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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2016-5597; Directorate Identifier 2016-NM-009-AD; Amendment 39-18715; AD 2016-23-08]**

**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 737-400 series airplanes. This AD was prompted by reports of cracks in the upper chord of the overwing stub beams at body station (STA) 578 emanating from the rivet location common to the crease beam inner chord and the overwing stub beam upper chord. This AD requires repetitive inspections for cracking, and related investigative and corrective actions if necessary. We are issuing this AD to prevent the unsafe condition on these products.

**DATES:** This AD is effective December 30, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 30, 2016.

**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 referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. You may view this referenced service information at the FAA, Transport Airplane Directorate, 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-2016-5597.

#### **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-2016-5597; 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 AD,

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:** Galib Abumeri, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5324; fax: 562-627-5210; email: galib.abumeri@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 737-400 series airplanes. The NPRM published in the Federal Register on April 28, 2016 (81 FR 25360) ("the NPRM"). The NPRM was prompted by reports of cracks in the upper chord of the overwing stub beams at STA 578 emanating from the rivet location common to the crease beam inner chord and the overwing stub beam upper chord. The NPRM proposed to require repetitive inspections for cracking, and related investigative and corrective actions if necessary. Replacement of the overwing stub beam terminates the repetitive inspections for cracking at the replacement location only, and post-replacement inspections are required if the replacement is done. We are issuing this AD to detect and correct cracking in the upper chord of the overwing stub beam caused by high flight-cycle fatigue stresses from both pressurization and maneuver loads. Cracking of the overwing stub beam could adversely affect the fuselage structural integrity and result in possible decompression of the airplane.

### **Comments**

We 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.

#### **Request To Clarify Unsafe Condition Statement in the "Discussion" Section**

Boeing requested that, in the "Discussion" section of the NPRM, that we clarify the cause of cracking in the overwing stub beams is from high flight-cycle fatigue stresses. Boeing submitted suggested wording.

We agree to clarify the unsafe condition. The unsafe condition statement in the SUMMARY section of the NPRM and paragraph (e) of the proposed AD already specified that the cracking in the upper chord of the overwing stub beam is caused by high flight-cycle fatigue stresses from both pressurization and maneuver loads. However, the "Discussion" section of the NPRM is not restated in this final rule. Therefore, we have not revised this final rule in this regard.

#### **Request To Revise Paragraph (i) of the NPRM**

Boeing requested that we revise paragraph (i) of the proposed AD to specify that the actions in that paragraph are required on airplanes that have had an overwing stub beam replaced at STA 578 as specified in Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1347, Original Issue, dated December 9, 2015 ("ASB 737-53A1347 Original Issue"), and not replaced with any other method. Boeing stated that the post-replacement inspection requirements specified in table 2 of paragraph 1.E., "Compliance," of ASB 737-53A1347 Original Issue are

applicable only to a STA 578 stub beam replacement accomplished as specified in Part 4 of the Accomplishment Instructions of ASB 737-53A1347 Original Issue.

We agree with Boeing's request. We have revised paragraph (i) 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 AD 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 or 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 AD.

## Related Service Information Under 1 CFR Part 51

We reviewed ASB 737-53A1347 Original Issue. The service information describes procedures for doing a surface high frequency eddy current inspection for cracking in the overwing stub beam upper chord at STA 559, STA 578, and STA 601, and repairs and replacement. 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 93 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

### Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	24 work-hours × \$85 per hour = \$2,040 per inspection cycle	\$0	\$2,040 per inspection cycle	\$189,720 per inspection cycle.

We estimate the following costs to do any necessary inspections/replacements that would be required based on the results of the inspection. We have no way of determining the number of aircraft that might need these inspections/replacements:

### On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Related investigative inspection	9 work-hours × \$85 per hour = \$765 per side	\$0	\$765 per side.
STA 578 Replacement	41 work-hours × \$85 per hour = \$3,485 per side	\$41,500 per side	\$44,985 per side.
STA 578 Post-replacement inspection	1 work-hour × \$85 per hour = \$85 per side	\$0	\$85 per side.

We have received no definitive data that would enable us to provide cost estimates for the remaining 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.

### **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):



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**2016-23-08 The Boeing Company:** Amendment 39-18715; Docket No. FAA-2016-5597; Directorate Identifier 2016-NM-009-AD.

