

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2012-0723; Directorate Identifier 2011-NM-137-AD; Amendment 39-17586; AD 2013-19-04]**

**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 certain The Boeing Company Model 737-600, -700, -700C, -800, and -900 series airplanes. This AD was prompted by a report of cracks found in the skin at body station (STA) 540 just below stringer S-22L on a Model 737-700 series airplane. This AD requires repetitive detailed and high frequency eddy current inspections for cracking of the skin around the eight fasteners common to the ends of the STA 540 bulkhead chords between stringers S-22 and S-23, left and right sides; and corrective actions and preventive modification if necessary. We are issuing this AD to detect and correct fatigue cracking in the skin, which can result in rapid decompression of the cabin.

**DATES:** This AD is effective November 4, 2013.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of November 4, 2013.

**ADDRESSES:** For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may review copies of the 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.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; 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 Document 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:** Alan Pohl, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6450; fax: 425-917-6590; email: alan.pohl@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. The NPRM published in the Federal Register on July 25, 2012 (77 FR 43547). The NPRM proposed to require repetitive detailed and high frequency eddy current (HFEC) inspections for cracking of the skin around the eight fasteners common to the ends of the STA 540 bulkhead chords between stringers S-22 and S-23, left and right sides; and corrective actions and preventive modification if necessary.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (77 FR 43547, July 25, 2012) and the FAA's response to each comment.

### **Concurrence**

The Boeing Company concurred with the content of the NPRM (77 FR 43547, July 25, 2012).

### **Support of Compliance Time**

AirTran/Southwest Airlines stated that the inspection threshold and intervals will fit within its planned scheduled maintenance checks. The commenter also stated that the number of man-hours and elapsed time to accomplish the NPRM (77 FR 43547, July 25, 2012) will not impact the overall span-time of its planned scheduled maintenance check.

### **Request To Change the Compliance Time**

American Airlines requested that all airplanes have the same compliance time of 26,500 total flight cycles with a grace period of 6,500 flight cycles. The commenter explained that since the NPRM (77 FR 43547, July 25, 2012) is for the same type of airplanes with the same condition, they should have the same compliance time regardless of the amount of flight cycles at the time of the AD release date. The commenter noted that the NPRM specifies a compliance time of 18,000 total flight cycles with a grace period of 4,000 flight cycles for airplanes with less than 27,500 total flight cycles. The commenter also stated that the 4,000 flight cycle grace period does not allow enough time for operators to have two good opportunities to accomplish the inspections during normal maintenance visits.

We disagree with changing the compliance times. In developing appropriate compliance times for this action, we considered the urgency associated with the subject unsafe condition and the practical aspect of accomplishing the required actions within a period of time that corresponds to the normal scheduled maintenance for most affected operators. The shorter compliance time for airplanes with higher number of total flight cycles addresses the increased likelihood of cracking or larger

cracks being present. Under the provisions of paragraph (I) of this final rule, we will consider requests for approval of an adjustment of the compliance time if sufficient data are submitted to substantiate that the new compliance time would provide an acceptable level of safety. No change has been made to this final rule in this regard.

### **Request for Increased Repetitive Inspection Intervals**

American Airlines requested that the repetitive inspection interval of 4,000 flight cycles specified in the NPRM (77 FR 43547, July 25, 2012) be changed to at least 8,000 flight cycles to coordinate with heavy maintenance visits to provide the least amount of impact during the maintenance visit. The commenter stated that it does not believe that we have provided sufficient evidence to warrant such a tight repetitive inspection interval if no cracks are found after the initial inspection. The commenter also noted that since this crack has only been found on one airplane, it is not certain how susceptible the rest of the fleet is to develop skin cracks at body station (BS)540.

