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Issued on June 9, 2021.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0981; Project Identifier AD-2020-00919-T; Amendment 39-21615; AD 2021-13-10]

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 777 airplanes. This AD was prompted by reports indicating that during investigation of a fuel leak, fatigue cracking was found on the forward inboard side of the fuel tank access door cutouts on the left and right lower wing skin. The cause of the cracking is attributed to corrosion damage. This AD requires repetitive inspections for any existing repair of the wing lower skin fuel tank and dry bay access door cutouts on the left and right lower wing skin, 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 19, 2021.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 19, 2021.

ADDRESSES: 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; internet <https://www.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 <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0981.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0981; 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.

FOR FURTHER INFORMATION CONTACT: Luis A. Cortez-Muniz, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3958; email: luis.a.cortez-muniz@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 777 airplanes. The NPRM published in the **Federal Register** on November 18, 2020 (85 FR 73430). The NPRM was prompted by reports indicating that during investigation of a fuel leak, fatigue cracking was found on the forward inboard side of the fuel tank access door cutouts on the left and right lower wing skin. The cause of the cracking is attributed to corrosion damage. In the NPRM, the FAA proposed to require repetitive inspections for any existing repair of the wing lower skin fuel tank and dry bay access door cutouts on the left and right lower wing skin, and applicable on-condition actions. The FAA is issuing this AD to address fatigue cracking, which could result in the inability of a principal structural element to sustain limit load, and consequent reduced structural integrity of the airplane.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from Boeing and United Airlines. Those commenters supported the NPRM without change.

The FAA received additional comments from six commenters,

including AeroLogic, Air France, American Airlines, Emirates, FedEx Express (FedEx), and one individual. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Revise Compliance Time

AeroLogic, Air France, American Airlines, and Emirates asked that the FAA re-evaluate and extend the initial and repetitive calendar-based compliance times in the proposed AD to match heavy maintenance intervals. The commenters stated that the 1,125-day compliance time does not align with existing MPD intervals of 3,000 days and 4,500 days or the existing heavy maintenance intervals. One commenter stated that, as a long-range freight specialist it has an average flight hour/flight cycle ratio of 6.0 to 6.3, thus reaching the flight hour LOV of the Model 777F before reaching the flight cycle utilization that the aircraft with crack findings had at the time of crack detection. The commenters also stated that more frequent opening and closing of the access doors could increase the chance of corrosion, although the airplane with the initial crack finding was 19 years old at the time cracking was found, and Boeing reported that only minimal corrosion was found during lab testing of the cracking.

The FAA does not agree with the requests to extend the compliance time. The compliance times were coordinated with the design approval holder based on its analysis and fleet findings. Additionally, the commenters did not provide substantiation data that shows that the proposed extended inspection intervals provide adequate crack detection. However, under the provisions of paragraph (i) of this AD, the FAA will consider requests for approval of an extension of the compliance time if sufficient data are submitted to substantiate that the extension would provide an acceptable level of safety. This AD has not been changed in this regard.

Request To Change Exception

Air France stated that paragraph (h)(1) of the proposed AD would require using "the effective date of this AD," except where Boeing Alert Requirements Bulletin 777-57A0118 RB, dated June 23, 2020, uses the phrase "the original issue date of Requirements Bulletin 777-57A0118 RB" in a note or flag note. Air France noted that making the exception depend on a note or flag note is confusing. Air France asked that the FAA change the exception to apply throughout the proposed AD requirements instead of depending on

where the phrase “the original issue date of Requirements Bulletin 777–57A0118 RB” is used.

The FAA agrees to change the exception in paragraph (h)(1) of this AD. The exception specified in paragraph (h)(1) of the proposed AD was intended to apply only to certain dates referenced in Boeing Alert Requirements Bulletin 777–57A0118 RB, dated June 23, 2020. The exception applies to the associated date in the Effectivity paragraph and the Condition and Compliance columns of tables 1 through 10 of paragraph 1.E., “Compliance,” and not to flag note (c) in the tables. Repairs accomplished relative to the original issue date of Requirements Bulletin 777–57A0118 RB, as specified in flag note (c) in those tables, do not need an exception for compliance with this AD. The FAA has changed paragraph (h)(1) of this AD accordingly.

