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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0187; Product Identifier 2018-NM-172-AD; Amendment 39-19715; AD 2019-16-12]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2005-20-01, which applied to all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. AD 2005-20-01 required repetitive inspections of the vertical stiffeners at left buttock line (LBL) and right buttock line (RBL) 6.15 for cracks; and replacement of both stiffeners with new, improved stiffeners if any stiffener is found cracked. This new AD requires, depending on airplane configuration, replacing the vertical stiffeners at LBL and RBL 6.15 on the rear spar of the wing center section, installing angle and bonding jumpers, installing brackets, applying sealant, and applying paint. This AD was prompted by reports of cracks found in the left and right side keel beam upper chords when replacing vertical stiffeners. This AD was also prompted by possible degradation of the fault current bonding path that could introduce an ignition source in the fuel tank in the event of a fault current being imparted onto the fuel tank structure. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective October 9, 2019.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of October 9, 2019.

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, Transport Standards 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 on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0187.

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-2019-0187; 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, the regulatory evaluation, 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: Peter Jarzomb, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5234; fax: 562-627-5210; email: Peter.Jarzomb@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2005-20-01, Amendment 39-14294 (70 FR 56358, September 27, 2005) (“AD 2005-20-01”). AD 2005-20-01 applied to all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. The NPRM published in the Federal Register on April 1, 2019 (84 FR 12143). The NPRM was prompted by reports of cracks found in the left and right side keel beam upper chords when replacing vertical stiffeners. In addition, the FAA has determined that the replacement stiffener installation degraded the fault current bonding path that could introduce an ignition source in the fuel tank in the event of fault current being imparted onto the fuel tank structure. The NPRM proposed to require, depending on airplane configuration, replacing the vertical stiffeners at LBL and RBL 6.15 on the rear spar of the wing center section, installing angle and bonding jumpers, installing brackets, applying sealant, and applying paint. The FAA is issuing this AD to address cracks in vertical stiffeners at LBL and RBL 6.15, which could result in damage to the keel beam structure and consequently reduce the capability of the airplane to sustain flight loads. The FAA is also issuing this AD to address a potential ignition source in the fuel tank due to insufficient bonding, which could lead to a fuel tank explosion and subsequent loss of the airplane.

Comments

The FAA 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. The FAA received one comment that was outside the scope of this rulemaking.

Effect of Winglets on Accomplishment of the Proposed Actions

Aviation Partners Boeing stated that accomplishing Supplemental Type Certificate (STC) ST01219SE does not affect compliance with the proposed actions.

The FAA concurs with the commenter. The FAA has redesignated paragraph (c) of the proposed AD as paragraph (c)(1) of this AD and added paragraph (c)(2) to this AD to state that installation of STC ST01219SE does not affect the ability to accomplish the actions required by this AD. Therefore, for airplanes on which STC ST01219SE is installed, a “change in product” alternative method of compliance (AMOC) approval request is not necessary to comply with the requirement of 14 CFR 39.17.

Request To Correct Service Information Reference

Boeing requested that the “Actions Since AD 2005-20-01 was Issued” section of the NPRM be revised so that the reference to “Boeing Alert Service Bulletin 737-57A1339 RB” is changed to “Boeing Alert Requirements Bulletin 737-57A1339 RB”. The commenter pointed out that the “RB” designation is for a Boeing requirements bulletin and not a Boeing service bulletin. The commenter also noted that this change would be consistent with how this service information is referred to in the “Differences Between This Proposed AD and the Service Information” section of the NPRM.

The FAA agrees with commenter's request for the reason provided by the commenter. Since the “Actions Since AD 2005-20-01 was Issued” section of the preamble does not reappear in this final rule, no change to this final rule is necessary.

Request for Clarification of Credit for Previous Actions

Boeing requested that the introductory text of paragraph (k) of the proposed AD, “Credit for Previous Actions,” be revised to clarify that the unsafe condition caused by possible degradation of the fault current bonding path must be corrected in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018. The commenter stated that it wanted to emphasize that credit is only provided for stiffeners replaced using the service information specified in paragraphs (k)(1) and (2) of the proposed AD and that doing the procedures in the service information specified in paragraph (k)(1) or (2) of the proposed AD does not resolve the unsafe electrical bonding condition.

The FAA agrees with the commenter's statement that the unsafe electrical bonding condition can only be addressed by doing the actions described in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018. However, the FAA disagrees with the commenter's request to revise the proposed credit provision. After further review of Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018, and clarification from the commenter regarding the request, the FAA has determined that credit for previously accomplished actions is not needed in this AD because the effectivity of Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018, addresses airplanes on which actions have already been done using the procedures described in earlier revisions of the service information. Therefore the FAA has removed the credit provision from this AD, and has redesignated the subsequent paragraphs accordingly.

Request To Clarify Unsafe Condition

Boeing requested that the SUMMARY section of the NPRM be revised to clarify the unsafe condition regarding the electrical fault current bonding path. The commenter specifically requested that the sentence “In addition, we have determined that the replacement stiffener installation degraded the fault current bonding path and could introduce an ignition source in the fuel tank in the event of an electrical hot short or lightning strike,” to “In addition, we have determined that the replacement stiffener installation degraded the fault current bonding path and could introduce an ignition source in the fuel tank in the event of a fault current being imparted onto the fuel tank structure.” The commenter also requested that this change be made to the “Actions Since AD 2005-20-01 was Issued” section of the NPRM.