We disagree with increasing the repetitive inspection interval. In developing an appropriate repetitive inspection interval for this action, we considered the urgency associated with the subject unsafe condition and the practical aspect of accomplishing the required actions within a period of time that corresponds to the normal scheduled maintenance for most affected operators. The interval was determined using the same methodology as for other cracks of primary structure addressed in other airworthiness directives. No data has been offered that would substantiate a change to this final rule. Under the provisions of paragraph (I) of this final rule, we will consider requests for approval of an adjustment of the repetitive inspection interval if sufficient data are submitted to substantiate that the new interval would provide an acceptable level of safety. No change has been made to this final rule in this regard.

### **Request To Change Cost Estimate**

American Airlines requested that we change the Cost of Compliance table to account for the removal and installation of the ram air transition duct and the recirculation air filter housing. American Airlines stated the ram air transition duct must be removed to accomplish the inspection of the skin around the 8 fasteners and will add an additional 2 work-hours (open and close) for each airplane. American Airlines requested that the labor cost for the inspection be changed to 5 work-hours rather than the estimated 3 work-hours specified in the NPRM (77 FR 43547, July 25, 2012) to include the removal and installation of the ram air transition duct. American Airlines also stated that the recirculation air filter housing must be removed to accomplish the preventative modification and will add an additional 6 work-hours (open and close) for each airplane. American Airlines also noted that the current price for the modification kit is \$993, rather than \$894 as referenced in the NPRM (77 FR 43547, July 25, 2012).

We partially agree with the request to change the Cost of Compliance table. We disagree with the figures used by the commenter. The work-hours, however, have been revised in Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013. The Cost of Compliance table has been revised accordingly.

### **Request To Allow the Use of Grip Length Adjustment Washers**

AirTran/Southwest Airlines requested that we add Note 6 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-53-1294, dated March 31, 2011, to allow the use of grip length adjustment washers to accomplish the NPRM (77 FR 43547, July 25, 2012).

We disagree. Note 5 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013 (previously Note 6 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-53-1294, dated March 31, 2011), states, "If the length of any fastener specified in this service bulletin does not meet the installation

standards in SRM [structural repair manual] Chapter 51, then a fastener of the same specification, or an approved substitute, with a length which meets the installation standards in SRM Chapter 51 may be used." Since the installation standards of Section 51 of the SRM include the use of grip length adjustment washers, no additional authorization is necessary. No change has been made to this final rule in this regard.

#### **Request To Remove or Modify Paragraph (i)(4) of the NPRM (77 FR 43547, July 25, 2012)**

AirTran/Southwest Airlines requested that paragraph (i)(4) of the NPRM (77 FR 43547, July 25, 2012) be removed. AirTran/Southwest Airlines requested that we allow the operator to determine the sequence in which steps are to be accomplished for the inspections and modifications, otherwise, the operators may inadvertently violate the AD by performing unrelated tasks out of sequence.

American Airlines requested that we remove or modify paragraph (i)(4) of the NPRM (77 FR 43547, July 25, 2012) stating that paragraph (i)(4) is more restrictive than necessary to ensure safety of flight. American Airlines stated that not being able to accomplish some steps out of order will prevent accomplishment of the AD in a timely manner. American Airlines suggested modifying paragraph (i)(4) of the NPRM (77 FR 43547, July 25, 2012) to allow the modifications and repairs to be accomplished in any order as long as the steps within those actions are accomplished in order.

We agree to remove paragraph (i)(4) of the NPRM (77 FR 43547, July 25, 2012). We have received Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, which removes instructions regarding the sequencing of steps and changes certain part numbers. We have revised paragraphs (c), (g), (h), (i), and (j) of this final rule to refer to Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013. We have also added new paragraph (k) to this final rule to allow credit for the actions required by paragraphs (g), (h), (i), and (j) of this AD, if those actions were performed before the effective date of this final rule using Boeing Special Attention Service Bulletin 737-53-1294, dated March 31, 2011. Subsequent paragraphs have been redesignated accordingly.