Request To Change Estimated Work Hours for Inspection

FedEx stated that the hours estimated for “the inspection” in the Costs of Compliance section of the NPRM is lower than its forecast of 80 work-hours and 60 elapsed hours. FedEx noted that the NPRM specified only 34 work-hours.

The FAA infers that the commenter is asking to increase the work hours for the general visual inspections specified in the Costs of Compliance section of this AD to 80 work-hours. We do not agree. The estimate of 34 work-hours includes access and close for accomplishing the general visual inspections. The FAA recognizes that additional on-condition inspections could be required, depending on the results of the general visual inspection. However, since the FAA has no way of determining the number of aircraft that might need these on-condition inspections, the hours and cost estimates for the additional inspections are provided in the on-condition actions table on a per-airplane basis. This AD has not been changed in this regard.

Request To Allow Detailed Inspections for Certain Airplanes

One individual asked that the FAA allow detailed and high frequency eddy current (HFEC) inspections for airplanes in Group 3, Condition 17 (for the right wing), similar to the detailed and HFEC inspections allowed for airplanes in Group 3, Condition 14 (for the left wing). The commenter observed that Condition 14 specifies detailed and HFEC inspections, whereas Condition 17 specifies contacting Boeing. The commenter stated that these conditions are the same and symmetrical for the left- and right-hand wings.

The FAA does not agree with the commenter’s request. Configurations on Group 3 airplanes may be different on the left and right sides due to previously approved repairs or production changes. The inspection procedures were coordinated with the design approval holder regarding the airplane configurations. Therefore, this AD has not been changed in this regard.

Request To Clarify Cost Estimate

AeroLogic stated that the proposed compliance time would result in an economic impact that was not considered in the operator burden provided in the cost estimate.

The FAA provides the following clarification: The cost information describes only the direct costs of the specific actions required by this AD. Based on the best data available, the manufacturer provided the number of work hours necessary to do the required actions. This number represents the time necessary to perform only the actions actually required by this AD. We recognize that, in doing the actions required by an AD, operators might incur incidental costs in addition to the direct costs. The cost analysis in AD rulemaking actions, however, typically does not include incidental costs such as the time necessary for planning or time necessitated by other administrative actions. Those incidental costs, which might vary significantly

among operators, are almost impossible to calculate.

Aerologic also stated that the aircraft maintenance manual (AMM) recommends using new gaskets to prevent fuel leaks after each tank access. Therefore, the parts cost should be estimated with up to 240 USD per gasket. At 18 Access Doors opened for every repeat inspection, this sums up to 4,320 USD per aircraft for each inspection cycle.

The FAA does not agree to change the estimated parts costs, as the actions in the AMM are not required by this AD.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. 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 Alert Requirements Bulletin 777–57A0118 RB, dated June 23, 2020. The service information describes procedures for repetitive general visual inspections for any existing repair of the fuel tank access door cutouts on the left and right lower wing skin, and applicable on-condition actions. On-condition actions include detailed and HFEC inspections for any corrosion, fretting, and cracking; a blend out of corrosion or fretting that meets certain criteria; 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 221 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

ESTIMATED COSTS FOR REQUIRED ACTIONS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
General visual inspection	Up to 34 work-hours × \$85 per hour = Up to \$2,890 per inspection cycle.	\$0	Up to \$2,890 per inspection cycle.	Up to \$638,690 per inspection cycle.

The FAA estimates the following costs to do any necessary on-condition

actions that would be required. The FAA has no way of determining the

number of aircraft that might need these on-condition actions:

ESTIMATED COSTS OF ON-CONDITION ACTIONS *

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Blend out of corrosion or fretting.	2 work-hours × \$85 per hour = \$170 per blend out.	\$0	\$170 per blend out	\$170 per blend out.
Repair of crack 0.2 inch or less with no blend repair or keyway trim modification.	2 work-hours × \$85 per hour = \$170 per crack.	0	\$170 per crack	\$170 per crack.
Detailed and HFEC inspections.	2 work-hours × \$85 per hour = \$170 per access door cutout.	0	\$170 per access door cutout	\$170 per access door cutout.

