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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0204; Directorate Identifier 2012-NM-229-AD; Amendment 39-17510; AD 2013-14-05]

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 747-400 and 747-400F series airplanes. This AD was prompted by reports of cracking in the outboard flange of the longeron extension fittings, which attach to the wing-to-body fairing support frame. This AD requires repetitive inspections of the longeron extension fittings for cracking, and corrective actions if necessary. We are issuing this AD to detect and correct cracks in the longeron extension fittings, which can become large and adversely affect the structural integrity of the airplane.

DATES: This AD is effective August 26, 2013.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of August 26, 2013.

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 review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. 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>; 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 Document

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, Washington 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 to include an AD that would apply to the specified products. The NPRM published in the Federal Register on March 7, 2013 (78 FR 14731). The NPRM proposed to require repetitive inspections of the longeron extension fittings for cracking, and corrective actions if necessary.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (78 FR 14731, March 7, 2013) and the FAA's response to each comment.

United Airlines (UAL) did not have any technical comments regarding the NPRM (78 FR 14731, March 7, 2013).

Request to Change Applicability

UPS and Virgin Atlantic Airways (VIR) stated that airplane line numbers 1199 through 1419 inclusive are included in the effectivity of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, and that the applicability of the NPRM (78 FR 14731, March 7, 2013) includes airplane line numbers 1076 through 1419 inclusive. The commenters noted that Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, does not provide inspection or repair instructions for airplanes with line numbers prior to 1199. UPS requested that paragraph (c), "Applicability," in the NPRM be revised to match the effectivity included in the Boeing service information. We infer that VIR made the same request.

Boeing requested that changes be made to paragraph (c), "Applicability," and paragraph (i)(3), "Exceptions to Service Bulletin Specifications," of the NPRM (78 FR 14731, March 7, 2013), in regard to the applicability. Boeing noted that line number 1076, included in paragraph (c), "Applicability," does not align with any production line changes and the line numbers should be changed from 1076 through 1419 inclusive to 1097 through 1419 inclusive.

Boeing stated that paragraph (i)(3) of the NPRM (78 FR 14731, March 7, 2013) should be revised to clearly define the applicable airplanes because, as written, it could be interpreted to include more than the appropriate airplanes. Boeing requested that paragraph (i)(3) of the NPRM be revised to state "For airplanes not identified in Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, but are included in paragraph (c) of this AD: These airplanes are in Group 1 of the subject service bulletin for the purposes of this AD and are required to do the applicable actions specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012."

We agree with Boeing's position regarding paragraphs (c) and (i)(3) of this final rule. We had conservatively established the applicability as starting at line number 1076 based on the information available at the time the NPRM (78 FR 14731, March 7, 2013) was issued. Since that time, Boeing has determined that the manufacturing change started at line number 1097. Boeing advised that

Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, will be revised and the effectivity in that service bulletin will be changed to start with line number 1097. Based on this information, we revised paragraph (c) in this final rule to include line numbers 1097 through 1419 inclusive. We revised paragraph (i)(3) in this final rule to include text similar to that proposed by Boeing.

We do not agree with UPS and VIR that the applicability of this final rule should match the effectivity in Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012. As stated previously, Boeing advised us that Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, will be revised and the effectivity in the revised service bulletin will start with line number 1097. We have not changed this final rule in this regard.

Request to Clarify the Difference in the Line Numbers Between the Service Information and the NPRM (78 FR 14731, March 7, 2013)

Boeing requested changes to the Discussion section of the NPRM (78 FR 14731, March 7, 2013) to clarify the differences between the airplane line numbers (1199 through 1419 inclusive) identified in Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, and the airplane line numbers (1076 through 1419 inclusive) identified in paragraph (c) of the NPRM (78 FR 14731, March 7, 2013). Boeing stated that, after the release of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, a crack was reported on airplane line number 1101 and that the longeron extension fitting had been redesigned at line number 1097.

Boeing suggested that the text ". . . Subsequent analysis by Boeing indicated that the cracks were caused by fatigue combined with preload stress from improper fit-up during assembly. A manufacturing process change that began at line number 1199 might have resulted in preloading the longeron extension fittings . . ." be changed to "Subsequent review by Boeing has shown that the reported cracking correlates with this design change made at line number 1097."