#### **Request To Allow Removal of Additional or Fewer Parts, and Include Jacking and Shoring Limitations**

AirTran/Southwest Airlines requested that we include a statement stating that it is acceptable to remove additional, or fewer, parts as necessary; however, jacking and shoring limitations must be observed.

We partially agree with the request. We agree that clarification is needed regarding removal of additional or fewer parts. We infer that this comment concerns instructions in Boeing Special Attention Service Bulletin 737-53-1294, dated March 31, 2011, regarding access and restoration, which are not required to address the unsafe condition. However, we disagree with requiring jacking and shoring limitations in this final rule because those actions are not required to address the unsafe condition. Operators may perform those actions in accordance with approved maintenance procedures. We have added new paragraph (i)(4) to this final rule to state that access and close actions identified in Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, are not required by this final rule. We have also revised paragraphs (g) and (h) of this final rule to refer to paragraph (i)(4) of this final rule.

#### **STC Winglet Comment**

Aviation Partners Boeing stated that the installation of winglets per STC ST00830SE does not affect them.

We have redesignated paragraph (c) of the NPRM (77 FR 43547, July 25, 2012) as paragraph (c)(1) in this AD and added paragraph (c)(2) to this AD to state that installation of STC ST00830SE ([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgstc.nsf/0/408E012E008616A7862578880060](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/408E012E008616A7862578880060))

456C?OpenDocument&Highlight=st00830se) does not affect the ability to accomplish the actions required by this final rule. Therefore, for airplanes on which STC ST00830SE 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. For all other AMOC requests, the operator must request approval for an AMOC in accordance with the procedures specified in paragraph (l) of this final rule.

## 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 change described previously and minor editorial changes. We have determined that these minor changes:

Are consistent with the intent that was proposed in the NPRM (77 FR 43547, July 25, 2012) for correcting the unsafe condition; and

Do not add any additional burden upon the public than was already proposed in the NPRM (77 FR 43547, July 25, 2012).

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

## Costs of Compliance

We estimate that this AD affects 903 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 (left and right sides)	14 work-hours $\times$ \$85 per hour = \$1,190 per inspection cycle	\$0	\$1,190 per inspection cycle	\$1,074,570 per inspection cycle.

We estimate the following costs to do any necessary repairs and inspections 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 repairs:

### On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Preventive modification (each side)	7 work-hours $\times$ \$85 per hour = \$595	\$894	\$1,489.
Skin repair (each side)	37 work-hours $\times$ \$85 per hour = \$3,145	Up to \$5,635	Up to \$8,780.

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

## 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):





**2013-19-04 the Boeing Company:** Amendment 39-17586; Docket No. FAA-2012-0723; Directorate Identifier 2011-NM-137-AD.

**(a) Effective Date**

This AD is effective November 4, 2013.

**(b) Affected ADs**

None.

**(c) Applicability**

(1) This AD applies to the Boeing Company Model 737-600, -700, -700C, -800, and -900 series airplanes; certificated in any category; as identified in Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013.

(2) Installation of Supplemental Type Certificate (STC) ST00830SE ([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rqstc.nsf/0/408E012E008616A7862578880060456C?OpenDocument&Highlight=st00830se](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rqstc.nsf/0/408E012E008616A7862578880060456C?OpenDocument&Highlight=st00830se)) does not affect the ability to accomplish the actions required by this AD. Therefore, for airplanes on which STC ST00830SE 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. For all other AMOC requests, the operator must request approval for an AMOC in accordance with the procedures specified in paragraph (l) of this AD.

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 53, Fuselage.

**(e) Unsafe Condition**

This AD was prompted by a report of cracks found in the skin at body station (STA) 540 just below stringer S-22L. We are issuing this AD to detect and correct fatigue cracking in the skin, which can result in rapid decompression of the cabin.

