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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-0035; Directorate Identifier 2009-NM-066-AD; Amendment 39-16447; AD 2010-20-12]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 747-400, 747-400D, and 747-400F Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for Model 747-400, 747-400D, and 747-400F series airplanes. This AD requires installing a hot short protector (HSP) for the fuel quantity indicating system (FQIS) of the center fuel tank and, for certain airplanes, the horizontal stabilizer fuel tank. This AD results from fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent an electrical hot short from a source outside the FQIS to the densitometer wiring from causing failure of the FQIS densitometer resistors, which could result in an ignition source inside the center or horizontal stabilizer fuel tanks. An ignition source, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane. This AD is effective November 5, 2010.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of November 5, 2010.

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>.

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 (telephone 800-647-5527) is the 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: Georgios Roussos, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6482; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to certain Model 747-400, 747-400D, and 747-400F series airplanes. That NPRM was published in the Federal Register on February 11, 2010 (75 FR 6821). That NPRM proposed to require installing a hot short protector for the fuel quantity indicating system of the center fuel tank and, for certain airplanes, the horizontal stabilizer fuel tank.

Comments

We gave the public the opportunity to participate in developing this AD. We considered the comments received from The Boeing Company.

Request To Revise Preamble of the NPRM

Boeing requests the following changes to sections of the preamble of the NPRM:

- In the section "Relevant Service Information," revise "We have received Boeing Service Bulletin 74728A2266, Revision 1, dated December 10, 2009 (for the CWTs)" to "We have received Boeing Service Bulletin 74728A2266, Revision 1, dated December 10, 2009 (for all airplanes)," because there are no configurations of the Model 747-400 without the center fuel tank.
- Revise "Relevant Service Information" to add the phrase "(for airplanes with horizontal stabilizer tanks)" to "Boeing Alert Service Bulletin 747-28A2267, dated December 18, 2008." Boeing states that this service bulletin adds a hot short protector on the horizontal stabilizer tank (HST).

We acknowledge the commenter's requests. While the commenter's suggestions may clarify information that the NPRM contained, these sections are not included in the final rule. As a result, we have not changed the AD in regard to these issues.

Request To Clarify the FQIS Wire Separation Requirement

Boeing requests that we clarify the requirement of the FQIS wire separation from the wiring of the other systems as a result of implementing the actions required by this AD. Boeing requests that we revise the Discussion section of the NPRM to state that after the actions required by the AD are implemented, then no further actions are required to separate the FQIS wire from the wiring of other systems.

We agree with the commenter that no action is required for the undisturbed portion of the densitometer wiring from the HSP to the fuel quantity processor unit at the electrical equipment bay. This final rule requires the installation of the HSP according to the accomplishment instructions of the applicable service bulletins. No part of this AD implies or requires action for the undisturbed portion of the densitometer wiring. Therefore, we have not changed the final rule in regard to this issue.

Request To Add Service Bulletin to Credit Paragraph

Boeing requests that we revise paragraph (h) of the NPRM to include Boeing Alert Service Bulletin 747-28A2266, Revision 1, dated December 10, 2009.

We do not agree to revise the AD, because such a revision is unnecessary. Paragraph (h) of this AD exists to give credit for actions accomplished before the effective date of this AD using Boeing Alert Service Bulletin 747-28A2266, dated December 18, 2008, and paragraph (g) of this AD requires that Revision 1 of this service bulletin is used for the action specified in that paragraph. We have not changed the AD in regard to this issue.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD as proposed.

Costs of Compliance

We estimate that this AD affects 80 airplanes of U.S. registry. The following table provides the estimated costs for U.S. operators to comply with this AD.

Table – Estimated costs

Action	Work hours	Average labor rate per hour	Parts	Cost per product	Fleet cost
Installation ¹	6 to 17	\$85	\$15,821 to \$30,650	\$16,331 to \$32,095	\$1,306,480 to \$2,567,600

¹Work hours and parts costs depend on airplane configuration.

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), 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, 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):



2010-20-12 The Boeing Company: Amendment 39-16447; Docket No. FAA-2010-0035; Directorate Identifier 2009-NM-066-AD.

Effective Date

- (a) This AD is effective November 5, 2010.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to The Boeing Company Model 747-400, 747-400D, and 747-400F series airplanes, certificated in any category; as identified in the service bulletins listed in paragraphs (c)(1) and (c)(2) of this AD.

- (1) Boeing Service Bulletin 747-28A2266, Revision 1, dated December 10, 2009.
(2) Boeing Alert Service Bulletin 747-28A2267, dated December 18, 2008.

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 an electrical hot short from a source outside the fuel quantity indicating system (FQIS) to the densitometer wiring from causing failure of the FQIS densitometer resistors, which could result in an ignition source inside the center or horizontal stabilizer fuel tanks. An ignition source, 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.

Installation of Hot Short Protector (HSP)

(g) Within 60 months after the effective date of this AD: Do the applicable installations of the HSP specified in paragraphs (g)(1) and (g)(2) of this AD.

Note 1: Boeing Service Bulletin 747-28A2266, Revision 1, dated December 10, 2009; and Boeing Alert Service Bulletin 747-28A2267, dated December 18, 2008; refer to Cinch Service Bulletin CN1036-28-01, Revision C, dated January 18, 2007, as an additional source of guidance for

installing the HSP in the fuel tanks which must be done before or concurrently with the actions specified in Boeing Service Bulletin 747-28A2266, Revision 1, dated December 10, 2009; and Boeing Alert Service Bulletin 747-28A2267, dated December 18, 2008.

(1) For all airplanes: Install the HSP in the center wing tank, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-28A2266, Revision 1, dated December 10, 2009.

(2) For airplanes identified in Boeing Alert Service Bulletin 747-28A2267, dated December 18, 2008: Install the HSP in the horizontal stabilizer tank, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-28A2267, dated December 18, 2008.

Credit for Installation Previously Accomplished in Accordance With Previous Issue of Service Bulletin

(h) Actions accomplished before the effective date of this AD according to Boeing Alert Service Bulletin 747-28A2266, dated December 18, 2008, are considered acceptable for compliance with the corresponding action specified in this AD, provided that Cinch Service Bulletin CN1036-28-01, Revision C, dated January 18, 2007, is used as an additional source of guidance.

Alternative Methods of Compliance (AMOCs)

(i)(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Georgios Roussos, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6482; fax (425) 917-6590. Or, e-mail information to 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(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 principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office. The AMOC approval letter must specifically reference this AD.

Material Incorporated by Reference

(j) You must use Boeing Service Bulletin 747-28A2266, Revision 1, dated December 10, 2009; or Boeing Alert Service Bulletin 747-28A2267, dated December 18, 2008; as applicable; to do the actions required by this AD, unless the AD specifies otherwise.

(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 NARA, 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 September 16, 2010.
Robert D. Breneman,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.