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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-1065; Directorate Identifier 2011-NM-007-AD; Amendment 39-17175; AD 2012-17-12]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 747-400 series airplanes. This AD was prompted by reports of water leaking into electrical and electronic equipment in the main equipment center (MEC). This AD requires modifying the floor panels; removing drains; installing floor supports, floor drain trough doublers, drain troughs, and drains; and sealing and taping the floor panels. We are issuing this AD to prevent water from entering the MEC, which could result in an electrical short and potential loss of several functions essential for safe flight.

DATES: This AD is effective October 11, 2012.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of October 11, 2012.

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; phone: 206-544-5000, extension 1; fax: 206-766-5680; 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: Francis Smith, Aerospace Engineer, Cabin Safety & Environmental Systems Branch, ANM-150S, Seattle Aircraft Certification Office (ACO), FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: 425-917-6596; fax: 425-917-6590; email: Francis.Smith@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on October 11, 2011 (76 FR 62667). That NPRM proposed to require modifying the floor panels; removing drains; installing floor supports, floor drain trough doublers, drain troughs, and drains; and sealing and taping the floor panels.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comment received on the proposal (76 FR 62667, October 11, 2011) and the FAA's response to each comment.

Concurrence With NPRM (76 FR 62667, October 11, 2011)

Boeing stated that it has reviewed the NPRM (76 FR 62667, October 11, 2011) and concurs with the contents of the proposed rule.

Request To Withdraw NPRM (76 FR 62667, October 11, 2011): Unsafe Condition Already Addressed

UPS stated it believes the NPRM (76 FR 62667, October 11, 2011) is unnecessary and increases the economic burden on operators because the unsafe condition of water leaking into the MEC is already addressed in AD 2011-16-06, Amendment 39-16764 (76 FR 47427, August 5, 2011). UPS noted that an intact MEC drip shield should prevent water from leaking onto the electronic and electrical equipment, thereby eliminating the need for additional rulemaking.

UPS also noted that it finds the NPRM (76 FR 62667, October 11, 2011) problematic because it establishes an AD-mandated configuration for floor panel sealing in the nose section of Model 747-400BCF and 747-400F airplanes that is different from the floor sealing criteria for the center and aft sections of the same airplanes.

We do not agree with the request to withdraw the NPRM (76 FR 62667, October 11, 2011). While we recognize that most of the airplanes affected by this AD are also affected by AD 2011-16-06, Amendment 39-16764 (76 FR 47427, August 5, 2011), water intrusion into the MEC addressed by the NPRM is in locations and by means different than those addressed by AD 2011-16-06. AD 2011-16-06 addresses water intrusion that migrates through cracked drip shields into the exhaust plenum and the MEC, and affects stations 117 and 118 for certain Model 747-400BCF and 747-400F airplanes. The NPRM addresses water intrusion through main deck panels, fasteners and floor fittings, and affects stations 210 and 530 for certain Model 747-400BCF and -400F airplanes.

We found the safety risk to be sufficient enough to require a specific floor sealing criteria to the affected areas. While a possible loss of uniform floor sealing criteria throughout the airplane may result, this AD action is necessary to adequately address the stated unsafe condition to the vulnerable

areas. Operators seeking to establish more uniform floor panel sealing criteria may submit a request for an alternative method of compliance (AMOC) as specified in paragraph (h) of the AD. We have not changed the final rule in this regard.

Request To Withdraw NPRM (76 FR 62667, October 11, 2011): Low Risk of Water Intrusion

In addition, UPS stated that the probability for water intrusion on the forward section of Model 747-400BCF airplanes is overstated because these models do not have a nose cargo door like Model 747-400F airplanes. Therefore, Model 747-400BCF airplanes are not as susceptible to moisture entering the forward area of the main deck cargo compartment during cargo loading in adverse weather conditions.

We do not agree. Both water intrusion safety concerns were studied separately based on reports submitted from multiple operators. The data were reviewed based on the location and causes of the water intrusion. Based on the frequency of reported failures, severity of outcome, and airplane usage, both studies showed an unacceptable and unsafe condition if left uncorrected. Addressing only one source of water intrusion neither precludes nor diminishes the probability of the other. We have not changed the final rule in this regard.

Request To Withdraw NPRM (76 FR 62667, October 11, 2011): Revise Operational Procedures

UPS also stated that proper ground operational procedures will significantly reduce water accumulation in the nose area, either through the main entry door or on pallets or containers.

We infer that UPS requested withdrawal of the NPRM (76 FR 62667, October 11, 2011) in favor of revised ground operational procedures. We do not agree that revising operational procedures to avoid the identified unsafe condition is a consistent or reliable method in precluding what is inherently a safety risk through design. In determining a corrective action, Boeing and the FAA agreed that a design solution, instead of an operational solution, provides the best method to address the identified unsafe condition. No change to the final rule is necessary.