The commenter explained that an ignition source threat can originate from a fault current that develops from a short circuit internal to auxiliary hydraulic pumps installed on or attached to the aft spar. Furthermore, the commenter noted that electrical hot shorts (normally associated with clamped wire bundles, which are attached to fuel tank walls via cushioned clamps and brackets) and lightning strike ignition threats are not applicable to the installation defined in Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018.

The FAA agrees with the commenter's request for the reasons provided by the commenter. The FAA has revised the SUMMARY section of this final rule to include the sentence “In addition, the FAA has determined that the replacement stiffener installation degraded the fault current bonding path that could introduce an ignition source in the fuel tank in the event of a fault current being imparted onto the fuel tank structure.” As previously stated, the “Actions Since AD 2005-20-01” section does not reappear in this final rule, so no further change is necessary in that regard.

Conclusion

The FAA reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously, and minor editorial changes. The FAA has determined that these minor changes:

Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and

Do not add any additional burden upon the public than was already proposed in the NPRM.

The FAA also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

Related Service Information Under 1 CFR Part 51

The FAA reviewed Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018. This service information describes procedures for replacing the vertical stiffeners at LBL and RBL 6.15 on the rear spar of the wing center section with new, improved stiffeners, installing angle and bonding jumpers, installing brackets, applying sealant, and applying paint.

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

The FAA estimates that this AD affects 171 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
Stiffener replacement, angle and bonding jumper installation, bracket installation, and sealant and paint application	Up to 257 work-hours × \$85 per hour = Up to \$21,845	\$14,730	Up to \$36,575	Up to \$6,254,325.

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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

Regulatory Findings

The FAA has determined that 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.

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 removing Airworthiness Directive (AD) 2005-20-01, Amendment 39-14294 (70 FR 56358, September 27, 2005), and adding the following new AD:



2019-16-12 The Boeing Company: Amendment 39-19715; Docket No. FAA-2019-0187; Product Identifier 2018-NM-172-AD.

(a) Effective Date

This AD is effective October 9, 2019.

(b) Affected ADs

This AD replaces AD 2005-20-01, Amendment 39-14294 (70 FR 56358, September 27, 2005) (“AD 2005-20-01”). This AD terminates certain requirements of AD 2018-10-12, Amendment 39-19288 (83 FR 23775, May 23, 2018) (“AD 2018-10-12”).

(c) Applicability

(1) This AD applies to all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category.

(2) Installation of Supplemental Type Certificate (STC) ST01219SE does not affect the ability to accomplish the actions required by this AD. Therefore, for airplanes on which STC ST01219SE is installed, a “change in product” alternative method of compliance (AMOC) approval request is not necessary to comply with the requirements of 14 CFR 39.17.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of cracks in the aft vertical stiffeners at left buttock line (LBL) and right buttock line (RBL) 6.15 on the rear spar of the wing center section and of cracks found in the left and right side keel upper chords when replacing vertical stiffeners. This AD was also prompted by possible degradation of the fault current bonding path due to the replacement vertical stiffener installation. The FAA is issuing this AD to address cracks in vertical stiffeners at LBL and RBL 6.15, which could result in damage to the keel beam structure and consequently reduce the capability of the airplane to sustain flight loads. The FAA is also issuing this AD to address a potential ignition source in the fuel tank due to insufficient bonding, which could lead to a fuel tank explosion and subsequent loss of the airplane.

(f) Compliance

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

(g) Required Actions for Groups 1 and 3 Through 8 Airplanes

For airplanes identified as Groups 1 and 3 through 8 in Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018: Except as specified by paragraph (j) of this AD, at the applicable times specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018, do all applicable actions, identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018. Depending on the airplane configuration, applicable actions include replacing the vertical stiffeners at LBL and RBL 6.15 on the rear spar of the wing center section, installing angle and bonding jumpers, installing brackets, applying sealant, and applying paint.

(h) Required Actions for Group 2 Airplanes

For airplanes identified as Group 2 in Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018: Within 120 days after the effective date of this AD, do actions to correct the unsafe condition, using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(i) Terminating Action for Repetitive Inspections of Aft Vertical Stiffener Required by AD 2018-10-12

Accomplishment of the stiffener replacement required by paragraph (g) of this AD terminates only the repetitive inspections of the aft vertical stiffeners required by paragraph (h) of AD 2018-10-12 for that airplane only. All other requirements of paragraph (h) of AD 2018-10-12 remain in effect.

(j) Exceptions to Service Information Specifications

(1) For purposes of determining compliance with the requirements of this AD: Where Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018, uses the phrase “the Revision 2 date of this service bulletin,” this AD requires using “the effective date of this AD.”

(2) Where Boeing Alert Service Bulletin 737-57A1269, Revision 2, dated October 11, 2018, specifies contacting Boeing for repair instructions: This AD requires doing the repair before further flight using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(k) 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 local Flight Standards District 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 (l) 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 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 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.

(l) Related Information

For more information about this AD, contact Peter Jarzomb, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5234; fax: 562-627-5210; email: Peter.Jarzomb@faa.gov.

(m) 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 737-57A1269, Revision 2, dated October 11, 2018.

(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 Standards 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, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Des Moines, Washington, on August 15, 2019.

Michael Kaszycki,
Acting Director, System Oversight Division,
Aircraft Certification Service.