



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2018-0900; Product Identifier 2018-NM-101-AD; Amendment 39-19623; AD 2019-08-02]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. This AD was prompted by reports of cracking in the frame web, frame integral inboard chord, and fail-safe chord on multiple airplanes in multiple locations between stringers S-10 and S-17 above the passenger floor, in addition to an evaluation by the design approval holder (DAH) indicating that certain fuselage frame splices are subject to widespread fatigue damage (WFD). This AD requires repetitive inspections of certain fuselage upper frames, side frames, fail-safe chords, inboard chords, frame webs, and stringers; an inspection for open tooling holes and the presence of repairs in certain inspection zones; and applicable on-condition actions. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, 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>. 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-2018-0900.

#### **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-2018-0900; 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 (phone: 800-647-5527) 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:** George Garrido, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard,

Lakewood, CA 90712-4137; phone: 562-627-5232; fax: 562-627-5210; email:  
george.garrido@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We 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 737-100, -200, -200C, -300, -400, and -500 series airplanes. The NPRM published in the Federal Register on October 16, 2018 (83 FR 52173). The NPRM was prompted by reports of cracking in the frame web, frame integral inboard chord, and fail-safe chord on multiple airplanes in multiple locations between stringers S-10 and S-17 above the passenger floor, in addition to an evaluation by the DAH indicating that certain fuselage frame splices are subject to WFD. The NPRM proposed to require repetitive inspections of certain fuselage upper frames, side frames, fail-safe chords, inboard chords, frame webs, and stringers; an inspection for open tooling holes and the presence of repairs in certain inspection zones; and applicable on-condition actions.

We are issuing this AD to address cracks in these locations, which could grow large enough to sever frames. Continued operation with multiple adjacent severed frames or a combination of a severed frame adjacent to fuselage skin cracks in chem-milled pockets could result in a loss of structural integrity or uncontrolled decompression.

### **Comments**

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Effect of Winglets on Accomplishment of the Proposed Actions**

Aviation Partners Boeing stated that accomplishing the Supplemental Type Certificate (STC) ST01219SE does not affect the actions specified in the NPRM.

We concur with the commenter. We have 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 requirements of 14 CFR 39.17.

### **Request for Clarification about Frame Replacement**

Commenter Mark Bowen observed that “if a crack or non SRM/Boeing repair” is found as part of inspections accomplished under Boeing Alert Service Bulletin 737-53A1360, the only action given in the proposed AD is to contact Boeing for repair or alternative inspections. He asked whether frame replacement could be considered an alternative option to contacting Boeing for a repair or alternative inspections.

We partially agree with the commenter’s request. Frame replacement that removes the cracked or repaired structure may be an option to repair or alternative inspections, provided the replacement can be shown to adequately address the unsafe condition. However, we note that the commenter did not provide sufficient documentation to show that, in regard to the unsafe condition identified in this AD, a frame replacement would adequately address the unsafe condition. In addition, the commenter did not provide details on a proposed method of compliance for accomplishing the proposed frame replacement and post-replacement inspections, nor

any evidence of support for the proposal from the Boeing Commercial Airplanes Organization Designation Authorization (ODA). Operators may apply for an alternative method of compliance in accordance with paragraph (k) of this AD, provided they can show that frame replacement adequately addresses the unsafe condition. We have not changed this AD in this regard.

#### **Request to Remove Model 737-100 Series Airplanes from a Sentence in the Discussion Paragraph of the NPRM**

Boeing has requested that we remove Model 737-100 airplanes from the sentence “We have received a report indicating that cracking is being found . . . on multiple Model 737-100, -200, -200C, -300, -400, and -500 series airplanes” in the Discussion paragraph of the NPRM. The commenter asserted that they have not received reports of frame cracking on that airplane model.

We acknowledge that cracking has not been found on Model 737-100 series airplanes. However, that sentence is not restated in this final rule, so we have not revised it in this regard.

#### **Request to Change Location of Unsafe Condition**

Boeing requested that we change the location of the unsafe condition from “below the passenger floor” to “between stringers S-10 and S-17 above the passenger floor,” because the proposed AD and the referenced service information only address frame cracking above the passenger floor.

We agree with the commenter’s request and have changed this AD accordingly.

#### **Request to Coordinate Proposed Compliance Times and Actions with STC Holder**

Boeing observed that the proposed AD would include the application of actions specific to the Model 737-200C airplanes (Group 3) to certain Model 737CL airplanes

that have been modified to a non-Boeing STC cargo configuration. Boeing recommended the FAA coordinate the proposed compliance times and actions with the STC holder.

