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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2016-5034; Directorate Identifier 2015-NM-172-AD; Amendment 39-18702; AD 2016-22-13]**

**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 737-600, -700, -700C, -800, -900, and -900ER series airplanes. This AD was prompted by an evaluation by the design approval holder (DAH) indicating that lap splices for certain stringers are subject to widespread fatigue damage (WFD). This AD requires repetitive inspections for cracking in the lower fastener row of the lap splices of certain stringers, and repair if necessary. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective December 27, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 27, 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; 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. 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-2016-5034.

#### **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-2016-5034; 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:** Gaetano Settineri, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6577; fax: 425-917-6590; email: gaetano.settineri@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 737-600, -700, -700C, -800, -900, and -900ER series airplanes. The NPRM published in the Federal Register on March 29, 2016 (81 FR 17415) ("the NPRM"). The NPRM was prompted by an evaluation by the DAH indicating that the S-14L and S-14R lap splices are subject to WFD. The NPRM proposed to require repetitive low frequency eddy current inspections for cracking in the lower fastener row of the S-14L and S-14R lap splices, and repair if necessary. We are issuing this AD to detect and correct widespread cracking in the S-14L and S-14R lap splices that could rapidly link up and result in possible rapid decompression and reduced structural integrity 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.

### **Support for the NPRM**

Boeing and a commenter, Jordan Ibsen, supported the content of the NPRM.

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

Aviation Partners Boeing stated that accomplishing the supplemental type certificate (STC) ST00830SE does not affect compliance with the actions specified in the NPRM.

We agree with the commenter. We have redesignated paragraph (c) of the NPRM as (c)(1) and added a new paragraph (c)(2) to this final rule to state that installation of STC 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.

### **Request To Revise Compliance Time**

The European Aviation Safety Agency (EASA) noted that Boeing Alert Service Bulletin 737-53A1352, dated October 2, 2015, specifies that the existing 737-600/700/800/900 Maintenance Planning Document (MPD), Section 9, Airworthiness Limitation Instruction (ALI) Inspection Program, is not sufficient to prevent WFD in the S-14L and S-14R lap splice, lower fastener rows, between station (STA) 360-540 and STA 727-887, as the airplane ages. EASA added that this service information specifies inspections at principal structural elements (PSEs) 53-30-04-6, 53-30-04-6a, 53-60-04-6 and 53-60-04-6a before accumulating 54,000 total flight cycles. However, EASA noted that 737-600/700/800/900 MPD, Section 9, C626AOO 1-CMR Table 9-2, Revision August 2012,

requires doing the inspections before accumulating 50,000 flight cycles; which contradicts the initial statement that the ALI inspection program is not sufficient to preclude WFD. EASA concluded that if the current ALI is not sufficient to preclude WFD, then the 50,000 flight cycles should be reduced, rather than increased to 54,000 flight cycles.

We infer the commenter is requesting that we reduce the 54,000 flight-cycle compliance time specified in Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016 (which is the appropriate source of service information for accomplishing the required actions in this AD). We do not agree with the request to reduce the compliance time. However, we do agree to clarify the WFD analysis. Boeing uses a different methodology than the standard damage tolerance analysis for evaluating structure that is susceptible to WFD. This methodology can sometimes produce a longer initial inspection threshold than the baseline maintenance program, but requires more frequent repetitive inspections, as in the case of the S-14L and S-14R lap splices. Although, for certain airplanes, the initial WFD threshold specified in Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016, is 4,000 flight cycles more than the ALI threshold; the repetitive inspection interval is reduced by 6,000 flight cycles.

Operators are still required to accomplish the ALI inspections in accordance with 14 CFR 91.403(c). However, if the inspections specified in Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016, and the ALI inspections overlap (same location, inspection detail, and technique) then the more restrictive of the two programs satisfies both requirements. Since a specific revision of the ALI inspections are required by AD 2013-19-23, Amendment 39-17605 (78 FR 61173, October 3, 2013), Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016, contains an approved AMOC to AD 2013-19-23, for certain PSEs, after the initial inspections in that service bulletin are accomplished. We have not changed this AD in this regard.

