manufacturer. We are proposing this AD to prevent electrical current from flowing through a MOV actuator into a fuel tank, which could create a potential ignition source inside the fuel tank. This condition, in combination with flammable fuel vapors, could result in a

fuel tank explosion and consequent loss of the airplane.

**DATES:** We must receive comments on this proposed AD by March 17, 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:** Sulmo Mariano, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6501; 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-2008-0090; Directorate Identifier 2007-NM-312-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://](http://www.regulations.gov)

[www.regulations.gov](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**

The FAA has examined the underlying safety issues involved in fuel tank explosions on several large transport airplanes, including the adequacy of existing regulations, the service history of airplanes subject to those regulations, and existing maintenance practices for fuel tank systems. As a result of those findings, we issued a regulation titled "Transport Airplane Fuel Tank System Design Review, Flammability Reduction and Maintenance and Inspection Requirements" (66 FR 23086, May 7, 2001). In addition to new airworthiness standards for transport airplanes and new maintenance requirements, this rule included Special Federal Aviation Regulation No. 88 ("SFAR 88," Amendment 21-78, and subsequent Amendments 21-82 and 21-83).

Among other actions, SFAR 88 requires certain type design (i.e., type certificate (TC) and supplemental type certificate (STC)) holders to substantiate that their fuel tank systems can prevent ignition sources in the fuel tanks. This requirement applies to type design holders for large turbine-powered transport airplanes and for subsequent modifications to those airplanes. It requires them to perform design reviews and to develop design changes and maintenance procedures if their designs do not meet the new fuel tank safety standards. As explained in the preamble to the rule, we intended to adopt airworthiness directives to mandate any changes found necessary to address unsafe conditions identified as a result of these reviews.

In evaluating these design reviews, we have established four criteria intended to define the unsafe conditions associated with fuel tank systems that require corrective actions. The percentage of operating time during which fuel tanks are exposed to flammable conditions is one of these criteria. The other three criteria address the failure types under evaluation: Single failures, single failures in combination with a latent condition(s), and in-service failure experience. For all four criteria, the evaluations included consideration of previous actions taken that may mitigate the need for further action.

We have determined that the actions identified in this AD are necessary to reduce the potential of ignition sources inside fuel tanks, which, in combination

with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

Boeing has found that, under specific conditions, it is possible for electrical current to flow through a motor operated valve (MOV) actuator into a fuel tank, which could create a potential ignition source inside the fuel tank. This condition, if not corrected, in combination with flammable fuel vapors could result in a fuel tank explosion and consequent loss of the airplane.

**Relevant Service Information**

We have reviewed Boeing Alert Service Bulletin 747-28A2292, dated September 14, 2007, for Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. The service bulletin describes procedures for measuring the electrical bond resistance between the MOV actuators and airplane structure for the main, center, and auxiliary fuel tanks, and corrective action if necessary. The corrective action includes reworking the index plate and cleaning the surface of the adapter plate and airplane structure as necessary.

We have also reviewed Boeing Alert Service Bulletin 747-28A2294, dated September 21, 2007, for Model 747-400 series airplanes equipped with an active horizontal stabilizer fuel tank. The service bulletin describes procedures for measuring the electrical bond resistance between the MOV actuators and airplane structure for the horizontal stabilizer fuel tank, and corrective action if necessary. The corrective action includes reworking the index plate and cleaning the surface of the

adapter plate and airplane structure as necessary.

We have also reviewed the Boeing 747-100/200/300/SP Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-13747-CMR, Revision January 2007 (hereafter referred to as "Document D6-13747-CMR"). (For the purposes of Document D6-13747-CMR, the Model 747SR series airplane is basically a Model 747-100 series airplane with certain modifications to improve fatigue life.) Section D of Document D6-13747-CMR describes new AWLs for fuel tank systems. The AWLs include:

- AWL inspections, which are periodic inspections of certain features for latent failures that could contribute to an ignition source.
- Critical design configuration control limitations (CDCCLs), which are limitation requirements to preserve a critical ignition source prevention feature of the fuel tank system design that is necessary to prevent the occurrence of an unsafe condition. The purpose of a CDCCL is to provide instruction to retain the critical ignition source prevention feature during configuration change that may be caused by alterations, repairs, or maintenance actions. A CDCCL is not a periodic inspection.

Section D of Document D6-13747-CMR adds new fuel system AWL No. 28-AWL-21, which is a CDCCL to maintain the design features of the MOV actuator.

