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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; Amendment 39-16627; AD 2011-06-03]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 747 Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD requires 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; revising the maintenance program to incorporate airworthiness limitation (AWL) No. 28-AWL-21 or AWL No. 28-AWL-27, as applicable; and replacing production-installed laminate phenolic spacers with metallic spacers between the fuel jettison MOV and the airplane structure, as applicable. This AD was prompted by fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent electrical current from flowing through an 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: This AD is effective April 26, 2011.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of April 26, 2011.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

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 AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Tung Tran, Aerospace Engineer, Propulsion Branch, Seattle Aircraft Certification Office, ANM-140S, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; phone: 425-917-6505; fax: 425-917-6590; e-mail: tung.tran@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to the specified products. That SNPRM published in the Federal Register on November 19, 2010 (75 FR 70863). That SNPRM proposed to 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; revising the maintenance program to incorporate airworthiness limitation (AWL) No. 28-AWL-21 or AWL No. 28-AWL-27, as applicable; and replacing production-installed laminate phenolic spacers with metallic spacers between the fuel jettison MOV and the airplane structure, as applicable.

Actions Since Supplemental NPRM Was Issued

Since the supplemental NPRM was issued, Boeing issued Service Bulletin 747-28A2292, Revision 3, dated December 9, 2010. The changes described in this service bulletin are minor and editorial in nature. Paragraphs (c) and (g) of this AD have been revised to refer to Revision 3 of this service bulletin. In addition, credit for accomplishing the actions in Boeing Service Bulletin 747-28A2292, Revision 2, dated May 13, 2010, has been included in paragraph (o) of this AD.

Comments

We gave the public the opportunity to participate in developing this AD. We have considered the comment received. Boeing supports the NPRM.

Conclusion

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting the AD as proposed—except for the changes that were described above. We have determined that these changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Costs of Compliance

We estimate that this AD affects 222 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Measurement	Up to 7 work-hours X \$85 per hour = Up to \$595	Up to \$350	Up to \$945	Up to \$209,790
Replacement (Up to 60 airplanes)	Up to 4 work-hours X \$85 per hour = Up to \$340	\$1,305	Up to \$1,645	Up to \$98,700
Maintenance program revision	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$18,870

We estimate the following costs to do any necessary modification that would be required based on the results of the proposed inspection. We have no way of determining the number of aircraft that might need this modification.

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Change electrical bond and rework part contact surface	436 work-hours X \$85 per hour = \$37,060	\$Up to \$35,760	Up to \$72,820

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

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),
- (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, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA 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 (AD):



2011-06-03 The Boeing Company: Amendment 39-16627; Docket No. FAA-2008-0090; Directorate Identifier 2007-NM-312-AD.

Effective Date

(a) This AD is effective April 26, 2011.

Affected ADs

(b) None.

Applicability

(c) This AD applies to The Boeing Company 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 Service Bulletin 747-28A2292, Revision 3, dated December 9, 2010.

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 (AMOC) according to paragraph (q) 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.

Subject

(d) Air Transport Association (ATA) of America Code 28: Fuel.

Unsafe Condition

(e) This AD results from fuel system reviews conducted by the manufacturer. The Federal Aviation Administration is 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

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

Measurement, Corrective Action, and Replacement

(g) Within 60 months after the effective date of this AD, do the actions required by paragraphs (g)(1) and (g)(2) of this AD, as applicable.

(1) Measure the electrical bond resistance between the MOV actuators and the airplane structure for the main, center, and auxiliary fuel tanks, as applicable; and do all applicable corrective actions; by accomplishing all of the applicable actions in the Accomplishment Instructions of Boeing Service Bulletin 747-28A2292, Revision 3, dated December 9, 2010. The corrective actions must be accomplished before further flight.

(2) For airplanes in Groups 12, 16, 17, 18, and 19, as identified in Boeing Service Bulletin 747-28A2292, Revision 3, dated December 9, 2010: Within 60 months after the effective date of this AD, replace production-installed laminate phenolic spacers with metallic spacers, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-28A2292, Revision 3, dated December 9, 2010.

(h) For airplanes identified in Boeing Service Bulletin 747-28A2294, Revision 1, dated March 5, 2009: 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 (HST), and do all the applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-28A2294, Revision 1, dated March 5, 2009. The corrective actions must be accomplished before further flight.

Deactivation of the HST

(i) For airplanes identified in Boeing Service Bulletin 747-28A2294, Revision 1, dated March 5, 2009: Deactivation of the HST, in accordance with the applicable Boeing service information specified in table 1 of this AD, terminates the requirements of paragraph (h) of this AD, except as provided by paragraph (j) of this AD. Deactivation of the HST before the effective date of this AD in accordance with the applicable service information specified in table 2 of this AD also terminates the requirements of paragraph (h) of this AD, except as provided by paragraph (j) of this AD.

