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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-2961; Directorate Identifier 2014-NM-145-AD; Amendment 39-18430; AD 2016-05-12]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2012-15-13, for certain The Boeing Company Model 747-100B SUD, 747-300, 747-400, and 747-400D series airplanes; and Model 747-200B series airplanes having a stretched upper deck. AD 2012-15-13 required inspections for cracking and discrepancies of certain fasteners; modification of the frame-to-tension-tie joints; repetitive post-modification inspections; related investigative and corrective actions if necessary; and repetitive inspections for cracking in the tension tie channels, and repair if necessary. For certain airplanes, AD 2012-15-13 also required an inspection to determine if the angle is installed correctly, and re-installation if necessary; and an inspection at the fastener locations where the tension tie previously attached to the frame prior to certain modifications, and repair if necessary. This new AD adds a new inspection for cracking in the tension tie channels and post-modification inspections of the modified tension ties for cracking, and repair if necessary. This AD was prompted by an evaluation indicated that the upper deck is subject to widespread fatigue damage (WFD). We are issuing this AD to prevent fatigue cracking of the tension ties, shear webs, and frames of the upper deck, which could result in rapid decompression and reduced structural integrity of the airplane.

DATES: This AD is effective April 22, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of April 22, 2016.

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of September 12, 2012 (77 FR 47267, August 8, 2012).

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of November 28, 2007 (72 FR 65655, November 23, 2007).

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 <https://www.regulations.gov> by searching for and locating Docket No. FAA-2015-2961.

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-2015-2961; 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: Bill Ashforth, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6432; fax: 425-917-6590; email: bill.ashforth@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2012-15-13, Amendment 39-17142 (77 FR 47267, August 8, 2012) ("AD 2012-15-13"). AD 2012-15-13 applied to certain The Boeing Company Model 747-100B SUD, 747-300, 747-400, and 747-400D series airplanes; and Model 747-200B series airplanes having a stretched upper deck. The NPRM published in the Federal Register on July 24, 2015 (80 FR 43974) ("the NPRM"). The NPRM was prompted by an evaluation that indicated that the upper deck is subject to WFD. The NPRM proposed to continue to require inspections for cracking and discrepancies of certain fasteners; modification of the frame-to-tension-tie joints; repetitive post-modification inspections; related investigative and corrective actions if necessary; and repetitive inspections for cracking in the tension tie channels, and repair if necessary. For certain airplanes, the NPRM also proposed to continue to require an inspection to determine if the angle is installed correctly, and re-installation if necessary; and an inspection at the fastener locations where the tension tie previously attached to the frame prior to certain modifications, and repair if necessary. The NPRM also proposed to add a new inspection for cracking in the tension tie channels and post-modification inspections of the modified tension ties for cracking, and repair if necessary. We are issuing this AD to prevent fatigue cracking of the tension ties, shear webs, and frames of the upper deck, which could result in rapid decompression and reduced structural integrity 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.

Support for the NPRM

United Airlines concurred with the contents of the NPRM.

Requests To Include Options To Perform Inspections in Revised Service Information

Boeing and United Parcel Service (UPS) asked that we add a new paragraph to the proposed AD that includes an option to perform the inspections specified in Boeing Alert Service Bulletin 747-53A2507, Revision 2, dated May 9, 2014. Boeing stated that these inspections are equivalent to the inspections done in accordance with Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010. UPS recommended that Boeing Alert Service Bulletin 747-53A2507, Revision 2, dated May 9, 2014, be added to paragraphs (g) through (o) of the proposed AD. UPS noted that, for clarity, the proposed AD should refer to the revised service information rather than relying on paragraph (t)(4) of the proposed AD, which allows alternative methods of compliance (AMOCs) previously approved for AD 2012-15-13 to be approved as AMOCs for the proposed AD.

We acknowledge the commenters' requests and note that we normally add reference to later revisions of service information in the restated paragraphs of supersedure ADs. However, in most cases, the later revisions do not include new compliance times and the procedures are closely aligned with those in the previous service information. Boeing Alert Service Bulletin 747-53A2507, Revision 2, dated May 9, 2014, adds alternative compliance times for certain airplanes and refers to different procedures in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2507, Revision 2, dated May 9, 2014, for accomplishing the actions required by AD 2012-15-13. Therefore, we cannot simply add a reference to paragraphs (g) through (o) of this AD as requested by the commenter. We have determined that, in this case, adding additional paragraphs to this AD to specify the alternative method of compliance, including new compliance times and procedures, is not necessary since Boeing Alert Service Bulletin 747-53A2507, Revision 2, dated May 9, 2014, was already approved as an AMOC to AD 2012-15-13. As stated by the commenter, paragraph (t)(4) of this AD already allows the use of previous AMOCs, such as Boeing Alert Service Bulletin 747-53A2507, Revision 2, dated May 9, 2014, as AMOCs for the corresponding provisions of this AD. We have made no change to this AD in this regard.

