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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2016-8179; Directorate Identifier 2015-NM-201-AD; Amendment 39-18913; AD 2017-11-14]**

**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 superseding Airworthiness Directive (AD) 2011-26-03, which applied to certain The Boeing Company Model 777-200, -200LR, -300, and -300ER series airplanes. AD 2011-26-03 required installing Teflon sleeving under the clamps of certain wire bundles routed along the fuel tank boundary structure, and cap sealing certain penetrating fasteners of the main and center fuel tanks. This AD requires certain inspections for certain airplanes, corrective actions if necessary, and installation of Teflon sleeves under certain wire bundle clamps. This AD was prompted by a report indicating that additional airplanes are affected by the identified unsafe condition. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective July 11, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of July 11, 2017.

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of January 20, 2011 (75 FR 78588, December 16, 2010).

**ADDRESSES:** For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone: 562-797-1717; 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-2016-8179.

## **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-2016-8179; 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:** Tak Kobayashi, Aerospace Engineer, Propulsion Branch, ANM-140S, Seattle Aircraft Certification Office (ACO), FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6499; fax: 425-917-6590; email: [takahisa.kobayashi@faa.gov](mailto:takahisa.kobayashi@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2011-26-03, Amendment 39-16893 (76 FR 78138, December 16, 2011) (“AD 2011-26-03”). AD 2011-26-03 applied to certain The Boeing Company Model 777-200, -200LR, -300, and -300ER series airplanes. The NPRM published in the Federal Register on July 20, 2016 (81 FR 47084). The NPRM was prompted by a report indicating that additional airplanes are affected by the identified unsafe condition. The NPRM proposed to continue to require installing Teflon sleeving under the clamps of certain wire bundles routed along the fuel tank boundary structure, and cap sealing certain penetrating fasteners of the main and center fuel tanks. The NPRM also proposed to revise the applicability by adding The Boeing Company Model 777F series airplanes. The NPRM also proposed to add, for certain airplanes, detailed inspections of certain wire bundle clamps, certain Teflon sleeves, and certain fasteners; corrective actions if necessary; and installation of Teflon sleeves under certain wire bundle clamps. We are issuing this AD to prevent arcing inside the main and center fuel tanks in the event of a fault current or lightning strike, which, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

### **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.

### **Request To Withdraw the NPRM**

Boeing requested that we withdraw the NPRM. The commenter stated that the actions proposed by the NPRM are no longer necessary, since the unsafe condition is adequately addressed by repetitive inspections required by the electrical wiring interconnection system (EWIS) enhanced zonal analysis procedure (EZAP) inspection program required by 14 CFR part 26. The commenter pointed out that, since the time this issue was determined to be a safety issue, the exposure assumed under the safety assessment has changed due to the inspection program. The commenter stated that the safety concern was that the failure of multiple protective design features for wiring installations could be a single cascading failure since the exposure was the life of the airplane. The commenter stated that since the implementation of the EWIS EZAP inspections, where the interval is now 6 years, this is no longer considered to be a single failure as the exposure has been reduced to where the wiring and installation is not expected to fail in this inspection interval and any potential wear would

be detected and would be repaired or removed and replaced in accordance with maintenance activities.

We disagree to withdraw the NPRM. The EWIS EZAP repetitive inspection program is implemented by FAA operating rules (14 CFR 121.1111 or 14 CFR 129.111), which are applicable only to operators that are required to comply with those operating rules. The FAA is obligated to advise foreign airworthiness authorities of unsafe conditions identified in products manufactured in the United States, including Boeing airplanes, in accordance with bilateral airworthiness agreements with countries around the world. The issuance of ADs is the means by which the FAA satisfies this obligation. Even if the FAA agreed that the actions required by 14 CFR 121.1111 and 14 CFR 129.111 adequately addressed the unsafe condition, the FAA would still issue this AD to address airplanes that may not be operated in accordance with those requirements. Additionally, the FAA does not agree that the EWIS EZAP repetitive inspection program has been demonstrated as sufficient to allow a determination that chafing through the wire insulation of the unmodified (pre-AD) configuration is not a foreseeable single failure. The FAA understands that the EWIS EZAP repetitive inspection program interval for this area was determined based on a later modified design, and that design has additional Teflon sleeving. For these reasons, we have made no change to this final rule in this regard.

### **Request for Clarification of Safety Evaluation Criteria**

Boeing requested that we clarify the use of “unacceptable (failure) experience” in the Discussion section of the NPRM and that was used as a safety evaluation criterion under Special Federal Aviation Regulation No. 88 (SFAR 88). The commenter requested better definition of “unacceptable (failure) experience” or the addition of detailed guidance that defines how to identify an “unacceptable (failure) experience.” The commenter also indicated that Boeing airplanes at the time of design approval are intended to meet all applicable regulations including 14 CFR 25.601, which specifically prohibits hazardous or unreliable features.

