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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-1301; Project Identifier AD-2024-00035-T; Amendment 39-23001; AD 2025-06-13]

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 787-9 and 787-10 airplanes. This AD was prompted by reports that some floor beam side-of-body fittings have been manufactured with an incorrect material type. This AD requires replacing the incorrectly manufactured floor beam side-of-body fittings, inspecting the fuselage frame and fastener holes for damage, and repairing any damage. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective July 2, 2025.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of July 2, 2025.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA-2024-1301; 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 Boeing material 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; website*myboeingfleet.com*.
- You may view this material 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-2024-1301.

FOR FURTHER INFORMATION CONTACT:

Joseph Hodgin, Aviation Safety Engineer, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3962; email: *Joseph.J.Hodgin@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 (Boeing) Model 787-9 and 787-10 airplanes. The NPRM published in the **Federal Register** on May 17, 2024 (89 FR 43344). The NPRM was prompted by reports that some floor beam side-of-body fittings have been manufactured with an incorrect material type between station 1233 and station 1593. The incorrect material type is a grade 1 or 2 commercially pure unalloyed titanium, which has significantly reduced strength, fatigue, and damage-tolerance properties compared to the type design grade 5 Ti-6AI-4V material.

In the NPRM, the FAA proposed to require replacing the incorrectly manufactured floor beam side-of-body fittings, inspecting the fuselage frame and fastener holes for damage, and repairing any damage. The FAA is issuing this AD to address the floor beam side-of-body fittings that do not meet type design and prevent failure of the fittings. The unsafe condition, if not addressed, could result in the inability of the surrounding principal structure elements to sustain limit loads and damage to critical systems under the floor; these conditions could cause loss of control of the airplane. Additionally, in the event of an emergency landing or full certified rapid decompression, failure of multiple adjacent fittings could result in the inability of the passenger floor grid to maintain the loads and could result in serious injury or impeded egress for passengers.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from nine commenters. The following presents the comments received on the NPRM and the FAA's response to each comment.

The Air Line Pilots Association, International and an individual supported the NPRM without change.

Request To Use High Frequency Eddy Current (HFEC) as an Alternative Inspection Method

Air Canada, American Airlines, Boeing, KLM Royal Dutch Airlines (KLM), Qantas Airways (Qantas), and United Airlines (United) requested the FAA allow an HFEC inspection as an alternative inspection method. Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, incorporates HFEC as an optional inspection method for determining the type of titanium material. Boeing stated that the original X-ray fluorescence spectrometry technology is still a valid method, however it is controlled for export in some areas and may not be available to all operators.

FAA agrees to allow HFEC as an alternative inspection method. The FAA has changed this AD to require the actions in Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, instead of Issue 001, and to give credit for complying with Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 001, dated December 8, 2023, before the effective date of this AD.

Request To Correct a Part Number

All Nippon Airways requested that the FAA correct a part number for a nut in Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 001, dated December 8, 2023, from part number BACN11Z8CK to part number BACN11Z9CK.

The FAA agrees; however, Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, has corrected this typographical error. As stated previously, the FAA has updated this AD to require compliance with Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, instead of Issue 001. No further change to this AD is necessary.

Request To Defer Non-Conforming Parts Replacement

KLM requested that the FAA allow a grace period after the inspection before requiring replacement of any incorrectly manufactured floor beam side-of-body fittings. KLM added that a period of 100 flight cycles or 750 flight hours (whichever occurs first) would enable airlines to plan fitting replacements without the need to cancel flights.

The FAA does not agree. An airplane with an incorrectly manufactured floor beam side-of-body fitting does not conform to its FAA-certificated type design, nor is it in a condition for safe operation, and therefore is not airworthy until a properly approved repair has been made. The incorrectly manufactured floor beam side-of-body fittings are significantly understrength, cannot withstand regulatory required loads, and do not provide an adequate level of safety. The FAA has not changed this AD in this regard.

Request To Correct a Typographical Error

United requested that the FAA revise paragraph (e), Unsafe Condition, of the proposed AD to remove the extraneous word “in” in the phrase “to sustain limit loads and in damage to . . .”

The FAA agrees to correct the typographical error. The FAA has revised paragraph (e) of this AD

accordingly.

Request To Correct a Footnote in Tasks of Boeing Alert Requirements Bulletin

United requested that the FAA correct a phrase in footnote 2 of Tasks 3, 5, 8, 10, 13, 15, 18, 20, 23, 25, 28, 31, 33, 36, 38, 41, 43, 46, 48, 51, 53, and 56 in Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, from “Chamfer edges of fastener holes common to the SOB fitting” to “Chamfer edges of fastener holes common to the fuselage frame, once installed.” United Airlines pointed out this error in Issue 001 of the document, and that it is also in Issue 002.

The FAA agrees that the requested change is necessary. The FAA has added paragraph (h)(3) of this AD to provide an exception to Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, to correct the language in the footnote.

Request To Correct a Part Quantity

United requested that the FAA change the quantity of “1” spacer in Table 1 of Tasks 3, 5, 8, 10, 13, 15, 18, 20, 23, 25, 28, 31, 33, 36, 38, 41, 43, 46, 48, 51, 53, and 56 in Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 001, dated December 8, 2023, to match the quantity “0” to “3” in the footnote.

The FAA agrees with the comment. However, Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, which is incorporated by reference in this AD instead of Issue 001, contains the correct spacer quantity. No further change to this AD is necessary.

Concern About Spare Parts Availability

Qantas stated that it supported the proposed requirements but expressed its concern regarding spare parts availability. Quantas requested assurance that Boeing has sufficient spares to meet the expected demand.