Request To Include an Alternative Compliance Time for the Modification

Boeing and UPS asked that we add a new paragraph to allow an alternative compliance time for airplanes on which the station (STA) 1120, 1160, 1200, and 1220 tension ties were modified during a freighter conversion, as provided in table 4 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014. Boeing stated that the compliance time for modification of those airplanes can be increased because the modification has been done during a freighter conversion. UPS noted that paragraph (p) of the proposed AD should be changed to require modification and all related inspections and corrective actions be accomplished in accordance with Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014, at the applicable time specified in Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011; or Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014.

We agree with the commenter to include the alternative compliance times for certain airplanes to accomplish the actions required by paragraph (p) of this AD. We have added a new paragraph (p)(3) to this AD for Group 3 through 5, Configuration 1 airplanes identified in Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014, to specify that operators may accomplish the actions required by paragraph (p) of this AD within the applicable compliance times specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014.

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.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014. The service information describes procedures for modifying the tension tie and frame at certain center sections, including related investigative and corrective actions; post-modification inspections for cracking of the tension tie and frame structure and corrective actions; an additional modification; an inspection of all areas of the modified tension ties for cracking; an inspection of the tension tie center section for cracking in certain tension tie channels; and repair.

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 120 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
Retained modification in AD 2012-15-13 (67 airplanes)	Between 257 and 263 work-hours × \$85 per hour = between \$21,845 and \$22,355	Between \$341,334 and \$345,490	Between \$363,179 and \$367,845	Between \$24,332,993 and \$24,645,615.
Retained post-modification inspections in AD 2012-15-13 (67 airplanes)	6 work-hours × \$85 per hour = \$510 per inspection cycle	\$0	\$510 per inspection cycle	\$34,170 per inspection cycle.
New inspection	10 work-hours × \$85 per hour = \$850	\$0	\$850	\$102,000.
New post-modification eddy current inspections	216 work-hours × \$85 per hour = \$18,360 per inspection cycle	\$0	\$18,360 per inspection cycle	\$2,203,200 per inspection cycle.

We have received no definitive data that will enable us to provide a cost estimate 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) 2012-15-13, Amendment 39-17142 (77 FR 47267, August 8, 2012), and adding the following new AD:



2016-05-12 The Boeing Company: Amendment 39-18430; Docket No. FAA-2015-2961; Directorate Identifier 2014-NM-145-AD.

(a) Effective Date

This AD is effective April 22, 2016.

(b) Affected ADs

This AD replaces AD 2012-15-13, Amendment 39-17142 (77 FR 47267, August 8, 2012) ("AD 2012-15-13").

(c) Applicability

This AD applies to The Boeing Company Model 747-100B SUD, 747-300, 747-400, and 747-400D series airplanes; and Model 747-200B series airplanes having a stretched upper deck; certificated in any category; excluding airplanes that have been converted to a large cargo freighter configuration.

(d) Subject

Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Unsafe Condition

This AD was prompted by reports of cracked and severed tension ties, broken fasteners, and cracks in the frame, shear web, and shear ties adjacent to tension ties for the upper deck. This AD was also prompted by an evaluation by the design approval holder, which indicated that the upper deck is subject to widespread fatigue damage. We are issuing this AD to prevent fatigue cracking of the tension ties, shear webs, and frames of the upper deck, which could result in rapid decompression and reduced structural integrity of the airplane.

