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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-8181; Directorate Identifier 2016-NM-002-AD; Amendment 39-18765; AD 2016-26-07]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the nose wheel well is subject to widespread fatigue damage (WFD). This AD requires modification, inspections, and corrective actions of the nose wheel body structure. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective February 15, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of February 15, 2017.

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-2016-8181.

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-2016-8181; 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 (ACO), 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 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. The NPRM published in the Federal Register on July 28, 2016 (81 FR 49572) ("the NPRM"). The NPRM was prompted by an evaluation by the DAH indicating that the nose wheel well is subject to WFD. The NPRM proposed to require modification of the nose wheel body structure; a detailed inspection of the nose wheel body structure for any cracking; a surface HFEC or an open hole HFEC inspection of the vertical beam outer chord and web for any cracking; and all applicable related investigative actions including repetitive inspections, and other specified and corrective actions. We are issuing this AD to detect and correct fatigue cracking in the nose wheel well structure; such cracking could adversely affect the structural integrity of the airplane.

Comments

We gave the public the opportunity to participate in developing this AD. We have considered the comments received. Boeing and United Airlines supported 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.

Since the NPRM was Issued

Since the NPRM was issued, we have updated the AD with Boeing's new contact information.

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015. The service information describes procedures for modification of the nose wheel body structure; a detailed inspection of the nose wheel body structure for any cracking; a web surface HFEC and an open hole HFEC inspection of the vertical beam outer chord for any cracking; 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 107 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
Modification	408 work-hours × \$85 per hour = \$34,680	\$15,743	\$50,423	\$5,395,261.
Part 2 detailed inspection	140 work-hours × \$85 per hour = \$11,900 per inspection cycle	\$0	\$11,900 per inspection cycle	\$1,273,300 per inspection cycle.
Surface HFEC inspection	4 work-hours × \$85 per hour = \$340 per inspection cycle	\$0	\$340 per inspection cycle	Up to \$36,380 per inspection cycle.
Open hole HFEC inspection	4 work-hours × \$85 per hour = \$340 per inspection cycle	\$0	\$340 per inspection cycle	Up to \$36,380 per inspection cycle.

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):



2016-26-07 The Boeing Company: Amendment 39-18765; Docket No. FAA-2016-8181; Directorate Identifier 2016-NM-002-AD.

(a) Effective Date

This AD is effective February 15, 2017.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015.

(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 indicating that the nose wheel well is subject to widespread fatigue damage. We are issuing this AD to detect and correct fatigue cracking in the nose wheel well structure; such cracking could adversely affect the structural integrity of the airplane.

(f) Compliance

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

(g) Modification for Groups 1 and 4 Airplanes

For groups 1 and 4 airplanes as identified in Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015: Except as required by paragraph (j)(1) of this AD, at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015, modify the nose wheel body structure, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015.

(h) Inspection for Groups 1 and 4 Airplanes

For groups 1 and 4 airplanes on which the actions of paragraph (g) have been done: Except as required by paragraph (j)(1) of this AD, at the applicable time specified in paragraph 1.E.,

"Compliance," of Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015, do a detailed inspection of the nose wheel body structure for any cracking; do a surface high frequency eddy current inspection (HFEC) or an open hole HFEC inspection of the vertical beam outer chord and web for any cracking; and do all applicable related investigative, other specified actions, and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015; except as required by paragraph (j)(2) of this AD. Do all applicable related investigative actions, other specified actions, and corrective actions before further flight. Repeat the detailed inspection of the nose wheel body structure, and either the surface HFEC or the open hole HFEC inspection of the vertical beam outer chord, thereafter, at the applicable interval specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015.

(i) Inspection for Groups 2, 3, 5 and 6 Airplanes

For groups 2, 3, 5 and 6 airplanes identified in Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015: Except as required by paragraph (j)(1) of this AD, at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015, do a detailed inspection of the nose wheel well body structure for any cracking, and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015; except as required by paragraph (j)(2) of this AD. Do all related investigative and corrective actions before further flight. Repeat the detailed inspection thereafter at the applicable intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015.

(j) Exceptions to the Service Information

(1) Where Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015, specifies a compliance time "after the original issue date of this service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) If any crack is found during any inspection required by this AD, and Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015, specifies to contact Boeing for appropriate action, and specifies that action as "RC" (Required for Compliance): Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(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) 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) Except as required by paragraph (j)(2) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (k)(4)(i) and (k)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or sub-step is labeled "RC Exempt," then the RC requirement is removed from that step or sub-step. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(l) Related Information

For more information about this AD, contact Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle ACO, 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 the AD specifies otherwise.

(i) Boeing Alert Service Bulletin 747-53A2887, dated December 2, 2015.

(ii) Reserved.

(3) For Boeing 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>.

(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 December 15, 2016.

Victor Wicklund,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.