**(a) Effective Date**

This AD is effective December 30, 2016.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all the Boeing Company Model 737-400 series airplanes, certificated in any category.

**(d) Subject**

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

**(e) Unsafe Condition**

This AD was prompted by reports of cracks in the upper chord of the overwing stub beams at body station (STA) 578 emanating from the rivet location common to the crease beam inner chord and the overwing stub beam upper chord. We are issuing this AD to detect and correct cracking in the upper chord of the overwing stub beam caused by high flight-cycle fatigue stresses from both pressurization and maneuver loads. Cracking of the overwing stub beam could adversely affect the fuselage structural integrity and result in possible decompression of the airplane.

**(f) Compliance**

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

**(g) Inspections, Related Investigative Actions, and Corrective Actions**

At the applicable time specified in table 1 in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 737-53A1347, Original Issue, dated December 9, 2015 ("ASB 737-53A1347 Original Issue"), except as required by paragraphs (j)(1) and (j)(2) of this AD: Do a surface high frequency eddy current (HFEC) inspection for any cracking in the overwing stub beam upper chord at STA 559, STA 578, and STA 601; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of ASB 737-53A1347 Original Issue, except as specified in paragraph (j)(3) of this AD. Do all applicable related investigative and corrective actions before further flight. Repeat the HFEC inspection thereafter at the applicable intervals specified in ASB 737-53A1347 Original Issue.

Note 1 to paragraph (g) of this AD: Deviation from the actions specified in ASB 737-53A1347 Original Issue may affect compliance with the fuel tank ignition prevention requirements specified in Critical Design Configuration Control Limitation 28-AWL-11 of Document D6-38278-CMR.

#### **(h) Terminating Action**

Replacement of the overwing stub beam, in accordance with Part 4 of the Accomplishment Instructions of ASB 737-53A1347 Original Issue, terminates the repetitive inspections required by paragraph (g) of this AD at the STA 578 replacement location only. The post-replacement inspections required by paragraph (i) of this AD are still required at the STA 578 replacement location.

#### **(i) Post-Replacement Inspections and Corrective Action**

For airplanes on which an overwing stub beam has been replaced at STA 578, in accordance with Part 4 of the Accomplishment Instructions of ASB 737-53A1347 Original Issue: At the applicable time specified in table 2 in paragraph 1.E., "Compliance," of ASB 737-53A1347 Original Issue, do a surface HFEC inspection for any cracking in the overwing stub beam upper chord at STA 578, in accordance with the Accomplishment Instructions of ASB 737-53A1347 Original Issue. Repeat the HFEC inspection thereafter at the applicable intervals specified in ASB 737-53A1347 Original Issue. If any cracking is found during any inspection required by this paragraph, before further flight, repair the cracking using a method approved in accordance with the procedures specified in paragraph (j)(3) of this AD.

#### **(j) Exceptions to Service Information**

(1) Where ASB 737-53A1347 Original Issue, specifies a compliance time after the "original issue date of this service bulletin," this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) The Condition column of paragraph 1.E., "Compliance," of ASB 737-53A1347 Original Issue, refers to airplanes with specified total flight-cycles "at the original issue date of this service bulletin." This AD, however, applies to the airplanes with the specified total flight-cycles as of the effective date of this AD.

(3) If any cracking is found during any inspection required by this AD, and ASB 737-53A1347 Original Issue specifies to contact Boeing for appropriate action: Before further flight, repair the cracking or replace the stub beam, using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

#### **(k) No Economic Inspection Required**

This AD does not require the "Recommended Economic Inspection" specified in paragraph 3.B.3. of the Accomplishment Instructions of ASB 737-53A1347 Original Issue.

#### **(l) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles Aircraft Certification Office (ACO), 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 ACO, send it to the attention of the person identified in paragraph (m) of this AD. Information may be emailed to: 9-ANM-LAACO-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 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, 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 (j)(3) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (l)(4)(i) and (l)(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.

#### **(m) Related Information**

For more information about this AD, contact Galib Abumeri, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5324; fax: 562-627-5210; email: galib.abumeri@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.

(i) Boeing Alert Service Bulletin 737-53A1347, Original Issue, dated December 9, 2015.

(ii) Reserved.

(3) For Boeing 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 Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(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 Renton, Washington, on November 8, 2016.  
Michael Kaszycki,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.