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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2017-0629; Product Identifier 2016-NM-184-AD; Amendment 39-19149; AD 2018-01-08]**

**RIN 2120-AA64**

#### **Airworthiness Directives; The Boeing Company Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. This AD was prompted by reports of fatigue cracking in the frame outboard chord and in the radius of the auxiliary chord at a certain area. This AD requires inspections to detect this cracking, and corrective action if necessary. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective February 16, 2018 .

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 26, 2012 (77 FR 69747, November 21, 2012).

**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; telephone 562-797-1717; internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW, Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0629.

#### **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-2017-0629; or in person at the Docket Management Facility 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 the Docket Office (phone: 800-647-5527) is Docket Management Facility, 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 all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. The NPRM published in the Federal Register on June 30, 2017 (82 FR 29792). The NPRM was prompted by reports of fatigue cracking in the frame outboard chord and in the radius of the auxiliary chord at a certain area. The NPRM proposed to require inspections to detect this cracking, and corrective action if necessary. We are issuing this AD to detect and correct fatigue cracking of the outboard and auxiliary chords, which could result in reduced structural integrity of the outboard chord and consequent rapid decompression of the airplane.

### **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 Supplemental Type Certificate (STC) ST01219SE does not affect the ability to accomplish the actions specified in the NPRM.

We agree with the commenter. We have redesignated paragraph (c) of the proposed AD as (c)(1) 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 methods of compliance (AMOC) approval request is not necessary to comply with the requirements of 14 CFR 39.17.

### **Request To Remove Certain Language in Paragraph (i) of the Proposed AD**

Boeing asked that the language “and repair” be removed from paragraph (i) of the proposed AD. Boeing stated that the language in paragraph (i) refers to a section in Part 6 of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, which is to determine if the modification should be classified as interim or permanent. Boeing noted that the additional language “and repair” is not part of that section, and suggested it be deleted.

We agree with the commenter's request for the reason provided. We have deleted “and repair” from paragraph (i) of this AD.

### **Request To Clarify Certain Language**

Swiftair S.A. stated that the language describing the requirements in paragraph (h) of the proposed AD is confusing. Swiftair asked that the effectivity and the requirements identified in paragraph (h) of the proposed AD be clarified in some way due to extensive sub-paragraphs. Swiftair recommended that the “and” in the sentence be emphasized.

We acknowledge the commenter's concern. However, we cannot emphasize or highlight specific text in an AD. The affected airplanes in paragraph (h) of the AD are those that meet all of the criteria specified in the sub-paragraphs. We have not changed this AD in this regard.

Swiftair S.A. also stated that the language describing the requirements in paragraph (j) of the proposed AD is confusing. Swiftair added that the pre-regulatory text in the NPRM refers to actions from AD 2012-23-04, Amendment 39-17260 (77 FR 69747, November 21, 2012) (“AD 2012-23-04”) and the combination of that rulemaking and the actions in the proposed AD is confusing. Swiftair also stated that paragraph (r) of AD 2012-23-04 should be explained in the current requirements and not in the pre-regulatory text.

We agree that some clarification is necessary. Concerning the request to include the current requirements of AD 2012-23-04 in this AD, we would have had to issue different rulemaking. Instead of a stand-alone AD, the alternative would have been to supersede AD 2012-23-04, which would have resulted in a single but considerably more complex AD. All operators identified in AD 2012-23-04 would then have to show compliance with the new supersedure AD. Our experience with similar complex ADs, and with operator feedback, is that it is preferable to leave the existing AD as is and issue a related but stand-alone AD such as this one.

To clarify the criteria in paragraph (h)(3) of this AD, we have added Note 1 to paragraph (h)(3) of this AD to reference the optional terminating action specified in paragraph (r) of AD 2012-23-04.

**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 correcting 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 737-53A1166, Revision 2, dated May 25, 2006. The service information describes procedures for inspections for cracks of the body station (BS) 727 frame outboard chord and in the radius of the auxiliary chord, and repair or replacement if necessary. 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 160 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

**Estimated Costs**

<b>Action</b>	<b>Labor cost</b>	<b>Affected airplanes of U.S. registry</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Detailed and High Frequency Eddy Current (HFEC) inspections	6 work-hours × \$85 per hour = \$510 per inspection cycle	5	\$510	\$2,550 per inspection cycle.

One-time follow-on HFEC inspection	9 work-hours × \$85 per hour = \$765	5	765	\$3,825.
HFEC inspection	9 work-hours × \$85 per hour = \$765	150	765	\$114,750.

We estimate the following costs to do any necessary repairs that are required based on the results of the inspections. We have no way of determining the number of aircraft that might need these repairs:

#### **On-Condition Costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Repair of cracking of the outboard chord frame	514 work-hours × \$85 per hour = \$43,690	\$13,586	\$57,276.
Repair of cracking of the outboard chord	49 work-hours × \$85 per hour = \$4,165	4,255	8,420.

#### **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 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):



**FAA**  
**Aviation Safety**

## **AIRWORTHINESS DIRECTIVE**

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

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**2018-01-08 The Boeing Company:** Amendment 39-19149; Docket No. FAA-2017-0629; Product Identifier 2016-NM-184-AD.

