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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1051; Project Identifier AD-2022-00089-T; Amendment 39-22257; AD 2022-25-01]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY:

Federal Aviation Administration (FAA), DOT.

ACTION:

Final rule.

SUMMARY:

The FAA is adopting a new airworthiness directive (AD) for all The Boeing Company Model 707 and Model 727 airplanes. This AD was prompted by a report indicating cracking in fastener holes at the center wing box and at certain positions of the rear spar and lower skin on a Model 737-300 airplane. A cross model review determined that similar cracking of the fastener holes in the center wing box lower skin could occur on Model 707 and Model 727 airplanes. For Model 707 airplanes this AD requires repetitive detailed inspections of the center wing box lower skin for cracking and repetitive high frequency eddy current (HFEC) and ultrasonic (UT) inspections of the rear spar lower chord at a certain position for cracking, repetitive sealant application, and repair if necessary. For Model 727 airplanes this AD requires repetitive detailed inspections of the center wing box, lower skin, and rear spar lower chord at a certain location for cracking, repetitive sealant application, and repair if necessary. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective February 16, 2023.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of February 16, 2023.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA-2022-1051; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

- 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; website *myboeingfleet.com*.
- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at *regulations.gov* under Docket No. FAA-2022-1051.

FOR FURTHER INFORMATION CONTACT:

Sean Newell, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5266; email: Sean.M.Newell@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA 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 707 and Model 727 airplanes. The NPRM published in the **Federal Register** on September 15, 2022 ([87 FR 56596](#)). The NPRM was prompted by a report indicating cracking in fastener holes at the center wing box and at certain positions of the rear spar and lower skin on a Model 737-300 airplane. A cross model review determined that similar cracking of the fastener holes in the center wing box lower skin could occur on Model 707 and Model 727 airplanes. In the NPRM, the FAA proposed to require, for Model 707 airplanes, repetitive detailed inspections of the center wing box lower skin for cracking and repetitive HFEC and UT inspections of the rear spar lower chord at a certain position for cracking, repetitive sealant application, and repair if necessary. For Model 727 airplanes, the NPRM proposed to require repetitive detailed inspections of the center wing box, lower skin, and rear spar lower chord at a certain location for cracking, repetitive sealant application, and repair if necessary. The FAA is issuing this AD to address cracking in the center wing box lower skin or rear spar lower chord, which could result in the inability of the structure to sustain limit load and adversely affect the structural integrity of the airplane.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from Boeing and an individual who supported the NPRM without change.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information Under [1 CFR Part 51](#)

The FAA reviewed Boeing 707 Alert Requirements Bulletin A3544 RB, dated November 1, 2021. This service information specifies procedures for repetitive internal detailed inspections of the center wing box lower skin for cracking and repetitive internal surface HFEC and UT inspections of the rear spar lower chord between left body buttock line (LBBL) 40 and right body buttock line (RBBL) 40 for cracking, repetitive sealant application, and repair.

The FAA reviewed Boeing Alert Requirements Bulletin 727-57A0190 RB, dated September 13, 2021. This service information specifies procedures for repetitive internal detailed inspections for cracking of the center wing box, lower skin, and rear spar lower chord between LBBL 34.7 and RBBL 34.7, repetitive sealant application, 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 **ADDRESSES**.

Costs of Compliance

The FAA estimates that this AD affects 48 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspections and sealant application Model 707 airplanes	34 work-hours × \$85 per hour = \$2,890 per inspection cycle	\$0	\$2,890 per inspection cycle	\$66,470 per inspection cycle (23 airplanes).
Inspections and sealant application Model 727 airplanes	22 work-hours × \$85 per hour = \$1,870 per inspection cycle	0	\$1,870 per inspection cycle	\$46,750 per inspection cycle (25 airplanes).

The FAA has received no definitive data on which to base the cost estimates for the on-condition repairs 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.