We agree that the suggestions made by Boeing provide a more accurate description of how the affected line numbers were determined; however, this information is not restated in the Discussion section of this final rule, so no change is needed. The line numbers were changed from 1076 through 1419 inclusive to 1097 through 1419 inclusive in paragraph (c), "Applicability," of this final rule, as explained previously.

Concern Regarding Parts Availability

UAL stated that Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, does not include price and supply data for replacement longeron fittings. UAL asked if operators are expected to fabricate these replacement fittings. UAL noted that, if operators do not have the capabilities to fabricate fittings, it could be difficult for those operators to get parts.

We acknowledge the commenter's concern regarding the availability of replacement longeron fittings. Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, lists other available options as alternatives to replacing longeron extension fittings. The availability of required parts was considered when developing the compliance time for this AD. We have contacted Boeing regarding parts availability and Boeing responded that parts are available. Longeron extension fittings are a one piece forging and operators are not expected to fabricate these fittings. We have not changed this final rule in this regard.

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 (78 FR 14731, March 7, 2013) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (78 FR 14731, March 7, 2013).

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

Costs of Compliance

We estimate that this AD affects 41 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
High frequency eddy current inspection for cracking in longeron extension fittings	32 work-hours × \$85 per hour = \$2,720, per inspection cycle	\$0	\$2,720	\$111,520, per inspection cycle.
Option to do preventative modification instead of repetitive inspections	479 work-hours × \$85 per hour = \$40,715	0	40,715	\$1,669,315.

We estimate the following costs to do any necessary replacements that would be required based on the results of the inspection. We have no way of determining the number of aircraft that might need this replacement:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacement	464 work-hours × \$85 per hour = \$39,440	\$0	\$39,440

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

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

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):



2013-14-05 The Boeing Company: Amendment 39-17510; Docket No. FAA-2013-0204; Directorate Identifier 2012-NM-229-AD.

(a) Effective Date

This AD is effective August 26, 2013.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 747-400 and 747-400F series airplanes, certificated in any category, line numbers 1097 through 1419 inclusive.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Unsafe Condition

This AD was prompted by reports of cracking in the outboard flange of the longeron extension fittings, which attach to the wing-to-body fairing support frame. We are issuing this AD to detect and correct cracks in the longeron extension fittings, which can become large and adversely affect the structural integrity of the airplane.

(f) Compliance

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

(g) Inspection of Longeron Extension Fitting

For all airplanes: Except as required by paragraphs (i)(1) and (i)(4) of this AD, at the time specified in table 1 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, do a surface high frequency eddy current (HFEC) inspection of the left and right longeron extension fittings for cracking, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, except as required by paragraphs (i)(2) and (i)(3) of this AD. Do all applicable corrective actions before further flight. If no cracking is found, repeat the inspection thereafter at the intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, until a permanent repair, longeron extension fitting replacement, or preventative modification is done, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012.

(h) Inspection of Temporary Repair and Corrective Actions

For airplanes on which a temporary repair as specified in Boeing Alert Service Bulletin 747-53A2860 has been done: At the times specified in table 2 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, do a surface HFEC inspection of the temporary repair of the longeron extension fittings for cracking, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, except as required by paragraph (i)(3) of this AD. Do all applicable corrective actions before further flight.

(i) Exceptions to Service Information

(1) Where Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, specifies a compliance time relative to the issue date of that service bulletin, this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, specifies to contact Boeing for repair information: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(3) For airplanes not identified in Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, but included in paragraph (c) of this AD: These airplanes are in Group 1 for the purposes of this AD. This AD requires that the applicable actions specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, be accomplished on these airplanes.

(4) Where Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, specifies "all airplanes," this means all airplanes identified in paragraph (c) of this AD.

(j) Optional Terminating Action

Doing the permanent repair, longeron extension fitting replacement, or preventative modification, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2860, dated December 4, 2012, terminates the repetitive inspections required by paragraph (g) of this AD.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office, 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 the Related Information section 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.

(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, Washington 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 747-53A2860, dated December 4, 2012.

(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 June 25, 2013.

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