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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0816; Project Identifier AD-2022-00355-T; Amendment 39-22477; AD 2023-12-18]

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 certain The Boeing Company Model 747-8 and -8F series airplanes. This AD was prompted by reports of cracking in stringers and splice fittings located at stringer splices at multiple body stations. This AD requires an inspection of each free flange of the stringers at the stringer splice for the presence of radius fillers at fastener locations, an inspection for cracking of the stringers and stringer splice fittings at certain stringer splice locations, and applicable on-condition actions. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective August 11, 2023.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 11, 2023.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA–2022–0816; 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–2022–0816.

FOR FURTHER INFORMATION CONTACT:

Stefanie Roesli, Aviation Safety Engineer, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: 206–231–3964; email: stefanie.n.roesli@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 certain The Boeing Company Model 747–8 and –8F series airplanes. The NPRM published in the **Federal Register** on September 8, 2022 ([87 FR 54917](#)). The NPRM was prompted by reports of cracking in stringers and splice fittings located at stringer splices at multiple body stations. In the NPRM, the FAA proposed to require an inspection of each free flange of the stringers at the stringer splice for the presence of radius fillers at fastener locations, an inspection for cracking of the stringers and stringer splice fittings at certain stringer splice locations, and applicable on-condition actions. The FAA is issuing this AD to address such cracking, which could result in the inability of a structural element to sustain limit load and could affect structural integrity of the airplane.

The FAA issued a supplemental notice of proposed rulemaking (SNPRM) to amend [14 CFR part 39](#) by adding an AD that would apply to certain The Boeing Company Model 747–8 and –8F series airplanes. The SNPRM published in the **Federal Register** on April 6, 2023 ([88 FR 20438](#)). The SNPRM was prompted by additional reports of cracked stringers, with a total of 595 cracked stringers reported since the issue was initially evaluated in 2020. In May 2022, cracked stringers were found in a location where the previously repaired stringer location had accumulated zero flight cycles (FC) since the repair. Due to the large number of crack findings and the unknown long-term reliability of repairs, combined with airplanes with low utilization rates that may not reach the initial compliance time in the NPRM (before 12,000 total flight cycles or within 38 months after the effective date of this AD, whichever occurs later) for an extended period of time, the FAA determined that it is necessary to add a calendar-based compliance time for certain actions. The FAA therefore determined that a more

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appropriate compliance time for the initial inspections is before 12,000 total FC, or within 8 years after the date of issuance of the original certificate of airworthiness or the original export certificate of airworthiness, whichever occurs first; or within 38 months after the effective date of this AD; whichever occurs later. The FAA also determined that a calendar-based compliance time should be added to the repeat inspection intervals too. The FAA is issuing this AD to address such cracking, which could result in the inability of a structural element to sustain limit load and could affect structural integrity of the airplane.

Discussion of Final Airworthiness Directive

Comments

The FAA received a comment from The Boeing Company who supported the SNPRM 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 SNPRM. None of the changes will increase the economic burden on any operator.

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

The FAA reviewed Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022. This service information specifies procedures for an inspection of each free flange of the stringers at the stringer splice for the presence of radius fillers at fastener locations, an inspection for cracking of the stringers and stringer splice fittings at certain stringer splice locations, and applicable on-condition actions. On-condition actions include follow-on detailed inspections for cracking or the presence of radius fillers, removal or installation of radius fillers, 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 40 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
Inspection for radius filler	Up to 124 work-hours × \$85 per hour = \$10,540	None	Up to \$10,540	Up to \$421,600.
Inspection for cracking	Up to 244 work-hours × \$85 per hour = \$20,740	None	Up to \$20,740	Up to \$829,600.

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Inspection for cracking or for radius fillers	1 work-hour × \$85 per hour = \$85	None	\$85 per inspection location.
Removing radius fillers and inspection	7 work-hours × \$85 per hour = \$595	None	\$595 per location.
Replacement of cracked splice channel	300 work-hours × \$85 per hour = \$25,500	\$809	\$26,309 per replacement.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

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

[§ 39.13](#) [Amended]

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

2023–12–18 The Boeing Company: Amendment 39–22477; Docket No. FAA–2022–0816; Project Identifier AD–2022–00355–T.

(a) Effective Date

This airworthiness directive (AD) is effective August 11, 2023.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 747–8 and –8F series airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of cracking in stringers and splice fittings located at stringer splices at multiple body stations. The FAA is issuing this AD to address such cracking, which could result in

the inability of a structural element to sustain limit load and could affect structural integrity of the airplane.

(f) Compliance

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

(g) Required Actions

Except as specified by paragraph (h) of this AD: At the applicable times specified in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin 747–53A2907, dated March 3, 2022, which is referred to in Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022.

(h) Exceptions to Service Information Specifications

(1) Where the Compliance Time columns of the tables in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022, use the phrase “the original issue date of Requirements Bulletin 747–53A2907 RB,” this AD requires using “the effective date of this AD.”

(2) Where Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022, specifies contacting Boeing for repair instructions: This AD requires doing the repair using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

(3) Where the Compliance Time columns of the tables in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022, use the phrase “Before 12,000 total flights cycles,” this AD requires using “Before 12,000 total flight cycles, or within 8 years after the date of issuance of the original certificate of airworthiness or the original export certificate of airworthiness, whichever occurs first.”

(4) Where the Compliance Time columns of the tables in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022, uses the phrase “Within 9,600 flight cycles after the last detailed inspection,” this AD requires using “Within 9,600 flight cycles or 8 years after the last detailed inspection, whichever occurs first.”

(5) Where the Compliance Time columns of the tables in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 747–53A2907 RB, dated March 3, 2022, uses the phrase “Within 4,600 flight cycles after the last detailed inspection,” this AD requires using “Within 4,600 flight cycles or 8 years after the last detailed inspection, whichever occurs first.”

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, AIR–520 Continued Operational Safety 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 (j) 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 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, AIR-520, Continued Operational Safety Branch, 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.

(j) Related Information

(1) For more information about this AD, contact Stefanie Roesli, Aviation Safety Engineer, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3964; email: stefanie.n.roesli@faa.gov.

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

(k) 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 Requirements Bulletin 747-53A2907 RB, dated March 3, 2022.

(ii) [Reserved]

(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 June 13, 2023.

Michael Linegang,

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

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