(f) Compliance

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

(g) Retained Repetitive Stage 1 Inspections, With No Changes

This paragraph restates the requirements of paragraph (g) of AD 2012-15-13, with no changes. For all airplanes: Do detailed inspections for cracking or discrepancies of the fasteners in the tension ties, shear webs, and frames at body stations (STA) 1120 through 1220, and related investigative and corrective actions as applicable, by doing all actions specified in and in accordance with "Stage 1 Inspection" of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2507, dated April 21, 2005, except as provided by paragraph (k) of this AD; or Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010. As of September 12, 2012 (the effective

date of AD 2012-15-13), only Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010, may be used to do the actions required by this paragraph. Do the Stage 1 inspections at the applicable times specified in paragraphs (h) and (i) of this AD, except as provided by paragraphs (g)(1) and (g)(2) of this AD. Accomplishment of the initial Stage 2 inspection required by paragraph (j) of this AD terminates the requirements of this paragraph. Any applicable related investigative and corrective actions must be done before further flight. Doing the modification required by paragraph (p) of this AD terminates the repetitive inspection requirements of this paragraph.

(1) Where paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2507, dated April 21, 2005, specifies a compliance time relative to "the original issue date on this service bulletin," this AD requires compliance before the specified compliance time after April 26, 2006 (the effective date of AD 2006-06-11, Amendment 39-14520 (71 FR 14367, March 22, 2006)).

(2) For any airplane that reaches the applicable compliance time for the initial Stage 2 inspection (as specified in Table 1, Compliance Recommendations, under paragraph 1.E., of Boeing Alert Service Bulletin 747-53A2507, dated April 21, 2005) before reaching the applicable compliance time for the initial Stage 1 inspection: Accomplishment of the initial Stage 2 inspection terminates the Stage 1 inspections.

(h) Retained Compliance Time for Initial Stage 1 Inspection, With No Changes

This paragraph restates the requirements of paragraph (h) of AD 2012-15-13, with no changes. Do the initial Stage 1 inspection at the earlier of the times specified in paragraphs (h)(1) and (h)(2) of this AD.

(1) Inspect at the earlier of the times specified in paragraphs (h)(1)(i) and (h)(1)(ii) of this AD.

(i) At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2507, dated April 21, 2005.

(ii) Before the accumulation of 10,000 total flight cycles, or within 250 flight cycles after November 28, 2007 (the effective date of AD 2007-23-18, Amendment 39-15266 (72 FR 65655, November 23, 2007)), whichever occurs later.

(2) Inspect at the later of the times specified in paragraphs (h)(2)(i) and (h)(2)(ii) of this AD.

(i) Before the accumulation of 12,000 total flight cycles.

(ii) Within 50 flight cycles or 20 days, whichever occurs first, after November 28, 2007 (the effective date of AD 2007-23-18, Amendment 39-15266 (72 FR 65655, November 23, 2007)).

(i) Retained Compliance Times for Repetitive Stage 1 Inspections, With No Changes

This paragraph restates the requirements of paragraph (i) of AD 2012-15-13, with no changes. Repeat the Stage 1 inspection specified in paragraph (g) of this AD at the time specified in paragraph (i)(1) or (i)(2) of this AD, as applicable. Repeat the inspection thereafter at intervals not to exceed 250 flight cycles, until the initial Stage 2 inspection required by paragraph (j) of this AD has been done.

(1) For airplanes on which the initial Stage 1 inspection has not been accomplished as of November 28, 2007 (the effective date of AD 2007-23-18, Amendment 39-15266 (72 FR 65655, November 23, 2007)): Do the next inspection before the accumulation of 10,000 total flight cycles, or within 250 flight cycles after the initial Stage 1 inspection done in accordance with paragraph (g) of this AD, whichever occurs later.

(2) For airplanes on which the initial Stage 1 inspection has been accomplished as of November 28, 2007 (the effective date of AD 2007-23-18, Amendment 39-15266 (72 FR 65655, November 23, 2007)): Do the next inspection at the applicable time specified in paragraph (i)(2)(i) or (i)(2)(ii) of this AD.

(i) For airplanes that have accumulated fewer than 12,000 total flight cycles as of November 28, 2007 (the effective date of AD 2007-23-18, Amendment 39-15266 (72 FR 65655, November 23,

2007)): Do the next inspection before the accumulation of 10,000 total flight cycles, or within 250 flight cycles after November 28, 2007, whichever occurs later.

(ii) For airplanes that have accumulated 12,000 total flight cycles or more as of November 28, 2007 (the effective date of AD 2007-23-18, Amendment 39-15266 (72 FR 65655, November 23, 2007)): Do the next inspection at the later of the times specified in paragraphs (i)(2)(ii)(A) and (i)(2)(ii)(B) of this AD.

(A) Within 250 flight cycles after accomplishment of the initial Stage 1 inspection.