#### **Request for Clarification of Extent of Boeing Organization Designation Authorization (ODA)**

Southwest Airlines (SWA) asked for clarification that the Boeing ODA identified in paragraph (i)(3) of the proposed AD can provide an AMOC for any "repair, modification, or alteration" that includes the authority to approve existing repairs in the inspection area that inhibit accomplishment of the AD requirements as terminating action to paragraph (g) of the proposed AD. SWA also asked if the ODA has the authority to provide alternative inspection procedures for repaired areas where the inspection in paragraph (g) of the proposed AD cannot be accomplished. Additionally, SWA asked that we clarify that the Boeing ODA identified in paragraph (i)(3) of the proposed AD is able to issue an AMOC for an existing repair at the S-14 lap joint (where the location of the repair inhibits accomplishing the initial inspection), provided the repair was approved by any FAA designation authority and there are a minimum of three fastener rows above and below the lap joint. SWA stated that neither Boeing Alert Service Bulletin 737-53A1352, dated October 2, 2015, nor the NPRM clearly state how to address existing repairs that prevent accomplishment of the inspections specified in paragraph (g) of the proposed AD.

We agree with the commenter that clarification of the extent of the authority of the Boeing ODA is necessary. The Boeing ODA includes the authority to evaluate existing repairs and provide alternative inspection programs in the repaired area, and includes approval of alternative inspections as AMOCs if accomplishment of the inspections required by paragraph (g) of this AD is inhibited. We have not changed this AD in this regard.

We infer that SWA is asking if the Boeing ODA can issue a global AMOC for the referenced repair. The Boeing ODA does not have that authority. We have not received any information from Boeing that defines such a repair that would be considered for a global AMOC. If Boeing provides supporting data, we will evaluate the data to determine if that repair and any associated inspections provide an acceptable level of safety. We have not changed this AD in this regard.

## Change to This AD

We have reviewed Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016, and there are no substantial changes. Therefore, we have included Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016, as the appropriate source of service information for accomplishing in the actions required by paragraph (g) of this AD. We have also added a new paragraph (h) to this AD to provide credit for actions done prior to the effective date of this AD using Boeing Alert Service Bulletin 737-53A1352, dated October 2, 2015. We have redesignated subsequent paragraphs 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 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 AD.

## Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016. The service information describes procedures for low frequency eddy current inspections and repair for cracking in the lower fastener row of the S-14L and S-14R lap splices. 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 1,513 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 for Group 1 airplanes (1,471 airplanes)	84 work-hours × \$85 per hour = \$7,140 per inspection cycle	\$0	\$7,140 per inspection cycle	\$10,502,940 per inspection cycle.
Inspection for Group 2 airplanes (42 airplanes)	65 work-hours × \$85 per hour = \$5,525 per inspection cycle	0	\$5,525 per inspection cycle	\$232,050 per inspection cycle.

We have received no definitive data that enables 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.

## **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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**2016-22-13 The Boeing Company:** Amendment 39-18702; Docket No. FAA-2016-5034; Directorate Identifier 2015-NM-172-AD.

**(a) Effective Date**

This AD is effective December 27, 2016.

**(b) Affected ADs**

None.

**(c) Applicability**

(1) This AD applies to all The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, certificated in any category.

(2) Installation of Supplemental Type Certificate (STC) ST00830SE ([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgSTC.nsf/0/38B606833BBD98B386257FAA00602538?OpenDocument&Highlight=st00830se](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSTC.nsf/0/38B606833BBD98B386257FAA00602538?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.

**(d) Subject**

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

**(e) Unsafe Condition**

This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the stringer (S)-14L and S-14R lap splices are subject to widespread fatigue damage (WFD). We are issuing this AD to detect and correct widespread cracking in the S-14L and S-14R lap splices that could rapidly link up and result in possible rapid decompression and reduced structural integrity of the airplane.

**(f) Compliance**

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

**(g) Repetitive Inspections**

At the applicable compliance time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016, do a low frequency eddy current inspection for cracking of the lower fastener row of S-14L and S-14R lap splices, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016. Repeat the inspection thereafter at the applicable times specified in paragraph 1.E.,

"Compliance," of Boeing Alert Service Bulletin 737-53A1352, Revision 1, dated March 10, 2016. If any cracking is found, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

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

This paragraph provides credit for the actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 737-53A1352, dated October 2, 2015.

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

(1) The Manager, Seattle 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 (j) of this AD. Information 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, 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, Seattle 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) For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (i)(4)(i) and (i)(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.

#### **(j) Related Information**

For more information about this AD, contact Gaetano Settineri, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6577; fax: 425-917-6590; email: gaetano.settineri@faa.gov.

#### **(k) 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 737-53A1352, Revision 1, dated March 10, 2016.

(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; 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 October 21, 2016.

Michael Kaszycki,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.