* The FAA has received no definitive data on which to base the cost estimates for the on-condition repairs specified in this AD that require obtaining an alternative method of compliance (AMOC).

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:

2021–13–10 The Boeing Company:
Amendment 39–21615; Docket No. FAA–2020–0981; Project Identifier AD–2020–00919–T.

(a) Effective Date

This airworthiness directive (AD) is effective August 19, 2021.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 777–200, –200LR, –300, –300ER, and 777F series airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin 777–57A0118 RB, dated June 23, 2020.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports indicating that during investigation of a fuel leak, fatigue cracking was found on the forward inboard side of the fuel tank access door cutouts on the left and right lower wing skin. The cause of the cracking is attributed to corrosion damage. The FAA is issuing this AD to address such cracking, which could result in the inability of a principal structural element to sustain limit load, and consequent reduced 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 777–57A0118 RB, dated June 23, 2020, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin 777–57A0118 RB, dated June 23, 2020.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin 777–57A0118, dated June 23, 2020, which is referred to in Boeing Alert Requirements Bulletin 777–57A0118 RB, dated June 23, 2020.

(h) Exceptions to Service Information Specifications

(1) Where the "Effectivity" paragraph, and the Condition and Compliance Time columns of the tables in the "Compliance" paragraph, of Boeing Alert Requirements Bulletin 777–57A0118 RB, dated June 23, 2020, use the phrase "the original issue date of Requirements Bulletin 777–57A0118 RB," this AD requires using "the effective date of this AD."

(2) Where Boeing Alert Requirements Bulletin 777–57A0118 RB, dated June 23, 2020, specifies contacting Boeing for repair instructions or for alternative inspections: This AD requires doing the repair, or doing the alternative inspections and applicable on-condition actions using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle 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 (j)(1) 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, Seattle 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.

(j) Related Information

For more information about this AD, contact Luis A. Cortez-Muniz, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3958; email: luis.a.cortez-muniz@faa.gov.

(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 777-57A0118 RB, dated June 23, 2020.

(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; internet <https://www.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, email fedreg.legal@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on June 10, 2021.

Ross Landes,

Deputy Director for Regulatory Operations, Compliance & Airworthiness Division, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0258; Project Identifier AD-2020-01565-T; Amendment 39-21637; AD 2021-14-10]

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 747-400, 747-400D, and 747-400F series airplanes. This AD was prompted by reports of burned Boeing Material Specification (BMS) 8-39 urethane foam found in certain locations on the airplane; investigation revealed that the fire-retardant properties degrade with age. This AD requires inspecting the insulation blankets in certain areas of the forward cargo compartment for exposed BMS 8-39 urethane foam, not encapsulated by a protective fire resistant barrier, and for seal integrity, and replacing the BMS 8-39 urethane foam and seal if necessary. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective August 19, 2021.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 19, 2021.

ADDRESSES: 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; internet <https://www.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 <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0258.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0258; 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.

FOR FURTHER INFORMATION CONTACT: Julie Linn, Aerospace Engineer, Cabin Safety and Environmental Systems Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3584; email: Julie.Linn@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 747-400, 747-400D, and 747-400F series airplanes. The NPRM published in the **Federal Register** on April 13, 2021 (86 FR 19160). The NPRM was prompted by reports of burned BMS 8-39 urethane foam found in certain locations on the airplane; investigation revealed that the fire-retardant properties degrade with age. In the NPRM, the FAA proposed to require inspecting the insulation blankets in certain areas of the forward cargo compartment for exposed BMS 8-39 urethane foam, not encapsulated by a protective fire resistant barrier, and for seal integrity, and replacing the BMS 8-39 urethane foam and seal if necessary. The FAA is issuing this AD to address degraded BMS 8-39 urethane foam used in seals, which may fail to maintain sufficient halon concentrations in the cargo compartments to extinguish or contain fire or smoke, and may fail to prevent penetration of fire or smoke in areas of the airplane that are difficult to access for fire and smoke detection or suppression, which could result in loss of control of the airplane.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from Air Line Pilots Association, International (ALPA), who supported the NPRM without change.

Conclusion

The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting this AD as proposed. Except for minor editorial changes, this AD is adopted as proposed in the NPRM.