Table 1—Deactivation Service Information

Boeing –	Revision –	Dated –
Service Bulletin 747-28-2265	Original	February 22, 2006
Service Bulletin 747-28-2272	Original	February 21, 2006
Service Bulletin 747-28-2274	1	May 21, 2008
Service Bulletin 747-28-2275	4	February 2, 2009
Service Bulletin 747-28-2279	2	October 16, 2007
Service Bulletin 747-28-2285	3	August 30, 2007
Service Bulletin 747-28-2293	2	March 4, 2008
Service Bulletin 747-28-2295	2	January 19, 2009
Service Bulletin 747-28-2296	Original	July 13, 2007
Service Bulletin 747-28-2300	1	June 2, 2008
Service Bulletin 747-28-2314	Original	December 9, 2008

Table 2–Deactivation Credit Service Information

Boeing –	Revision –	Dated –
Service Bulletin 747-28-2274	Original	March 13, 2006
Service Bulletin 747-28-2275	Original	June 12, 2006
Service Bulletin 747-28-2275	1	March 16, 2007
Service Bulletin 747-28-2275	2	July 2, 2007
Service Bulletin 747-28-2275	3	March 11, 2008
Service Bulletin 747-28-2279	Original	June 12, 2006
Service Bulletin 747-28-2279	1	May 25, 2007
Service Bulletin 747-28-2285	Original	January 23, 2007
Service Bulletin 747-28-2285	1	May 9, 2007
Service Bulletin 747-28-2285	2	August 3, 2007
Service Bulletin 747-28-2293	Original	May 9, 2007
Service Bulletin 747-28-2293	1	August 29, 2007
Service Bulletin 747-28-2295	Original	November 17, 2006
Service Bulletin 747-28-2295	1	March 20, 2008
Service Bulletin 747-28-2300	Original	January 16, 2008

Reactivation of the HST

(j) For airplanes identified in Boeing Service Bulletin 747-28A2294, Revision 1, dated March 5, 2009, on which the HST is reactivated, the HST must be reactivated in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA. For any airplane on which the HST is reactivated, the requirements of paragraphs (h) and (l) of this AD must be done before further flight following the reactivation, or within 60 months after the effective date of this AD, whichever occurs later. For a reactivation method to be approved, the reactivation method must meet the certification basis of the airplane, and the approval must specifically reference this AD.

Maintenance Program Revision

(k) 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 (g)(1) of this AD, revise the maintenance program by incorporating airworthiness limitation (AWL) No. 28-AWL-21 of Section D of Boeing 747-100/200/300/SP Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-13747-CMR, Revision March 2008.

(l) For Model 747-400, 747-400D, and 747-400F series airplanes: Concurrently with accomplishing the actions required by paragraph (g)(1) of this AD, revise the maintenance program by incorporating AWL No. 28-AWL-27 of Subsection D of Boeing 747-400 Maintenance Planning Data (MPD) Document, Section 9, D621U400-9, Revision December 2009.

No Alternative Critical Design Configuration Control Limitations (CDCCLs)

(m) After accomplishing the applicable action required in paragraph (k) or (l) of this AD, no alternative CDCCLs may be used unless the CDCCLs are approved as an AMOC in accordance with the procedures specified in paragraph (q) of this AD.

Terminating Action for Maintenance Program Revision

(n) For Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747SR, and 747SP series airplanes: Incorporating AWL No. 28-AWL-21 into the maintenance program in accordance with paragraph (g) of AD 2008-10-07, Amendment 39-15513; or AD 2008-10-07 R1, Amendment 39-16070; terminates the action required by paragraph (k) of this AD.

Credit for Actions Accomplished in Accordance With Previous Service Information

(o) Actions done before the effective date of this AD in accordance with Boeing Alert Service Bulletin 747-28A2294, dated September 21, 2007; and Boeing Service Bulletin 747-28A2292, Revision 2, dated May 13, 2010; are acceptable for compliance with the corresponding requirements of this AD.

Incorporation of Previous Issues of Airworthiness Limitation (AWL)

(p) Incorporation of AWL No. 28-AWL-21 of Section D of the Boeing 747-100/200/300/SP Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-13747-CMR, Revision January 2007, September 2007, or January 2008, is acceptable for compliance with the corresponding requirements of this AD if done before the effective date of this AD.

Alternative Methods of Compliance (AMOCs)

(q)(1) The Manager, Seattle ACO, 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 ACO, send it to the attention of the person identified in the Related Information section of this AD. Information may be e-mailed to: 9-ANM-Seattle-ACO-AMOC-Requests@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.

Related Information

(r) For more information about this AD, contact Tung Tran, Aerospace Engineer, Propulsion Branch, Seattle Aircraft Certification Office, ANM-140S, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; phone: 425-917-6505; fax: 425-917-6590; e-mail: tung.tran@faa.gov.

Material Incorporated by Reference

(s) You must use the applicable service information contained in table 3 of this AD to do the actions required by this AD, unless the AD specifies otherwise. If you accomplish the optional terminating action specified in this AD, you must use the applicable service information specified in table 4 of this AD, unless the AD specifies otherwise.

Table 3—Material Incorporated by Reference for Required Actions

Document	Revision	Date
Boeing Service Bulletin 747-28A2292	3	December 9, 2010
Boeing Service Bulletin 747-28A2294	1	March 5, 2009
Section 9 of Boeing 747-100/200/300/SP Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-13747-CMR		March 2008
Section 9 of Boeing 747-400 Maintenance Planning Data (MPD) Document, Section 9, D621U400-9		December 2009

Table 4—Material Incorporated by Reference for Optional Terminating Action

Boeing –	Revision –	Dated –
Service Bulletin 747-28-2265	Original	February 22, 2006
Service Bulletin 747-28-2272	Original	February 21, 2006
Service Bulletin 747-28-2274	1	May 21, 2008
Service Bulletin 747-28-2275	4	February 2, 2009
Service Bulletin 747-28-2279	2	October 16, 2007
Service Bulletin 747-28-2285	3	August 30, 2007
Service Bulletin 747-28-2293	2	March 4, 2008
Service Bulletin 747-28-2295	2	January 19, 2009
Service Bulletin 747-28-2296	Original	July 13, 2007
Service Bulletin 747-28-2300	1	June 2, 2008
Service Bulletin 747-28-2314	Original	December 9, 2008

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at an NARA facility, call 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on February 23, 2011.
Kalene C. Yanamura,
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.
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