(B) Within 50 flight cycles or 20 days, whichever occurs first, after November 28, 2007 (the effective date of AD 2007-23-18, Amendment 39-15266 (72 FR 65655, November 23, 2007)).

(j) Retained Repetitive Stage 2 Inspections, With No Changes

This paragraph restates the requirements of paragraph (j) of AD 2012-15-13, with no changes. For all airplanes: Do detailed and high frequency eddy current inspections for cracking or discrepancies of the fasteners in the tension ties, shear webs, and frames at STAs 1120 through 1220, and related investigative and corrective actions as applicable, by doing all actions specified in and in accordance with "Stage 2 Inspection" of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2507, dated April 21, 2005; or Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010; except as provided by paragraph (k) of this AD. Do the initial inspections at the earlier of the times specified in paragraphs (j)(1) and (j)(2) of this AD. Repeat the Stage 2 inspection thereafter at the applicable times specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2507, dated April 21, 2005; or Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010. As of September 12, 2012 (the effective date of AD 2012-15-13), only Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010, may be used. Any applicable related investigative and corrective actions must be done before further flight. Accomplishment of the initial Stage 2 inspection ends the repetitive Stage 1 inspections. Doing the modification required by paragraph (p) of this AD terminates the repetitive inspection requirements of this paragraph.

(1) Before the accumulation of 16,000 total flight cycles, or within 1,000 flight cycles after November 28, 2007 (the effective date of AD 2007-23-18, Amendment 39-15266 (72 FR 65655, November 23, 2007)), whichever occurs later.

(2) Before the accumulation of 10,000 total flight cycles, or within 1,000 flight cycles after September 12, 2012 (the effective date of AD 2012-15-13, Amendment 39-17142 (77 FR 47267, August 8, 2012)), whichever occurs later.

(k) Retained Exception to Corrective Action Instructions, With No Changes

This paragraph restates the requirements of paragraph (k) of AD 2012-15-13, with no changes. If any discrepancy, including but not limited to any crack, broken fastener, loose fastener, or missing fastener is found during any inspection required by paragraph (g), (h), (i), or (j) of this AD, and Boeing Alert Service Bulletin 747-53A2507, dated April 21, 2005; or Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010; specifies to contact Boeing for appropriate action: Before further flight, repair the discrepancy using a method approved in accordance with the procedures specified in paragraph (t) of this AD.

(l) Retained Stage 2 Inspection: Work at STA 1140, With No Changes

This paragraph restates the requirements of paragraph (l) of AD 2012-15-13, with no changes. For all airplanes: Except as provided by paragraph (o) of this AD, at the time specified in paragraph 1.E, "Compliance," of Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010, do an open hole high frequency eddy current (HFEC) inspection for cracking in the forward and aft tension tie channels at 12 fastener locations inboard of the aluminum straps at STA 1140, and

before further flight do all applicable repairs. Do all actions in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010. Repeat the inspections thereafter at the time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010. Doing the modification required by paragraph (p) of this AD terminates the inspection requirements in this paragraph.

(m) Retained One-Time Inspection for Incorrectly Installed Angles, With No Changes

This paragraph restates the requirements of paragraph (m) of AD 2012-15-13, with no changes. For Group 1, Configuration 1, airplanes as identified in Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010: Except as provided by paragraph (o) of this AD, at the time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010, do a detailed inspection to determine if the angle is installed correctly, and before further flight re-install all angles that were installed incorrectly. Do all actions in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010.

(n) Retained One-Time Inspection for Cracks in Frames at Previous Tension Tie Locations, With No Changes

This paragraph restates the requirements of paragraph (n) of AD 2012-15-13, with no changes. For Group 1, Configuration 2, airplanes; and Groups 2 and 3 airplanes; as identified in Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010: Except as provided by paragraph (o) of this AD, at the time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010, do an open hole HFEC inspection for cracks at the fastener locations (STAs 1120, 1160, 1200, and 1220) where the tension tie previously attached to the frame prior to modification to the Boeing Special Freighter or Boeing Converted Freighter configuration, and before further flight do all applicable repairs. Do all actions in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010. Doing the modification required by paragraph (p) of this AD terminates the one-time inspection requirements in this paragraph.

(o) Retained Exception to Boeing Alert Service Bulletin 747-53A2507, Revision 1, Dated January 14, 2010, With No Changes

This paragraph restates the requirements of paragraph (o) of AD 2012-15-13, with no changes. Where paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010, specifies a compliance time relative to "the Revision 1 date of this service bulletin," this AD requires compliance within the specified compliance time after September 12, 2012 (the effective date of AD 2012-15-13).