We agree that clarification is necessary. To provide standardized policy for determining the need for mandatory action relative to the finding from the fuel system safety review required by SFAR 88, the FAA issued Memorandum 2003-112-15, SFAR 88–Mandatory Action Decision Criteria, dated February 25, 2003. One of the criteria provided in the policy memo is that, for any tank (either high or low flammability exposure time), all failures identified in service, that result in thermal or electrical energy dissipation into the fuel tank system, which could create an ignition hazard, or that make fuel tank safety protection devices inoperative (e.g., fuel pump canister, wire sleeving, bonding lead), are considered unsafe conditions and must be addressed by corrective action (i.e., AD). This criterion is independent of any compliance showing or finding previously made as part of a type certification program. The policy memo criteria are mentioned in the Discussion section of each NPRM that resulted from an SFAR 88 unsafe condition determination. Additionally, the NPRM Discussion is not repeated in the final rule, so no change to this final rule is necessary in this regard.

### **Request for Clarification of Credit for Actions Accomplished Previously**

Boeing requested that we revise paragraph (l) of the proposed AD so that it is clear that credit will be given for past work that has already been accomplished on other Boeing Model 777 airplanes. No justification was provided, however, the commenter stated that the NPRM is adding the missing airplanes and it uses the latest service information to reset the method of compliance.

We infer that the commenter is requesting clarification for taking credit for actions required by paragraph (g)(1) of this AD using earlier revisions of the service information. Paragraph (l)(1) of this AD provides credit for actions accomplished before January 20, 2011 (the effective date of AD 2010-24-12, Amendment 39-16531 (75 FR 78588, December 16, 2010) (“AD 2010-24-12”)), using service information revisions earlier than Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009, required by paragraph (g)(1) of AD 2010-24-12. Accomplishing the actions using Boeing

Service Bulletin 777-57A0050, Revision 3, dated February 18, 2014, has been approved as an alternative method of compliance (AMOC) for paragraph (g)(l) of AD 2011-26-03, and AMOCs approved previously for AD 2011-26-03 are approved as AMOCs for the corresponding provisions of this AD as specified in paragraph (m)(4) of this AD. After the effective date of this AD, only Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015 is allowed for compliance with paragraph (g)(l) of this AD. Paragraphs (i) and (j) of this AD require actions for airplanes not covered in paragraph (g)(l) of this AD and also require additional actions for those airplanes that accomplished the actions required by paragraph (g)(l) of this AD using service bulletin revisions earlier than Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. Therefore, no credit is provided for actions required by paragraphs (i) and (j) of this AD using service bulletin revisions earlier than Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. We have not changed this AD in this regard.

### **Request To Simplify Compliance Implementation Time Frame**

Boeing requested that we revise paragraphs (i), (j), and (k) of the proposed AD to simplify the AD compliance implementation time frame. The commenter stated that the NPRM sets the requirements to be completed within 60 months of different revisions of different documents with an exception specified in paragraph (k) of the proposed AD, and that the proposed requirements were cumbersome and unclear. The commenter did not provide any explanation of how the paragraphs should be revised.

We agree that clarification is necessary. The NPRM proposed to supersede AD 2011-26-03 and added new requirements in paragraphs (i) and (j) of this AD. Paragraph (k) of this AD provides exceptions to the service information. For the new requirements in this AD, the FAA has determined that the compliance times are reasonable based on consideration of the risk level associated with the unsafe condition and the time necessary to perform the work. In addition, the compliance times in paragraphs (i) and (j) of this AD do not refer to any service documents (both paragraphs refer to Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, as the appropriate source of service information for accomplishing the actions in those paragraphs). Therefore, we have determined that the requirements of this AD are adequate and clear. We have not changed this AD in this regard.

### **Clarification of Service Information Requirement**

Under the “Differences Between This Proposed AD and the Service Information” section of the NPRM, we noted that the corrections to group applicability for “WORK PACKAGE 21: More Work: Rear Spar Wire Bundle Teflon Sleeve Installation,” Figure 3, and Figure 100 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, were included in paragraphs (k)(1), (k)(2), and (k)(3) of the proposed AD. Paragraph (k)(1) of this AD specifies that WORK PACKAGE 21 applies to Groups 5 through 43 (including Configurations 1 and 2) to correct the error in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, which only identifies Configuration 2 of Groups 5 through 43 as applicable. Paragraph (k)(1) of this AD, which is referenced by paragraph (j) of this AD, is intended to clarify the airplanes affected by the requirements specified in paragraph (j) of this AD. To further clarify this aspect, we have revised paragraph (j) of this AD to specifically reference Groups 5 through 43, Configurations 1 and 2 airplanes.