Request To Withdraw NPRM (76 FR 62667, October 11, 2011): Conflict With Aircraft Maintenance Manual (AMM)

UPS also stated that Figures 18 and 23 of Boeing Special Attention Service Bulletin 747-25-3586, dated November 12, 2010, specify that different materials be used in lieu of those called out in Section 53-21-02 of the Boeing Model 747-400 AMM. UPS stated that by not allowing operators to use the AMM, the NPRM (76 FR 62667, October 11, 2011) would put the UPS mechanics in an untenable situation. Mechanics following AMM procedures in the nose area of these two airplanes would unknowingly be altering an AD-mandated configuration.

We do not agree because an AD-mandated configuration always takes precedence over AMMs. When there is a conflict between an AD requirement and service document, the operator must always comply with the requirements of the AD, as explicitly stated in the requirements of Federal Aviation Regulations 14 CFR 39.27. We have not changed the final rule in this regard.

Request To Allow Alternative Floor Sealing Procedures

UPS noted that it and other operators have developed improved alternative floor panel sealing procedures based on years of operational experience with cargo aircraft. UPS stated that the NPRM (76 FR 62667, October 11, 2011) would mandate a Boeing floor sealing procedure that appears optimized for passenger aircraft flooring, which is not as effective as the procedures UPS uses today. UPS noted that this situation creates more of a regulatory problem with maintaining an AD-mandated condition than a safety of flight condition, as there are many ways to adequately seal the floor panels to prevent moisture intrusion. UPS noted that obtaining an alternative method of compliance

(AMOC) approval for a floor sealing procedure presents another undue regulatory burden on operators.

We recognize the different methods operators currently use for floor panel sealing procedures to mitigate this safety concern. However, the frequency of failures reported when using these different methods underscores the importance of providing an acceptable method for operators to follow in reducing the safety risk. Under the provisions of paragraph (h) of the final rule, we will consider requests for approval of an AMOC if sufficient data are submitted to substantiate that alternative method of sealing floor panels to prevent moisture intrusion would provide an acceptable level of safety. We have not changed the final rule in this regard.

Request for Revised Service Information

UPS submitted the following list of technical errors found in Boeing Special Attention Service Bulletin 747-25-3586, dated November 12, 2010, and requested that a revision to this service information be issued to address them.

The fastener quantities specified in the fastener table in figure 7 are incorrect.

Figure 17 specifies installing the modified floor panels with new fasteners, followed by figure 18, which specifies removing and reinstalling all floor panels between station 140 and station 640. Figure 18 should specify excluding those floor panels installed as shown in figure 17.

Figure 8, Detail G, and figure 14, Detail K, should show the doubler and the support, not just the doubler.

We acknowledge and agree that there are certain technical errors identified in the figures of Boeing Special Attention Service Bulletin 747-25-3586, dated November 12, 2010. We have contacted Boeing and it has acknowledged the list of technical issues identified. We consider Boeing Special Attention Service Bulletin 747-25-3586, dated November 12, 2010, adequate to address the identified unsafe condition; and this service information was validated by Boeing on an airplane. Different operators may see different numbers of necessary fasteners and will have to submit an AMOC if their configuration deviates from Boeing Special Attention Service Bulletin 747-25-3586, dated November 12, 2010, instructions. Boeing stated it will address the issues in a Boeing service bulletin revision or other service document to provide clarity in the work steps. We have not changed the final rule in this regard.

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 12 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
Floor panel reworking and sealing; installing drains, drain trough doublers, and drain troughs.	Up to 644 work-hours × $85 per hour = $54,740.	$64,033	Up to $118,773	Up to $1,425,276.

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

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):

2012-17-12 The Boeing Company: Amendment 39-17175; Docket No. FAA-2011-1065; Directorate Identifier 2011-NM-007-AD.

(a) Effective Date

This AD is effective October 11, 2012.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 747-400 series airplanes, certificated in any category, as identified in Boeing Special Attention Service Bulletin 747-25-3586, dated November 12, 2010.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 25, Equipment and Furnishings.

(e) Unsafe Condition

This AD was prompted by reports of water leaking into electrical and electronic equipment in the main equipment center. We are issuing this AD to prevent water from entering the main equipment center, which could result in an electrical short and potential loss of several functions essential for safe flight.

(f) Compliance

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

(g) Floor Panel Sealing

Within 24 months after the effective date of this AD: Modify the floor panels; remove drains; install floor supports, floor drain trough doublers, drain troughs, and drains; and seal and tape the floor panels; at the applicable locations; in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-25-3586, dated November 12, 2010.

(h) Alternative Methods of Compliance (AMOCs)

(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. 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 emailed 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.

(i) Related Information

For more information about this AD, contact Francis Smith, Aerospace Engineer, Cabin Safety & Environmental Systems Branch, ANM-150S, Seattle Aircraft Certification Office (ACO), FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: 425-917-6596; fax: 425-917-6590; email: Francis.Smith@faa.gov.

(j) Material Incorporated by Reference

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

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Special Attention Service Bulletin 747-25-3586, dated November 12, 2010.

(ii) Reserved.

(3) 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; phone: 206-544-5000, extension 1; fax: 206-766-5680; Internet: https://www.myboeingfleet.com.

(4) 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.

(5) 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/cfr/ibr-locations.html.

Issued in Renton, Washington, on August 22, 2012.

Ali Bahrami,

Manager, Transport Airplane Directorate,

Aircraft Certification Service.