(p) Retained Modification and Post-Modification Repetitive Inspections, With Revised Service Information and a New Exception

This paragraph restates the requirements of paragraph (p) of AD 2012-15-13, with revised service information and a new exception. Except as provided by paragraphs (p)(1), (p)(2), and (p)(3) of this AD: At the applicable times specified in paragraph 1.E., "Compliance," of Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011, modify the frame-to-tension-tie joints at STAs 1120 through 1220; do all related investigative and applicable corrective actions; do the repetitive post-modification detailed inspections for cracking of the tension tie and frame structure and all applicable corrective actions; and do the additional modification. Do all actions in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2559, Revision 1, dated

August 4, 2011; or Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014. Modifying the frame-to-tension-tie joints at STAs 1120 through 1220 terminates the repetitive inspection requirements of paragraphs (g) and (j) of this AD, the inspection requirements of paragraph (l) of this AD, and the one-time inspection requirement of paragraph (n) of this AD. As of the effective date of this AD, only Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014, may be used to accomplish the actions specified in this paragraph.

(1) Where paragraph 1.E., "Compliance," of Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011, specifies a compliance time relative to "the original issue date of this service bulletin," this AD requires compliance within the specified compliance time after September 12, 2012 (the effective date of AD 2012-15-13).

(2) Where Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011; or Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014; specifies to contact Boeing for repair instructions or additional modification requirements: Before further flight, repair the cracking or do the additional actions using a method approved in accordance with the procedures specified in paragraph (t) of this AD.

(3) For Group 3 through 5, Configuration 1 airplanes identified in Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014: Operators may accomplish the actions required by paragraph (p) of this AD within the applicable compliance times specified in paragraph 1.E., "Compliance" of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014.

(q) Retained Credit for Previous Actions, With No Changes

This paragraph restates the credit provided by paragraph (q) of AD 2012-15-13, with no changes. This paragraph provides credit for the corresponding actions required by paragraph (p) of this AD, if those actions were done before September 12, 2012 (the effective date of AD 2012-15-13), using Boeing Alert Service Bulletin 747-53A2559, dated January 8, 2009, which is not incorporated by reference in this AD.

(r) New Repetitive Post-Modification Eddy Current Inspections

Do an eddy current inspection of all areas of the modified tension ties for cracking, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014. Do the inspection at the time specified in Table 2 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014, except where paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014, specifies a compliance time relative to "the Revision 2 date of this service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD. If any crack is found, before further flight, repair the crack using a method approved in accordance with the procedures specified in paragraph (t) of this AD. If no crack is found, repeat the inspection thereafter at the intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014.

(s) New One-Time Surface HFEC Inspections

Do a surface HFEC inspection of the tension tie center section, for cracking in the forward and aft tension tie channels between STAs 1120 through 1220, in accordance with Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014. Do the inspection at the applicable time specified in Table 1 or Table 3 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014, except where paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014, specifies a compliance time relative to "the Revision 2 date of this service bulletin," this AD requires compliance within the specified compliance time after the effective

date of this AD. If any crack is found, before further flight, repair the crack using a method approved in accordance with the procedures specified in paragraph (t) of this AD.

(t) 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 (u)(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, 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.

(4) AMOCs approved previously for AD 2012-15-13, are approved as AMOCs for the corresponding provisions of this AD.

(u) Related Information

(1) For more information about this AD, contact Bill Ashforth, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6432; fax: 425-917-6590; email: bill.ashforth@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (v)(6) and (v)(7) of this AD.

(v) 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 April 22, 2016.

(i) Boeing Alert Service Bulletin 747-53A2559, Revision 2, dated May 13, 2014.

(ii) Reserved.

(4) The following service information was approved for IBR on September 12, 2012 (77 FR 47267, August 8, 2012).

(i) Boeing Alert Service Bulletin 747-53A2507, Revision 1, dated January 14, 2010.

(ii) Boeing Service Bulletin 747-53A2559, Revision 1, dated August 4, 2011.

(5) The following service information was approved for IBR on November 28, 2007 (72 FR 65655, November 23, 2007).

(i) Boeing Alert Service Bulletin 747-53A2507, dated April 21, 2005.

(ii) Reserved.

(6) 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>.

(7) 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.

(8) 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>.

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