We have also revised paragraph (m)(4) of this AD to accept AMOCs approved previously for AD 2010-24-12 as AMOCs for the corresponding provisions of this AD.

## Clarification of Unsafe Condition

We have revised the Discussion section of this final rule and paragraph (e) of this AD to clarify that we are issuing this AD to address arcing inside the main and center fuel tanks in the event of a fault current or lightning strike, which, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

## Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously and 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 Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. The service information describes procedures for installing Teflon sleeving under the clamps of certain wire bundles routed along the fuel tank boundary structure, and cap sealing certain penetrating fasteners of the main and center fuel tanks. The service information also describes detailed inspections of certain wire bundle clamps, certain Teflon sleeves, and certain fasteners; corrective actions if necessary; and installation of Teflon sleeves under certain wire bundle clamps. 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 182 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
Install Teflon sleeving and cap sealing (retained actions from AD 2011-26-03)	Up to 358 work-hours × \$85 per hour = \$30,430	\$2,241	Up to \$32,671	Up to \$5,946,122.
Detailed inspections and installation of Teflon sleeves (new actions)	Up to 53 work-hours × \$85 per hour = \$4,505	( <sup>1</sup> )	Up to \$4,505	Up to \$819,910.

<sup>1</sup> We have received no definitive data that would enable us to provide parts cost estimates for the installation of Teflon sleeves (new action) specified in this AD.

We have received no definitive data that would enable 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**

We have determined that 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 removing Airworthiness Directive (AD) 2011-26-03, Amendment 39-16893 (76 FR 78138, December 16, 2011), and adding the following new AD:



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**2017-11-14 The Boeing Company:** Amendment 39-18913; Docket No. FAA-2016-8179; Directorate Identifier 2015-NM-201-AD.

**(a) Effective Date**

This AD is effective July 11, 2017.

**(b) Affected ADs**

This AD replaces AD 2011-26-03, Amendment 39-16893 (76 FR 78138, December 16, 2011) (“AD 2011-26-03”).

**(c) Applicability**

This AD applies to The Boeing Company airplanes, certificated in any category, as identified in the applicable service information specified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4) of this AD.

(1) For The Boeing Company Model 777-200, -200LR, -300, -300ER, and 777F airplanes: Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015.

(2) For The Boeing Company Model 777-200 and -300 airplanes: Boeing Alert Service Bulletin 777-57A0051, dated May 15, 2006.

(3) For The Boeing Company Model 777-200, -300, and -300ER airplanes: Boeing Alert Service Bulletin 777-57A0057, Revision 1, dated August 2, 2007.

(4) For The Boeing Company Model 777-200, -200LR, -300, and -300ER airplanes: Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008.

**(d) Subject**

Air Transport Association (ATA) of America Code 57, Wings.

**(e) Unsafe Condition**

This AD was prompted by fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent arcing inside the main and center fuel tanks in the event of a fault current or lightning strike, which, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

**(f) Compliance**

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

**(g) Retained Corrective Actions (Installing Teflon Sleeving, Cap Sealing, One-Time Inspection), With Revised Service Information**

This paragraph restates the requirements of paragraph (g) of AD 2011-26-03, with revised service information. Within 60 months after January 20, 2011 (the effective date of AD 2010-24-12,

Amendment 39-16531 (75 FR 78588, December 16, 2010) (“AD 2010-24-12”), do the applicable actions specified in paragraph (g)(1), (g)(2), (g)(3), or (g)(4) of this AD, except as required by paragraph (k)(2) of this AD.

(1) For airplanes identified in Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009: Install Teflon sleeving under the clamps of certain wire bundles routed along the fuel tank boundary structure, and cap seal certain penetrating fasteners of the fuel tanks, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009; or Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. As of the effective date of this AD, only Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, may be used to accomplish the actions required by this paragraph.

(2) For airplanes identified in Boeing Alert Service Bulletin 777-57A0051, dated May 15, 2006: Cap seal certain penetrating fasteners of the fuel tanks, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-57A0051, dated May 15, 2006.

(3) For airplanes identified in Boeing Alert Service Bulletin 777-57A0057, Revision 1, dated August 2, 2007: Do a general visual inspection to determine if certain fasteners are cap sealed, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-57A0057, Revision 1, dated August 2, 2007. Do all applicable corrective actions before further flight.

(4) For Model 777-200, -300, and -300ER airplanes identified in Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008: Cap seal the fasteners in the center fuel tanks that were not sealed during production, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008.

#### **(h) Retained Cap Sealing the Fasteners, With No Changes**

This paragraph restates the requirements of paragraph (i) of AD 2011-26-03, with no changes. For Model 777-200LR airplanes identified in Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008: Within 60 months after January 3, 2012 (the effective date of AD 2011-26-03), cap seal the fasteners in the center fuel tanks that were not sealed during production, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008.