**(a) Effective Date**

This AD is effective February 16, 2018.

**(b) Affected ADs**

None.

**(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 ([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgstc.nsf/0/EBD1CEC7B301293E86257CB30045557A?OpenDocument&Highlight=st01219se](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/EBD1CEC7B301293E86257CB30045557A?OpenDocument&Highlight=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 fatigue cracking in the frame outboard chord and in the radius of the auxiliary chord at body station (BS) 727 and stringer (S) 18A. We are issuing this AD to detect and correct fatigue cracking of the outboard and auxiliary chords, which could result in reduced structural integrity of the outboard chord and consequent rapid decompression of the airplane.

**(f) Compliance**

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

**(g) Repetitive Inspections and Corrective Action**

For airplanes identified in paragraph (h) of this AD: Within 4,500 flight cycles or 24 months after the effective date of this AD, whichever occurs first, do internal detailed and High Frequency Eddy Current (HFEC) inspections to detect cracks in the auxiliary chord radius, in accordance with Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision

2, dated May 25, 2006. If any crack is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD. Repeat the inspections thereafter at intervals not to exceed 15,000 flight cycles. Replacement of the outboard chord of the frame at BS 727 concurrently with the installation of the preventive modification of the outboard chord in accordance with Part 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, terminates the repetitive inspections required by this paragraph.

#### **(h) Airplanes for Actions Specified in Paragraph (g) of This AD**

The actions specified in paragraph (g) of this AD are required for airplanes that meet the criteria of paragraphs (h)(1), (h)(2), (h)(3), and (h)(4) of this AD.

(1) Model 737-100, -200, and -200C series airplanes, line numbers 1 through 999 inclusive.

(2) Airplanes identified as Groups 1, 2, and 3 in Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006.

(3) Airplanes on which a preventive modification has been installed in accordance with the method specified in paragraph (h)(3)(i), (h)(3)(ii), or (h)(3)(iii) of this AD.

Note 1 to paragraph (h)(3) of this AD: The modification identified in paragraph (h)(3) of this AD is also specified in paragraph (r) of AD 2012-23-04, Amendment 39-17260 (77 FR 69747, November 21, 2012), as optional terminating action.

(i) Part 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006.

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(ii) Part II of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 1, dated May 25, 1995.

(iii) Part II of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, dated June 30, 1994.

(4) Airplanes on which the outboard chord has not been replaced in accordance with the method specified in paragraph (h)(4)(i), (h)(4)(ii), or (h)(4)(iii) of this AD.

(i) Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006.

(ii) Part I of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 1, dated May 25, 1995.

(iii) Part I of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, dated June 30, 1994.

#### **(i) Edge Margin Measurement, Related Investigative Actions, and Repair**

For Model 737-100, -200, and -200C series airplanes having line numbers 1 through 999 inclusive, identified as Groups 1 through 3 in Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, on which the preventive modification has been installed in accordance with Boeing Alert Service Bulletin 737-53A1166, dated June 30, 1994; or Boeing Alert Service Bulletin 737-53A1166, Revision 1, dated May 25, 1995: Within 60,000 flight cycles after accomplishing the preventive modification, determine if the modification is classified as interim or permanent by using the edge margin measurement classification specified in part 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006. In lieu of measuring on the airplane, a review of engineering documentation may be used to classify the modification if the engineering documentation was completed at the time of the modification and has the edge margins recorded.

(1) If the modification is classified as permanent, no further action is required by paragraph (i) of this AD.

(2) If the modification is classified as interim: Within 60,000 flight cycles after accomplishment of the interim modification of the outboard chord of the frame at BS 727 at S-18A, but no earlier than 50,000 flight cycles after accomplishment of the modification, do a one-time follow-on open-hole eddy current inspection to detect cracks in the modified chord, in accordance with part 8 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006. If any crack is found, before further flight, repair in accordance with part 3 or part 4, as applicable, of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006; except, if the repairs cannot be installed using the identified procedures, repair before further flight using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

#### **(j) Follow-On Inspection for Interim Modification and Repair**

For airplanes having line numbers 1 through 3132 inclusive, on which an interim modification of the BS 727 outboard chord as defined in part 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, has been accomplished: Within 60,000 flight cycles after accomplishment of the interim modification of the outboard chord of the frame at BS 727 at S-18A, but no earlier than 50,000 flight cycles after accomplishment of the modification, do a one-time follow-on open-hole eddy current inspection to detect cracks in the modified chord, in accordance with part 8 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006. If any crack is found during the inspection required by this paragraph, before further flight, repair in accordance with part 3 or part 4, as applicable, of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006; except, where the repairs cannot be installed using the procedures identified in this service bulletin, repair before further flight using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

#### **(k) Exception to the Service Information**

Access and restoration procedures specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, are not required by this AD. Operators may do those actions following their approved maintenance procedures.

#### **(l) 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 (m) 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, 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.



### **(m) 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.

### **(n) 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.

(3) The following service information was approved for IBR on December 26, 2012 (77 FR 69747, November 21, 2012).

(i) Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006.

(ii) Reserved.

(4) 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; telephone 562-797-1717; internet <https://www.myboeingfleet.com>.

(5) You may view this service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW, Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(6) 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 Renton, Washington, on January 2, 2018.

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