We have also reviewed the Boeing 747-400 Maintenance Planning Data (MPD) Document, D621U400-9, Section 9, Revision December 2006 R1 (hereafter referred to as the "Boeing 747-400 MPD"). Subsection D of the Boeing 747-

400 MPD adds new fuel system AWL No. 28-AWL-27, which is a CDCCL to maintain the design features of the MOV actuator.

**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 the following actions:

- Measuring the electrical bond resistance between the MOV actuators and airplane structure for the main, center, auxiliary, and horizontal stabilizer fuel tanks as applicable, and corrective action if necessary.
- Revising the FAA-approved maintenance program to incorporate AWL No. 28-AWL-21, which would require maintaining the design features of the MOV actuator on Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes.
- Revising the FAA-approved maintenance program to incorporate AWL No. 28-AWL-27, which would require maintaining the design features of the MOV actuator on Model 747-400, 747-400D, and 747-400F series airplanes.

**Costs of Compliance**

We estimate that this proposed AD would affect 300 airplanes of U.S. registry. The following table provides the estimated costs, at an average labor rate of \$80 per hour, for U.S. operators to comply with this proposed AD.

**ESTIMATED COSTS**

Action	Work hours	Parts	Cost per product	Fleet cost
Measurements .....	Up to 447 .....	Up to \$350 .....	Up to \$36,110 .....	Up to \$10,833,000.
Maintenance program revision .....	1 .....	None .....	\$80 .....	\$24,000.

**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), 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.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

#### 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 AD:

**Boeing:** Docket No. FAA-2008-0090; Directorate Identifier 2007-NM-312-AD.

#### Comments Due Date

(a) We must receive comments by March 17, 2008.

#### Affected ADs

(b) None.

#### Applicability

(c) This AD applies to Boeing Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes, certificated in any category; as identified in Boeing Alert Service Bulletin 747-28A2292, dated September 14, 2007.

**Note 1:** This AD requires revisions to certain operator maintenance documents to include new inspections. Compliance with these inspections is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by these inspections, the operator may not be able to accomplish the inspections described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval for an alternative method of compliance according to paragraph (j) of this AD. The request should include a description of changes to the required inspections that will ensure the continued operational safety of the airplane.

#### Unsafe Condition

(d) This AD results from fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent electrical current from flowing through a motor operated valve (MOV) actuator into a fuel tank, which could create a

potential ignition source inside the fuel tank. This condition, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

#### Compliance

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

#### Measurement and Corrective Action

(f) For all airplanes: Within 60 months after the effective date of this AD, measure the electrical bond resistance between the MOV actuators and airplane structure for the main, center, and auxiliary fuel tanks as applicable, and do all the applicable corrective actions, by accomplishing all of the applicable actions specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-28A2292, dated September 14, 2007. The corrective actions must be accomplished before further flight.

(g) For Model 747-400 series airplanes identified in paragraph 1.A of Boeing Alert Service Bulletin 747-28A2294, dated September 21, 2007: Within 60 months after the effective date of this AD, measure the electrical bond resistance between the MOV actuators and airplane structure for the horizontal stabilizer fuel tanks, and do all the applicable corrective actions, by accomplishing all of the applicable actions specified in the Accomplishment Instructions of the service bulletin. The corrective actions must be accomplished before further flight.

#### Maintenance Program Revision

(h) For Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes: Concurrently with accomplishing the actions required by paragraph (f) of this AD, revise the FAA-approved maintenance program by incorporating AWL No. 28-AWL-21 of Section D of the Boeing 747-100/200/300/SP Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-13747-CMR, Revision January 2007. Accomplishing the revision in accordance with a later revision of Document D6-13747-CMR is an acceptable method of compliance if the revision is approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA.

(i) For Model 747-400, 747-400D, and 747-400F series airplanes: Concurrently with accomplishing the applicable actions required by paragraph (f) and (g) of this AD, revise the FAA-approved maintenance program by incorporating

AWL No. 28-AWL-27 of Subsection D of the Boeing 747-400 Maintenance Planning Data (MPD) Document, D621U400-9, Section 9, Revision December 2006 R1. Accomplishing the revision in accordance with a later revision of the MPD is an acceptable method of compliance if the revision is approved by the Manager, Seattle ACO, FAA.

#### Alternative Methods of Compliance (AMOCs)

(j)(1) The Manager, Seattle ACO, FAA, ATTN: Sulmo Mariano, Aerospace Engineer, Propulsion Branch, ANM-140S, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6501; fax (425) 917-6590; has the authority to approve AMOCs for this AD, if requested using 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 January 14, 2008.

**Stephen P. Boyd,**

*Assistant Manager, Transport Airplane Directorate, Aircraft Certification Service.*

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Directorate Identifier 2000-NM-120-AD]

RIN 2120-AA64

#### Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB-120 Series Airplanes

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Proposed rule; withdrawal.

**SUMMARY:** This action withdraws a notice of proposed rulemaking (NPRM) that proposed a new airworthiness directive (AD), applicable to certain EMBRAER Model EMB-120 series airplanes. That action would have required repetitive calibration testing of potentiometers to detect noisy signals, replacement of only those with noisy signals, and reporting results of the