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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2014-0429; Directorate Identifier 2014-NM-039-AD; Amendment 39-18151; AD 2015-09-05]

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 and 747-400F series airplanes. This AD was prompted by reports of cracking in the main equipment center (MEC) drip shield and exhaust plenum. This AD requires installing a fiberglass reinforcing overcoat on the MEC drip shield. We are issuing this AD to prevent water penetration into the MEC, which could result in an electrical short and potential loss of several functions essential for safe flight.

DATES: This AD is effective June 16, 2015.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of June 16, 2015.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0429.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0429; 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 Docket 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 and Environmental Systems Branch, ANM-150S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone: 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 by adding an AD that would apply to certain The Boeing Company Model 747-400 and 747-400F series airplanes. The NPRM published in the Federal Register on July 9, 2014 (79 FR 38799). The NPRM was prompted by reports of cracking in the MEC drip shield and exhaust plenum. The NPRM proposed to require installing a fiberglass reinforcing overcoat on the MEC drip shield. We are issuing this AD to prevent water penetration into the MEC, which could result in an electrical short and potential loss of several functions essential for safe flight.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM (79 FR 38799, July 9, 2014) and the FAA's response to each comment.

Request To Use Later Revision of the Service Information

Boeing requested that the latest pending revision of Boeing Alert Service Bulletin 747-25A3640 (i.e., Revision 1), be added to the NPRM (79 FR 38799, July 9, 2014). Boeing stated that illustrations shown in Figure 1 of the latest service information will clarify the repair location of the MEC drip shield.

We disagree with the commenter's request. We cannot include unapproved service information in the final rule as this would violate the Office of the Federal Register regulations for approving materials that are incorporated by reference. However, operators may request approval to use a later revision of the referenced service information as an alternative method of compliance (AMOC) under the provisions of paragraph (h)(1) of this AD. We have not changed this AD in this regard.

Request To Include Inspection and Repair Procedures for Cracks in the MEC Drip Shield

United Parcel Service (UPS) requested that the NPRM (79 FR 38799, July 9, 2014) be revised to add inspection and repair procedures for cracks in the MEC drip shield that do not appear in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-25A3640, dated January 8, 2014. UPS stated that the NPRM was issued to address drip shield cracks that were found incidentally during compliance with AD 2011-16-06, Amendment 39-16764 (76 FR 47427, August 5, 2011), but in areas not specifically addressed by AD 2011-16-06. UPS stated that due to the potential existence of cracks undetected during the accomplishment of AD 2011-16-06, UPS believes that a specific inspection is warranted to find and correct such damage. UPS stated that an inspection of the area for drip shield cracks would mitigate potential safety risks, which may necessitate further regulatory action.

We disagree with the commenter's request. Boeing and the FAA do not have evidence to suspect that other areas in the drip shield system are at risk; further, instructions are not available for additional locations to be inspected or procedures to repair detected cracks at those locations at this time. A visual inspection may not detect existing cracks in all areas of the drip shield, such as in the bonded seams.

We find that the required installation adequately addresses the identified unsafe condition. Adding inspection and repair procedures would increase the overall work required, and would provide only a negligible benefit to safety. We have not changed this final rule in this regard.

Request To Revise the Compliance Time

UPS requested that the compliance time be changed from 24 months to 72 months for Model 747-400 BCF airplanes on which the corrective actions have been done as required by AD 2012-17-12, Amendment 39-17175 (77 FR 54798, September 6, 2012), and AD 2011-16-06, Amendment 39-16764 (76 FR 47427, August 5, 2011). UPS stated that it believes the drip shield to be a secondary moisture protection for the MEC on Model 747-400 BCF airplanes due to the absence of steerable power drive units with drains above the drip shield in question. UPS stated that the safety risk of undetected cracking of the drip shield has been significantly mitigated due to the corrective actions required by ADs 2012-17-12 and 2011-16-06.

We disagree with the commenter's request. The drip shield is a primary barrier for moisture protection, designed to specifically prevent water from entering the MEC. While there may be other sources of water drainage in the Model 747-400 BCF configuration that may reduce the chance of water being channeled to the drip shield, there is still a likelihood of water reaching the MEC drip shield, and its failure exposes critical hardware directly to water damage.

In addition, compliance with AD 2012-17-12, Amendment 39-17175 (77 FR 54798, September 6, 2012), and AD 2011-16-06, Amendment 39-16764 (76 FR 47427, August 5, 2011), would not help mitigate the unsafe condition identified in this final rule because, although the ADs are related, the specified corrective actions are applicable to different unsafe conditions in different locations. AD 2012-17-12 requires that affected operators modify and seal the floor panels from body stations 140 to 640 to prevent water leakage between the panels. AD 2011-16-06 requires affected operators to install a fiberglass reinforcing overcoat on the drip shield in a location prone to cracks; that location is different from the location identified in this final rule.

