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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2016-3986; Directorate Identifier 2015-NM-147-AD; Amendment 39-18661; AD 2016-19-12]**

**RIN 2120-AA64**

#### **Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 747-400, 747-400D, and 747-400F series airplanes. This AD was prompted by a determination that a certain fastener type in the fuel tank walls has insufficient bond to the structure, and an electrical wiring short could cause arcing to occur at the ends of fasteners in the fuel tanks. This AD requires the installation of new clamps and polytetrafluoroethylene (TFE) sleeves on the wire bundles of the front spars and rear spars of the wings. This AD also requires inspecting the existing TFE sleeves under the wire bundle clamps for correct installation, and replacement if necessary. We are issuing this AD to prevent potential ignition sources in the fuel tank in the event of a lightning strike or high-powered short circuit, and consequent fire or explosion.

**DATES:** This AD is effective November 14, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of November 14, 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-2016-3986.

## **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-2016-3986; 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 (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6505; fax: 425-917-6590; email: [Tung.Tran@faa.gov](mailto:Tung.Tran@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, 747-400D, and 747-400F series airplanes. The NPRM published in the Federal Register on March 1, 2016 (81 FR 10537) ("the NPRM"). The NPRM was prompted by a determination that a certain fastener type in the fuel tank walls has insufficient bond to the structure, and an electrical wiring short could cause arcing to occur at the ends of fasteners in the fuel tanks. The NPRM proposed to require the installation of new clamps and TFE sleeves on the wire bundles of the front spars and rear spars of the wings. The NPRM also proposed to require inspecting the existing TFE sleeves under the wire bundle clamps for correct installation, and replacement if necessary. We are issuing this AD to prevent potential ignition sources in the fuel tank in the event of a lightning strike or high-powered short circuit, and consequent fire or explosion.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Support for the NPRM**

Boeing supported the content of the NPRM. United Airlines had no objection to the NPRM.

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

### **Related Service Information Under 1 CFR Part 51**

We reviewed Boeing Special Attention Service Bulletin 747-28-2324, Revision 1, dated July 27, 2015. The service information describes procedures for installing new clamps and TFE sleeves on the

wire bundles of the front spars and rear spars of the wings. The service information also describes procedures for inspecting TFE sleeves under the wire bundle clamps that were installed using the procedures specified in Boeing Special Attention Service Bulletin 747-28-2324, dated November 3, 2014, for correct installation, and replacing them if necessary. 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 135 airplanes of U.S. registry.  
 We estimate the following costs to comply with this AD:

**Estimated Costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Installation of wire bundle clamps	Up to 7 work-hours × \$85 per hour = \$595	\$138	Up to \$733	Up to \$98,955.
Inspection	Up to 5 work-hours × \$85 per hour = \$425	0	Up to \$425	Up to \$57,375.

We have received no definitive data that enables us to provide cost estimates for the on-condition actions specified in this AD.

**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):



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**2016-19-12 The Boeing Company:** Amendment 39-18661; Docket No. FAA-2016-3986; Directorate Identifier 2015-NM-147-AD.

**(a) Effective Date**

This AD is effective November 14, 2016.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to The Boeing Company Model 747-400, 747-400D, and 747-400F series airplanes, certificated in any category, as identified in Boeing Special Attention Service Bulletin 747-28-2324, Revision 1, dated July 27, 2015.

**(d) Subject**

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

**(e) Unsafe Condition**

This AD was prompted by a determination that a certain fastener type in the fuel tank walls has insufficient bond to the structure, and an electrical wiring short could cause arcing to occur at the ends of fasteners in the fuel tanks. We are issuing this AD to prevent potential ignition sources in the fuel tank in the event of a lightning strike or high-powered short circuit, and consequent fire or explosion.

**(f) Compliance**

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

**(g) Installation/Inspection**

Within 60 months after the effective date of this AD, do the actions specified in paragraph (g)(1) or (g)(2) of this AD, as applicable.

(1) For airplanes on which the modification specified in Boeing Special Attention Service Bulletin 747-28-2324, dated November 3, 2014, has not been done as of the effective date of this AD: Install new clamps and polytetrafluoroethylene (TFE) sleeves on the wire bundles of the front spars and rear spars of the wings, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-28-2324, Revision 1, dated July 27, 2015.

(2) For airplanes on which the modification specified in Boeing Special Attention Service Bulletin 747-28-2324, dated November 3, 2014, has been done as of the effective date of this AD: Do a detailed inspection of the TFE sleeves under the wire bundle clamps for correct installation, and

replace the sleeves if not correctly installed, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-28-2324, Revision 1, dated July 27, 2015.

**(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, alteration, or modification 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 method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

**(i) Related Information**

For more information about this AD, contact Tung Tran, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6505; fax: 425-917-6590; email: Tung.Tran@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 747-28-2324, Revision 1, dated July 27, 2015.

(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, 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 September 13, 2016.

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