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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-9394; Directorate Identifier 2016-NM-162-AD; Amendment 39-18872; AD 2017-09-10]

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 all The Boeing Company Model 747-400, 747-400D, and 747-400F airplanes. This AD was prompted by a report of a crack in the left wing front spar web, found following a fuel leak. This AD requires repetitive inspections for cracking of the front spar web, and repairs if necessary. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective June 27, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of June 27, 2017.

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster 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-2016-9394.

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-2016-9394; 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 (ACO), 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 by adding an AD that would apply to all The Boeing Company Model 747-400, 747-400D, and 747-400F airplanes. The NPRM published in the Federal Register on December 2, 2016 (81 FR 86977) ("the NPRM"). The NPRM was prompted by a report indicating that a fuel leak in one airplane led to the discovery of a 13.4-inch crack in the left wing front spar web inboard of pylon number 2 between front spar station inboard (FSSI) 655.75 and FSSI 660. The NPRM proposed to require repetitive detailed, ultrasonic, and high frequency eddy current inspections for cracking of the front spar web between FSSI 628 and FSSI 713, and repairs if necessary. We are issuing this AD to detect and correct cracking in the front spar web, which could lead to fuel leaks and a consequent fire.

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

Boeing and commenter Melanie Smith stated that they support the NPRM.

Request To Update the Labor Costs

British Airways (BA), Cargolux Airlines (CLX), and KLM Royal Dutch Airlines (KLM) all stated that the actual work-hours required to do the mandated inspections are higher than the estimate listed in the NPRM. They estimated the inspections actually take between 137 and 159 work-hours, not the 55 work-hours stated in the NPRM.

We agree that the estimated work-hours should be increased. When issuing a service bulletin, Boeing estimates work-hours under expected conditions. As operators implement the service bulletin, they may find the actual work-hours are higher or lower than estimated. We have updated the Costs of Compliance section of this AD to reflect a conservative estimate of 159 work-hours per inspection cycle.

Request To Change the Initial and Repetitive Compliance Times

BA, CLX, and KLM all requested that we change the initial and/or repetitive compliance times to align with scheduled maintenance checks. BA proposed to do time-limited alternative inspections in the most critical web locations and to defer the majority of the web inspections to coincide with longer planned maintenance checks. CLX requested that we change the initial compliance time from 6 months to 24 months, and that we change the repetitive inspection interval from 1,200 flight cycles to 2,000 flight cycles. KLM requested that we extend the repetitive inspection intervals for Model 747 freighters from 1,200 flight cycles to 1,800 flight cycles. Each of the commenters noted that the actual work-hours are higher than estimated in the NPRM, and the inspections would require

additional downtime and costs if not done at the same time as regularly scheduled maintenance. None of the commenters provided engineering analyses to support their proposed extended compliance times.

We disagree with the requests. In developing an appropriate compliance time for this action, we considered the urgency associated with the subject unsafe condition and the practical aspect of accomplishing the required modification within a period of time that corresponds to the normal scheduled maintenance for most affected operators. Boeing is aware of the discrepancy in work-hours and is developing a request for a global alternative method of compliance (AMOC) to provide operators an alternative for both the areas of inspection and the compliance times. In addition, operators have the option of proposing an adjustment to the compliance times, supported by appropriate engineering analyses, in accordance with the provisions of paragraph (j) of this AD. We have not changed this final rule regarding this issue.

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.

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 747-57A2357, dated September 12, 2016. The service information describes procedures for repetitive detailed, ultrasonic, and high frequency eddy current inspections, and repairs of cracking of the front spar web between FSSI 628 and FSSI 713. 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 137 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	159 work-hours × $85 per hour = $13,515 per inspection cycle	$0	$13,515 per inspection cycle	$1,851,555 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):

2017-09-10 The Boeing Company: Amendment 39-18872; Docket No. FAA-2016-9394; Directorate Identifier 2016-NM-162-AD.

(a) Effective Date

This AD is effective June 27, 2017.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all The Boeing Company Model 747-400, 747-400D, and 747-400F airplanes, certificated in any category.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a report of a 13.4-inch crack in the left wing front spar web inboard of pylon number 2 between front spar station inboard (FSSI) 655.75 and FSSI 660, found following a fuel leak. We are issuing this AD to detect and correct cracking in the front spar web, which could lead to fuel leaks and a consequent fire.

(f) Compliance

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

(g) Repetitive Detailed, Ultrasonic, and High Frequency Eddy Current Inspections

At the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-57A2357, dated September 12, 2016, except as provided by paragraph (i) of this AD, do detailed, ultrasonic, and high frequency eddy current inspections for any cracking in the front spar web, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-57A2357, dated September 12, 2016. Repeat the inspections thereafter at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-57A2357, dated September 12, 2016.

(h) Repair of Any Cracking

If any crack is found during any inspection required by paragraph (g) of this AD, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (j) of

this AD. Thereafter, repeat the inspections specified in paragraph (g) of this AD at all unrepaired areas.

(i) Service Information Exceptions

Where paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 747-57A2357, dated September 12, 2016, specifies a compliance time "after the original date of this service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

(j) 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 (k) 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 (i) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (j)(4)(i) and (j)(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 substep is labeled "RC Exempt," then the RC requirement is removed from that step or substep. 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.

(k) Related Information

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

(l) 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 747-57A2357, dated September 12, 2016.

(ii) Reserved.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster 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 April 27, 2017.

Paul Bernado,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.