The FAA is 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) Will not affect intrastate aviation in Alaska, and
- (3) 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

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: [9 U.S.C. 106\(g\)](#), [40113](#), [44701](#).

[§ 39.13](#) [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

(a) Effective Date

This airworthiness directive (AD) is effective February 16, 2023.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company airplanes specified in paragraphs (c)(1) through (3) of this AD, certificated in any category.

(1) Model 707-100 Long Body, -200, -100B Long Body, and -100B Short Body series airplanes.

(2) Model 707-300, -300B, -300C, and -400 series airplanes.

(3) Model 727, 727C, 727-100, 727-100C, 727-200, and 727-200F series airplanes.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a report indicating cracking in fastener holes at the center wing box and at certain positions of the rear spar and lower skin on a Model 737-300 airplane. A cross model review determined that similar cracking of the fastener holes in the center wing box lower skin could occur on Model 707 and Model 727 airplanes. The FAA is issuing this AD to address cracking in the center wing box lower skin or rear spar lower chord, which could result in the inability of the structure to sustain limit load and adversely affect the structural integrity of the airplane.

(f) Compliance

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

(g) Required Actions for Group 1 Model 727 Airplanes

For airplanes identified as Group 1 in Boeing Alert Requirements Bulletin 727-57A0190 RB, dated September 13, 2021: Within 120 days after the effective date of this AD, inspect the airplane and do all applicable on-condition actions using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(h) Required Actions for Groups 2 and 3 Model 727 Airplanes and All Model 707 Airplanes

Except as specified by paragraph (i) of this AD: At the applicable times specified in the “Compliance” paragraph of Boeing 707 Alert Requirements Bulletin A3544 RB, dated November 1, 2021; or Boeing Alert Requirements Bulletin 727-57A0190 RB, dated September 13, 2021; as applicable, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing 707 Alert Requirements Bulletin A3544 RB, dated November 1, 2021; or Boeing Alert Requirements Bulletin 727-57A0190 RB, dated September 13, 2021, as applicable.

Note 1 to paragraph (h):

Guidance for accomplishing the actions required by this AD can be found in Boeing 707 Alert Service Bulletin A3544, dated November 1, 2021, which is referred to in Boeing 707 Alert Requirements Bulletin A3544 RB, dated November 1, 2021; and Boeing Alert Service Bulletin 727-57A0190, dated September 13, 2021, which is referred to in Boeing Alert Requirements Bulletin 727-57A0190 RB, dated September 13, 2021.

(i) Exceptions to Service Information Specifications

(1) Where the Compliance Time columns of the tables in the “Compliance” paragraph of Boeing 707 Alert Requirements Bulletin A3544 RB, dated November 1, 2021, uses the phrase “the original issue date of Requirements Bulletin 707A3544 RB” this AD requires using “the effective date of this AD.”

(2) Where the Compliance Time columns of the tables in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 727-57A0190 RB, dated September 13, 2021, uses the phrase “the original issue date of Requirements Bulletin 727-57A0190 RB” this AD requires using “the effective date of this AD.”

(3) Where Boeing 707 Alert Requirements Bulletin A3544 RB, dated November 1, 2021, specifies contacting Boeing for repair instructions: This AD requires doing the repair using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(4) Where Boeing Alert Requirements Bulletin 727-57A0190 RB, dated September 13, 2021, specifies contacting Boeing for repair instructions: This AD requires doing the repair using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles ACO Branch, 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 responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k)(1) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards 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 Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO Branch, FAA, 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.

(k) Additional Information

(1) For more information about this AD, contact Sean Newell, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5266; email: Sean.M.Newell@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (l)(3) and (4) of this AD.

(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 707 Alert Requirements Bulletin A3544 RB, dated November 1, 2021.

(ii) Boeing Alert Requirements Bulletin 727-57A0190 RB, dated September 13, 2021.

(3) For 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; website myboeingfleet.com.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(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, fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on November 22, 2022.

Christina Underwood,

Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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