We partially agree with Boeing's comments. We agree with their observation regarding Model 737CL airplanes. However, we do not agree to coordinate compliance times and actions with the STC holders because this would unnecessarily delay issuance of the final rule, and the times and actions are similar for airplanes converted to a freighter. If an operator of airplanes modified with a non-Boeing freighter conversion STC would like to accomplish the AD at different times or with different actions, they can request an AMOC in accordance with paragraph (k) of this AD. No changes to this AD are necessary.

#### **Clarification of Exception Language**

We included a standard service bulletin exception in paragraph (i)(1) of the proposed AD for determining compliance with this AD. However, we did not intend the exception to apply to the text that describes exceptions to inspection areas found in notes or flag notes of Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018. Therefore, we have revised paragraph (i)(1) of this AD accordingly.

#### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the changes described previously and minor editorial changes. We have 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.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

**Related Service Information under 1 CFR part 51**

We reviewed Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018. This service information describes procedures for repetitive inspections of certain fuselage upper frames, side frames, fail-safe chords, inboard chords, frame webs, and stringers; an inspection for open tooling holes and the presence of repairs in certain inspection zones; and applicable on-condition actions. 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**

We estimate that this AD affects 262 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

**Estimated costs for required actions**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Inspections	Up to 243 work-hours X \$85 per hour = \$20,655 per inspection cycle	None	Up to \$20,655 per inspection cycle	Up to \$5,411,610 per inspection cycle

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions 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.

We are 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**

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) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) 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 adding the following new airworthiness directive (AD):

2019-08-02 **The Boeing Company**: Amendment 39-19623 ; Docket No. FAA-2018-0900; Product Identifier 2018-NM-101-AD.

**(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

(1) This AD applies to The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018.

(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 53, Fuselage.

**(e) Unsafe Condition**

This AD was prompted by reports of cracking in the frame web, frame integral inboard chord, and fail-safe chord on multiple airplanes in multiple locations between stringers S-10 and S-17 above the passenger floor, in addition to an evaluation by the design approval holder (DAH) indicating that the fuselage frame splices from station (STA) 380 to STA 520 and STA 727A to STA 907 between stringers S-13 and S-14 are subject to widespread fatigue damage (WFD). We are issuing this AD to address cracks in these locations, which could grow large enough to sever frames. Continued operation with multiple adjacent severed frames or a combination of a severed frame adjacent to

fuselage skin cracks in chem-milled pockets could result in a loss of structural integrity or uncontrolled decompression.

**(f) Compliance**

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

**(g) Actions for Group 1**

For airplanes identified as Group 1 in Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018: 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 (k) of this AD.

**(h) Inspection for Groups 2 through 9**

For airplanes identified as Groups 2 through 9 in Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, except as specified in paragraph (i) of this AD: At the applicable times specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, do all applicable actions identified as “RC” (required for compliance) in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018.

**(i) Exceptions to Service Information Specifications**

(1) For purposes of determining compliance with the requirements of this AD: Where Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, uses the phrase “the original issue date of this service bulletin,” this AD requires using “the effective date of this AD,” except where Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, uses the phrase “the original issue date of this service bulletin” in a note or flag note.

(2) Where Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, specifies contacting Boeing for repair instructions: This AD requires repair and applicable on-condition actions using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(3) Where Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, specifies contacting Boeing for alternative inspections: This AD requires alternative inspections using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(4) For airplanes identified as Group 2 and Groups 4 through 9 in Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, that have been modified to a cargo configuration: In addition to the actions required by paragraph (h) of this AD, the actions specified in Table 9, "Inspection of the Fuselage Frame Integral Inboard Chord and Web from STA 360 to STA 400, Right Side," of Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, must be done by doing all applicable actions identified as "RC" (required for compliance) in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, at the applicable compliance times specified in Table 9, "Inspection of the Fuselage Frame Integral Inboard Chord and Web from STA 360 to STA 400, Right Side," of Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, except as specified in paragraphs (i)(1) and (i)(2) of this AD.

**(j) Terminating Actions for Repetitive Inspections**

(1) Accomplishment of a preventative modification specified in Part 7 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1360, dated

June 21, 2018, at a tooling hole location, terminates the repetitive inspections specified in Part 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, that are required by paragraph (h) of this AD, for that modified tooling hole location only.

(2) Accomplishment of a high frequency eddy current inspection specified in Part 9 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, terminates the repetitive inspections specified in Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1360, dated June 21, 2018, that are required by paragraph (h) of this AD, at the uppermost frame splice fastener location only.

**(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

Commercial Airplanes 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.

(4) Except as required by paragraph (i) of this AD: For service information that contains steps that are labeled as RC, the provisions of paragraphs (k)(4)(i) and (k)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled “RC Exempt,” then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator’s maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

**(l) Related Information**

For more information about this AD, contact George Garrido, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5232; fax: 562-627-5210; email: [george.garrido@faa.gov](mailto:george.garrido@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 737-53A1360, dated June 21, 2018.

(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, 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 April 25, 2019.

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