**(f) Compliance**

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

**(g) Inspection and Corrective Action**

(1) Except as required by paragraphs (g)(2), (i)(2), and (i)(3) of this AD, at the applicable time specified in table 1 of paragraph 1.E. "Compliance," of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013: Do detailed and high frequency eddy current (HFEC) inspections of the skin for cracking in the area around the eight fasteners securing the STA 540

bulkhead chords between stringers S-22 and S-23, and do all applicable corrective actions, in accordance with Parts 1, 2, 3, 4, and 5 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, except as required by paragraphs (i)(1) and (i)(4) of this AD. If no cracking is found, repeat the detailed and HFEC inspections at the intervals specified in table 1 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, except as required by paragraph (g)(2) of this AD, until the optional preventive modification specified in paragraph (h) of this AD is done. Do all applicable corrective actions before further flight.

(2) For airplanes that have incorporated Boeing Business Jet Lower Cabin Altitude Supplemental Type Certificate (STC) ST01697SE ([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgstc.nsf/0/0812969A86AF879B8625766400600105?OpenDocument&Highlight=st01697se](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/0812969A86AF879B8625766400600105?OpenDocument&Highlight=st01697se)) (6,500 feet maximum cabin altitude in lieu of 8,000 feet), the flight-cycle related compliance times are different from those specified in Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013. All initial compliance times specified in total flight cycles or flight cycles must be reduced to half of those specified in Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013. All repetitive interval compliance times specified in flight cycles must be reduced to one-quarter of those specified in Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013.

#### **(h) Optional Preventive Modification**

Accomplishing the preventive modification, including an HFEC inspection for cracking of the skin and STA 540 bulkhead chords, and all applicable repairs, in accordance with paragraph 3.B, Part 2 or Part 4 (left side), and Part 3 or Part 5 (right side), of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, terminates the inspection requirements of paragraph (g) of this AD for the side on which the modification is done, except as required by paragraphs (i)(1) and (i)(4) of this AD.

#### **(i) Exceptions to Service Bulletin Specifications**

(1) If any cracking is found during any inspection required by this AD, and Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, specifies to contact Boeing for appropriate action: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(2) Where Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, specifies to do the action after the original issue date of that service bulletin, this AD requires the compliance time after the effective date of this AD.

(3) Where the Condition column of table 1 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, specifies a condition as of the original issue date of that service bulletin, this AD specifies the condition as of the effective date of this AD.

(4) The access and restoration instructions identified in the Work Instructions of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, are not required by this AD. Operators may perform those actions in accordance with approved maintenance procedures.

#### **(j) Post-Repair Inspections**

The post-repair inspections, specified in table 2 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, are not required by this AD.



Note 1 to paragraph (j) of this AD: The damage tolerance inspections specified in table 2 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, may be used in support of compliance with Section 121.1109(c)(2) or 129.109(b)(2) of the Federal Aviation Regulations (14 CFR 121.1109(c)(2) or 14 CFR 129.109(b)(2)). The corresponding actions specified in the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013, are not required by this AD.

#### **(k) Credit for Previous Actions**

This paragraph provides credit for the actions required by paragraphs (g), (h), and (j) of this AD, if those actions were performed before the effective date of this AD using Boeing Special Attention Service Bulletin 737-53-1294, dated March 31, 2011, which is not incorporated by reference in this AD.

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

(1) The Manager, Seattle 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, it 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 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 required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle Aircraft Certification Office (ACO) to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane and the approval must specifically refer to this AD.

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

(1) For more information about this AD, contact Alan Pohl, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6450; fax: 425-917-6590; email: alan.pohl@faa.gov.

(2) Service information referenced in this AD that is not incorporated by reference in this AD may be obtained at the addresses identified in paragraphs (n)(3) and (n)(4) of this AD.

#### **(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 Special Attention Service Bulletin 737-53-1294, Revision 1, dated June 14, 2013.

(ii) Reserved.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>.

(4) You may view this service information at 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 September 9, 2013.

Jeffrey E. Duven,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.

SUPERSEDED