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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2014-0253; Directorate Identifier 2013-NM-257-AD; Amendment 39-17908; AD 2014-15-06]

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 747-100B SUD, 747-200B, 747-300, 747-400, and 747-400D series airplanes. This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the upper deck tension ties are subject to widespread fatigue damage (WFD). This AD requires repetitive inspections for cracking in the upper deck tension ties, and related investigative and corrective actions if necessary; tension tie replacement; and post-replacement repetitive inspections for cracking in the upper deck tension ties, and related investigative and corrective actions if necessary. We are issuing this AD to detect and correct fatigue cracking of the upper deck tension ties. Severed or disconnected tension ties at multiple locations could result in rapid decompression and loss of structural integrity of the airplane.

DATES: This AD is effective September 2, 2014.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of September 2, 2014.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0253; 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: Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: nathan.p.weigand@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 747-100B SUD, 747-200B, 747-300, 747-400, 747-400D series airplanes. The NPRM published in the Federal Register on April 23, 2014 (79 FR 22596). The NPRM was prompted by an evaluation by the DAH indicating that the upper deck tension ties are subject to WFD. The NPRM proposed to require repetitive inspections for cracking in the upper deck tension ties, and related investigative and corrective actions if necessary; tension tie replacement; and post-replacement repetitive inspections for cracking in the upper deck tension ties, and related investigative and corrective actions if necessary. We are issuing this AD to detect and correct fatigue cracking of the upper deck tension ties. Severed or disconnected tension ties at multiple locations could result in rapid decompression and loss of structural integrity of the airplane.

Comments

We gave the public the opportunity to participate in developing this AD. We have considered the comment received. The Boeing Company supported the NPRM (79 FR 22596, April 23, 2014).

Conclusion

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting this AD as proposed except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (79 FR 22596, April 23, 2014) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (79 FR 22596, April 23, 2014).

Costs of Compliance

We estimate that this AD affects 76 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 |
|--|--|------------|-------------------------------------|---|
| Inspections (pre-modification and post-modification) | Up to 164 work-hours × \$85 per hour = \$13,940 per inspection cycle | \$0 | Up to \$13,940 per inspection cycle | Up to \$1,059,440 per inspection cycle. |
| Modification | 366 work-hours × \$85 per hour = \$31,110 | 0 | \$31,110 | \$2,364,360. |

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

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):



2014-15-06 The Boeing Company: Amendment 39-17908; Docket No. FAA-2014-0253; Directorate Identifier 2013-NM-257-AD.

(a) Effective Date

This AD is effective September 2, 2014.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 747-100B SUD, 747-200B, 747-300, 747-400, and 747-400D series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the upper deck tension ties are subject to widespread fatigue damage (WFD). We are issuing this AD to detect and correct fatigue cracking of the upper deck tension ties. Severed or disconnected tension ties at multiple locations could result in rapid decompression and loss of structural integrity of the airplane.

(f) Compliance

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

(g) Inspections, Related Investigative Actions, and Corrective Actions

For airplanes identified as Group 1, Configuration 2; and Group 2; in Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013: Before the accumulation of 10,000 flight cycles after conversion to special freighter or Boeing converted freighter configuration, or within 2,000 flight cycles after the effective date of this AD, whichever occurs later, do the actions specified in paragraph (g)(1) or (g)(2) of this AD, and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013, except as provided by paragraph (h) of this AD. Do all applicable related investigative and corrective actions before further flight. Repeat the inspection of the forward and aft tension tie channels thereafter at the applicable time and intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013.

(1) At each tension tie station from 880 to 1100: Do a detailed inspection for cracks in the forward and aft tension tie channels.

(2) At each tension tie station from 880 to 1100: Do a detailed inspection for cracks in the forward and aft tension tie channels, and do a surface high frequency eddy current (HFEC) inspection for cracks around fasteners in the tension tie channels.

(h) Exceptions to Service Information Specifications

If, during accomplishment of the related investigative action or inspections required by this AD, any cracking is found, and Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013, specifies to contact Boeing for repair instructions: Before further flight, do the repair using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(i) Tension Tie Replacement

After the accumulation of 13,000 total flight cycles; but before the accumulation of 22,000 flight cycles after conversion to special freighter or Boeing converted freighter configuration, or within 2,000 flight cycles after the effective date of this AD, whichever occurs later: Do the tension tie replacement, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013, except as provided by paragraph (h) of this AD. Accomplishment of the actions required by this paragraph terminates the inspection requirements of paragraph (g) of this AD.

(j) Post-tension Tie Replacement Inspections, Related Investigative Actions, and Corrective Actions

After accomplishing the actions required by paragraph (i) of this AD: At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013, do the actions specified in paragraph (j)(1) or (j)(2) of this AD; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013, except as provided by paragraph (h) of this AD. Do all applicable related investigative and corrective actions before further flight. Repeat the applicable inspection of the forward and aft tension tie channels thereafter at the applicable time and intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013.

(1) At each tension tie station from 880 to 1100: Do a detailed inspection for cracks in the forward and aft tension tie channels.

(2) At each tension tie station from 880 to 1100: Do a detailed inspection for cracks in the forward and aft tension tie channels, and do a surface HFEC inspection for cracks around fasteners in the tension tie channels.

(k) 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 (l)(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 required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

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

(l) Related Information

For more information about this AD, contact Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: nathan.p.weigand@faa.gov.

(m) 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 this AD specifies otherwise.

(i) Boeing Alert Service Bulletin 747-53A2866, dated December 4, 2013,

(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 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 July 13, 2014.

Jeffrey E. Duven,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.