Boeing Alert Service Bulletin B787-81205-SB530084-00, Issue 002, dated September 5, 2024, contains information regarding parts availability and order lead times. The FAA acknowledges the commenter's concern but cannot base its AD action on whether spare parts are available or can be produced.

Concern About Quality Control

Qantas expressed concern regarding whether the quality control issues with the non-conforming titanium fittings have been addressed.

As part of the safety investigation related to this AD, all parts under the Boeing quality system were inspected for conformity. In addition, Boeing performed a root cause analysis and took corrective actions to prevent reoccurrence of similar issues.

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 changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Material Incorporated by Reference Under 1 CFR Part 51

The FAA reviewed Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024. This material specifies performing an X-ray fluorescence spectrometer inspection or an HFEC inspection of the floor beam side-of-body fittings between station 1233 and station 1593 to determine whether the fitting was manufactured with type design grade 5 Ti-6AI-4V material. Alternatively, operators may replace all floor beam side-of-body fittings between station 1233 and station 1593 with fittings made of the correct material without performing an inspection. For any floor beam side-of-body fitting that needs replacement, this material specifies inspecting the fuselage frame and fuselage fastener holes for damage, repairing any damage, and installing a floor beam side-of-body fitting made of the correct material.

This material 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

The FAA estimates that this AD affects 60 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated Costs—Option 1

Action	Labor cost	Parts cost	Cost per airplane	Cost on U.S. operators
X-ray fluorescence spectrometer inspection or HFEC inspection to determine material type	77 work-hours × $85 per hour = $6,545	$0	$6,545	Up to $392,700.

Estimated Costs—Option 2

Action	Labor cost	Parts cost	Cost per airplane
Replace all affected floor beam side-of-body fittings and inspect for damage	527 work-hours × $85 per hour = $44,795	$218,250	$263,045

The FAA estimates the following costs to do any replacements that would be required based on the results of the inspection. The agency has no way of determining the number of aircraft that might need this replacement:

On-Condition Costs for Option 1

Action	Labor cost	Parts cost	Cost per fitting
Replace floor beam side-of-body fitting and inspect for damage (per fitting)	18 work-hours × $85 per hour = $1,530	$8,730	$10,260

The extent of damage found during the inspection done when the fittings are replaced could vary significantly from airplane to airplane. The FAA has no way of determining how much damage may be found on each airplane, the cost to repair damaged parts on each airplane, or the number of airplanes that may require repair.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some 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:

2025-06-13 The Boeing Company: Amendment 39-23001; Docket No. FAA-2024-1301; Project Identifier AD-2024-00035-T.

(a) Effective Date

This airworthiness directive (AD) is effective July 2, 2025.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 787-9 and 787-10 airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports that some floor beam side-of-body fittings have been manufactured with an incorrect material type between station 1233 and station 1593. The FAA is issuing this AD to address the floor beam side-of-body fittings that do not meet type design and prevent failure of the fittings. The unsafe condition, if not addressed, could result in the inability of the surrounding principal structure elements to sustain limit loads and damage to critical systems under the floor; these conditions could cause loss of control of the airplane. Additionally, in the event of an emergency landing or full certified rapid decompression, failure of multiple adjacent fittings could result in the

inability of the passenger floor grid to maintain the loads and could result in serious injury or impeded egress for passengers.

(f) Compliance

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

(g) Required Actions

Except as specified in paragraph (h) of this AD: At the applicable times specified in the "Compliance" paragraph of Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024.

Note 1 to paragraph (g):

Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin B787-81205-SB530084-00, Issue 002, dated September 5, 2024, which is referred to in Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024.

(h) Exceptions to Service Information Specifications

(1) Where the "Boeing Recommended Compliance Time" column in the tables under the "Compliance" paragraph of Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, refers to "the Issue 001 date of Requirements Bulletin B787-81205-SB530084-00 RB," this AD requires using the effective date of this AD.

(2) Where Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, specifies contacting Boeing for repair instructions, this AD requires doing the repair before further flight using a method approved in accordance with the procedures in paragraph (i) of this AD.

(3) Where footnote [2] in Tasks 3, 5, 8, 10, 13, 15, 18, 20, 23, 25, 28, 31, 33, 36, 38, 41, 43, 46, 48, 51, 53, and 56 of Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024, uses the phrase "Chamfer edges of fastener holes common to the SOB fitting," for this AD, replace that phrase with "Chamfer edges of fastener holes common to the fuselage frame, once installed."

(i) Credit for Previous Actions

This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Requirements Bulletin B787-81205-SB530084-00 RB, Issue 001, dated December 8, 2023.

(j) 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 (k)(1) of this AD. Information may be emailed to: *AMOC@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, 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) Related Information

(1) For more information about this AD, contact Joseph Hodgin, Aviation Safety Engineer, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3962; email: *Joseph.J.Hodgin@faa.gov*.

(2) Material identified in this AD that is not incorporated by reference is available at the address specified in paragraph (l)(3) of this AD.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference 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 B787-81205-SB530084-00 RB, Issue 002, dated September 5, 2024.

(ii) [Reserved]

(3) For service information, 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; 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 material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit *www.archives.gov/federal-register/cfr/ibr-locations* or email *fr.inspection@nara.gov*.

Issued on March 24, 2025.

Peter A. White,

Deputy Director, Integrated Certificate Management Division, Aircraft Certification Service.

[FR Doc. 2025-09506 Filed 5-27-25; 8:45 am]

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