The risks of each unsafe condition identified in AD 2012-17-12, Amendment 39-17175 (77 FR 54798, September 6, 2012); AD 2011-16-06, Amendment 39-16764 (76 FR 47427, August 5, 2011); and this final rule; were evaluated separately. The unsafe conditions and corresponding corrective actions are applicable to different groups of Model 747-400 airplanes, and although many are affected by more than one unsafe condition, all safety concerns identified were studied separately based on reports from multiple operators regarding multiple airplane configurations. Based on the frequency of reported failures, severity of outcome, and airplane usage, each study showed an unsafe condition if left uncorrected.

Addressing only one source of water intrusion would neither preclude nor diminish the probability of the other sources of water intrusion adversely affecting continued safe flight. For these reasons, we have not changed this final rule in this regard.

Request To Clarify Required for Compliance Statement in the Service Information

UPS requested clarification on the RC (required for compliance) statement found in paragraph (h)(4) of the NPRM (79 FR 38799, July 9, 2014). UPS asked whether the RC statement applies to all components of a step and whether other alternative procedures can be used in lieu of the accepted alternative procedure identified in each substep or steps in the figures.

We agree that clarification is necessary. Refer to FAA Advisory Circular (AC) No. 20-176A, dated June 16, 2014

([http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/979ddd1479e1ec6f86257cfc0052d4e9/\\$FILE/AC%2020-176A.PDF](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/979ddd1479e1ec6f86257cfc0052d4e9/$FILE/AC%2020-176A.PDF)). If the accomplishment step in the service information is labeled RC and has substeps or tasks with no paragraph designation under the labeled RC step, then all of the substeps or tasks must also be completed. In addition, if the accomplishment step in the service information is marked RC and states to do the work "in accordance with" a figure, drawing, or illustration, then all of the information in the figure, drawing, or illustration is mandatory.

If a step is marked RC and a procedure or document must be followed to accomplish a task in a service bulletin, the appropriate terminology to cite the procedure or document is "in accordance with." However, if a step is marked RC and a procedure or document may be followed to accomplish an action (e.g., the design approval holder's procedure or document may be used, but an FAA-accepted procedure could also be used), the appropriate terminology to use to cite the procedure or document is "refer to . . . as an accepted procedure." We have not changed this 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 this AD as proposed, except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (79 FR 38799, July 9, 2014) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (79 FR 38799, July 9, 2014).

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 747-25A3640, dated January 8, 2014. The service information describes procedures for installing a fiberglass reinforcing overcoat on the MEC drip shield. Refer to this service information for information on the procedures and compliance times. This service information is reasonably available; see ADDRESSES for ways to access this service information.

Costs of Compliance

We estimate that this AD affects 15 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
Installation of a fiberglass reinforcing overcoat on the MEC drip shield	36 work-hours × \$85 per hour = \$3,060	\$0	\$3,060	\$45,900

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):



2015-09-05 The Boeing Company: Amendment 39-18151; Docket No. FAA-2014-0429; Directorate Identifier 2014-NM-039-AD.

(a) Effective Date

This AD is effective June 16, 2015.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 747-400 and 747-400F airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-25A3640, dated January 8, 2014.

(d) Subject

Air Transport Association (ATA) of America Code 25, Equipment/Furnishings.

(e) Unsafe Condition

This AD was prompted by reports of cracking in the main equipment center (MEC) drip shield and exhaust plenum. We are issuing this AD to prevent water penetration into the MEC, 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) Installation

Within 24 months after the effective date of this AD, install a fiberglass reinforcing overcoat on the MEC drip shield, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-25A3640, dated January 8, 2014.

(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 paragraph (i) 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.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) If any service information contains steps that are identified as RC (Required for Compliance), those steps must be done to comply with this AD; any steps that are not labeled as RC are recommended. Those steps that are not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the steps labeled as RC can be done and the airplane can be put back in a serviceable condition. Any substitutions or changes to steps labeled as RC require approval of an AMOC.

(i) Related Information

For more information about this AD, contact Francis Smith, Aerospace Engineer, Cabin Safety and Environmental Systems Branch, ANM-150S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone: 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 Alert Service Bulletin 747-25A3640, dated January 8, 2014.

(ii) Reserved.

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

(4) You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may view this 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 April 17, 2015.
Victor Wicklund,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.