#### **(i) New Detailed Inspection and Corrective Actions**

For Group 1, Configurations 2 through 4 airplanes; Groups 2 through 4, Configurations 3 through 5 airplanes; Groups 5 through 43, Configuration 1 airplanes; and Groups 44 and 45 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Within 60 months after the effective date of this AD, do the applicable actions specified in paragraphs (i)(1), (i)(2), and (i)(3) of this AD, except as required by paragraph (k)(2) of this AD.

(1) For Group 1, Configurations 2 through 4 airplanes; Groups 2 through 4, Configurations 3 through 5 airplanes; Groups 5 through 43, Configuration 1 airplanes; and Groups 44 and 45 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Do a detailed inspection for installation of Teflon sleeves under certain wire bundle clamps, as applicable; a detailed inspection to determine the type of wire bundle clamp; and all applicable corrective actions; in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. Do all applicable corrective actions before further flight.

(2) For Group 1, Configurations 2 through 4 airplanes; and Groups 2 through 4, Configurations 3 through 5 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Do a detailed inspection for correct installation of certain Teflon sleeves, as applicable; and do all applicable corrective actions; in accordance with the Accomplishment



Instructions of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. Do all applicable corrective actions before further flight.

(3) For Group 1, Configurations 2 through 4 airplanes; and Groups 2 through 4, Configurations 3 through 5 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Do a detailed inspection for cap sealing of certain fasteners, as applicable; and do all applicable corrective actions; in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. Do all applicable corrective actions before further flight.

**(j) New Installation of Teflon Sleeves**

For Group 1, Configurations 2 through 5 airplanes; Groups 2 through 4, Configurations 3 through 6 airplanes; and Groups 5 through 43, Configurations 1 and 2 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Within 60 months after the effective date of this AD, install Teflon sleeves under certain wire bundle clamps, as applicable, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, except as required by paragraphs (k)(1), (k)(2), and (k)(3) of this AD.

**(k) Exceptions to the Service Information**

(1) Where “WORK PACKAGE 21: More Work: Rear Spar Wire Bundle Teflon sleeve Installation” of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, specifies “Groups 5 through 43, Configuration 2,” for this AD, “WORK PACKAGE 21: More Work: Rear Spar Wire Bundle Teflon sleeve Installation” of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, applies to all configurations of Groups 5 through 43 airplanes.

(2) Where Figure 3 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, specifies “Groups 1 through 7, and 9 through 43,” for this AD, Figure 3 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, applies to Groups 1 through 43 airplanes.

(3) Where Figure 100 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, specifies “Groups 5 through 43, Configuration 2,” for this AD, Figure 100 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, applies to all configurations of Groups 5 through 43 airplanes.

**(l) Credit for Previous Actions**

(1) This paragraph provides credit for the actions specified in paragraph (g)(1) of this AD, if those actions were performed before January 20, 2011 (the effective date of AD 2010-24-12), using Boeing Alert Service Bulletin 777-57A0050, dated January 26, 2006; or Boeing Alert Service Bulletin 777-57A0050, Revision 1, dated August 2, 2007; provided that the applicable additional work specified in Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009, is done within the compliance time specified in paragraph (g) of this AD. The additional work must be done in accordance with Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009.

(2) This paragraph provides credit for the actions specified in paragraph (g)(3) of this AD, if those actions were performed before January 20, 2011 (the effective date of AD 2010-24-12), using Boeing Alert Service Bulletin 777-57A0057, dated August 7, 2006.

**(m) 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 (n)(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.

(4) AMOCs approved previously for AD 2011-26-03 and AD 2010-24-12 are approved as AMOCs for the corresponding provisions of this AD.

#### **(n) Related Information**

(1) For more information about this AD, contact Tak Kobayashi, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6499; fax: 425-917-6590; email: takahisa.kobayashi@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (o)(5) and (o)(6) of this AD.

#### **(o) 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.

(3) The following service information was approved for IBR on July 11, 2017.

(i) Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015.

(ii) Reserved.

(4) The following service information was approved for IBR on January 20, 2011 (75 FR 78588, December 16, 2010).

(i) Boeing Alert Service Bulletin 777-57A0051, dated May 15, 2006.

(ii) Boeing Alert Service Bulletin 777-57A0057, Revision 1, dated August 2, 2007.

(iii) Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008.

(iv) Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009.

(5) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone: 562-797-1717; Internet: <https://www.myboeingfleet.com>.

(6) You may view this 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.

(7) 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 May 23, 2017.

Michael Kaszycki,  
Acting Manager, Transport Airplane Directorate,

Aircraft Certification Service.