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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-0935; Directorate Identifier 2014-NM-243-AD; Amendment 39-18652; AD 2016-19-03]

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 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. This AD was prompted by several reports of chafing of the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks due to high vibration. These wire bundles can chafe through the wire sleeving into the insulation, exposing the wire conductors. This AD requires replacing the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks with new, improved wire bundles inserted into conduit liners. This AD also requires adding a revision to the maintenance or inspection program, as applicable, to include critical design configuration control limitations (CDCCLs) for the fuel boost pump wiring. We are issuing this AD to prevent chafing of the wire bundles and subsequent arcing between the wiring and the electrical conduit creating an ignition source in the fuel tanks, which could result in a fire and consequent fuel tank explosion.

DATES: This AD is effective October 31, 2016.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of October 31, 2016.

ADDRESSES: For service information identified in this final rule, 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-2015-0935.

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-2015-0935; 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: Tung Tran, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6505; fax: 425-917-6590; email: tung.tran@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain 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. The SNPRM published in the Federal Register on March 8, 2016 (81 FR 12041) ("the SNPRM"). We preceded the SNPRM with a notice of proposed rulemaking (NPRM) that published in the Federal Register on May 1, 2015 (80 FR 24850) ("the NPRM"). The NPRM proposed to require replacing the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks with new, improved wire bundles inserted into conduit liners. The NPRM was prompted by several reports of chafing of the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks due to high vibration. These wire bundles can chafe through the wire sleeving into the insulation, exposing the wire conductors. The SNPRM proposed to require a revision to the maintenance or inspection program, as applicable, to include CDCCLs for the fuel boost pump wiring. We are issuing this AD to prevent chafing of the wire bundles and subsequent arcing between the wiring and the electrical conduit creating an ignition source in the fuel tanks, which could result in a fire and consequent fuel tank explosion.

Comments

We gave the public the opportunity to participate in developing this AD. We have considered the comments received. The Air Line Pilots Association International, Boeing, and United Airlines supported the SNPRM.

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 SNPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the SNPRM.

Related Service Information Under 1 CFR Part 51

We reviewed the following service information:

- Boeing Alert Service Bulletin 747-28A2306, dated October 2, 2014. The service information describes procedures for replacing the wire bundles of the electrical conduit inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks.
- Boeing 747-100/200/300/SP Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-13747-CMR, Revision June 2014. Among other things, Document D6-13747-CMR describes CDCCL AWL No. 28-AWL-24 for the fuel boost pump wiring.
- Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of Boeing 747-400 Maintenance Planning Data (MPD) Document D621U400-9, Revision June 2014. Among other things, Section 9 describes CDCCL AWL No. 28-AWL-35 for the fuel boost pump wiring.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 176 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
Replacement	Up to 53 work-hours × $85 per hour = $4,505	$4,600	Up to $9,105	Up to $1,602,480.
Revise maintenance or inspection program	1 work-hour × $85 per hour = $85	$0	$85	$14,960.

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):

2016-19-03 The Boeing Company: Amendment 39-18652; Docket No. FAA-2015-0935; Directorate Identifier 2014-NM-243-AD.

(a) Effective Date

This AD is effective October 31, 2016.

(b) Affected ADs

This AD affects AD 2011-15-03, Amendment 39-16750 (76 FR 41659, July 15, 2011). ("AD 2011-15-03")

(c) Applicability

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 Alert Service Bulletin 747-28A2306, dated October 2, 2014.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by several reports of chafing of the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks due to high vibration. These wire bundles can chafe through the wire sleeving into the insulation, exposing the wire conductors. We are issuing this AD to prevent chafing of the wire bundles and subsequent arcing between the wiring and the electrical conduit creating an ignition source in the fuel tanks, which could result in a fire and consequent fuel tank explosion.

(f) Compliance

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

(g) Replacement

Within 60 months after the effective date of this AD: Replace the wire bundles inside the electrical conduit of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks with new, improved wire bundles inserted into conduit liners, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-28A2306, dated October 2, 2014. Accomplishing the replacement required by this paragraph terminates the inspections required by paragraphs (g), (h), and (n) of AD 2011-15-03.

(h) Maintenance or Inspection Program Revision

Within 180 days after the effective date of this AD, revise the maintenance or inspection program, as applicable, to incorporate critical design configuration control limitation (CDCCL) Airworthiness Limitation (AWL) No. 28-AWL-24, "Fuel Boost Pump Wires In Conduit Installation–In Fuel Tank," of Sub-section C.1, "Fuel Tank Ignition Prevention," of Section C., "Airworthiness Limitations–Systems," of the Boeing 747-100/200/300/SP Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs) Document D6-13747-CMR, Revision June 2014; or CDCCL AWL No. 28-AWL-35, "Fuel Boost Pump Wires In Conduit Installation–In Fuel Tank," of Sub-section B.1, "Fuel System Ignition Prevention," of Section B, "Airworthiness Limitations (AWLs)–Systems," of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of Boeing 747-400 Maintenance Planning Data (MPD) Document D621U400-9, Revision June 2014; as applicable.

(i) No Alternative Actions, Intervals, and/or CDCCLs

After accomplishing the revision required by paragraph (h) of this AD, no alternative actions (e.g., inspections), intervals, and/or CDCCLs may be used unless the actions, intervals, and/or CDCCLs are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (j) of this AD.

(j) 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 (k)(1) 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, modification, or alteration 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. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(k) Related Information

For more information about this AD, contact Tung Tran, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6505; fax: 425-917-6590; email: tung.tran@faa.gov.

(l) 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 747-28A2306, dated October 2, 2014.

(ii) Boeing 747-100/200/300/SP Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs) Document D6-13747-CMR, Revision June 2014.

(iii) Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of Boeing 747-400 Maintenance Planning Data (MPD) Document D621U400-9, Revision June 2014.

(3) 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; phone: 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 September 6, 2016.

Michael Kaszycki,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.