



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-6538; Directorate Identifier 2015-NM-031-AD; Amendment 39-18668; AD 2016-20-02]

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 737-300, -400, and -500 series airplanes. This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the aft pressure bulkhead is subject to widespread fatigue damage (WFD). This AD requires repetitive inspections of the aft pressure bulkhead web for any cracking, incorrectly drilled fastener holes, and elongated fastener holes; and related investigative and corrective actions, if necessary. We are issuing this AD to detect and correct fatigue cracking of the aft pressure bulkhead web at the “Y”-chord, which could result in reduced structural integrity of the airplane and rapid decompression of the fuselage.

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: 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 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-2015-6538.

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-2015-6538; 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: Payman Soltani, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; telephone: 562-627-5313; fax: 562-627-5210; email: payman.soltani@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 November 30, 2015 (80 FR 74731) (“the NPRM”). The NPRM was prompted by an evaluation by the DAH indicating that the aft pressure bulkhead is subject to WFD. The NPRM proposed to require repetitive inspections of the aft pressure bulkhead web for any cracking, incorrectly drilled fastener holes, and elongated fastener holes, and related investigative and corrective actions, if necessary. We are issuing this AD to detect and correct fatigue cracking of the aft pressure bulkhead web at the “Y”-chord, which could result in reduced structural integrity of the airplane and rapid decompression of the fuselage.

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.

Effect of Winglets on Accomplishment of the Proposed Actions

Aviation Partners Boeing stated that the installation of winglets per supplemental type certificate (STC) ST01219SE does not affect the accomplishment of the manufacturer’s service instructions.

We agree with the commenter. We have redesignated paragraph (c) of the NPRM as paragraph (c)(1) in this final rule and added a new paragraph (c)(2) to state that STC ST01219SE does not affect the mitigating action or accomplishment of the actions required by this final rule. 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 39.71.

Request to Clarify the Proposed Requirements of the NPRM

Mr. Cas Lausberg stated that the subject of the NPRM is addressed in AD 99-08-23, Amendment 39-11132 (64 FR 19879, April 23, 1999) (“AD 99-08-23”), which was superseded by AD 2012-18-13 R1, Amendment 39-17429 (78 FR 27020,

May 9, 2013) (“AD 2012-18-13 R1”). The commenter questioned the need for the new NPRM.

We agree to provide clarification. As stated in the “Discussion” section of the NPRM, this final rule is being issued as part of the overall joint effort by Boeing and the FAA to satisfy requirements of the FAA’s WFD final rule (75 FR 69746, November 15, 2010), which became effective on January 14, 2011. The inspections required by AD 99-08-23 and AD 2012-18-13 R1 do not address WFD concerns. However, Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015, addresses WFD with new inspection requirements, which incorporate a compliance time (threshold) corresponding to the WFD inspection start point (ISP) and shorter repetitive intervals where indicated. These requirements are included in this AD. We have not changed this AD in this regard.

Request to Revise the Term “Global Fatigue Damage”

Boeing requested that the term “global fatigue damage” be changed to “widespread fatigue damage” in the NPRM. Boeing stated that this is the first time it has seen the term “global” used to describe WFD. Boeing commented that it is better not to introduce a new term.

We agree with the commenter. Although the “Discussion” section of the proposed rule is not carried over into the final rule, we agree that the term “global fatigue damage” should not be introduced as a new term. We have not changed this AD in this regard.

Request to Correct Reference to Group 1 LOV (Limit of Validity)

Boeing requested that we change the wording in the “Differences Between This Proposed AD and the Service Information” paragraph of the NPRM, which referred to WFD-based inspections specified in certain tables of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015. The NPRM stated that the WFD-based inspections would affect only Group 2 airplanes because Group 1 airplanes

will reach their LOV before the compliance times specified “in tables 9, 10, and 11” of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015.

Boeing stated that the inspections listed in tables 9, 10, and 11 of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015, also include non-WFD inspections that are required prior to the ISP threshold of 76,000 cycles. Boeing stated that, therefore, it is not true to say that Group 1 airplanes will reach their limit of validity before the compliance times specified in tables 9, 10 and 11.

We partially agree with the commenter. Although the “Differences Between This Proposed AD and the Service Information” paragraph of the proposed rule is not carried over into the final rule, we agree to provide clarification.

Since AD 2012-18-13 R1 was issued, Boeing issued Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015. Affected airplanes are now divided into two groups: Group 1, line numbers 1 through 2565 inclusive; and Group 2, line numbers 2566 through 3132 inclusive. Boeing’s evaluation determined that inspections to address WFD concerns are required for the aft pressure bulkhead web at the “Y” chord at an ISP of 76,000 total flight cycles. Since Group 1 airplanes will reach their LOV of 75,000 total flight cycles (34,000 total flight cycles for line numbers 1 through 291 inclusive), which is prior to this ISP, no WFD inspections are provided for those airplanes. For Group 2 airplanes, which have an LOV of 85,000 total flight cycles, new tables 9, 10, and 11 of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015, include inspections to address WFD. We have not changed this AD in this regard.

Request to Clarify the Applicability

Boeing requested that we clarify the applicability of the proposed AD. Boeing stated that Model 737-100, -200, and -200C airplanes should be removed from the

“Applicability” paragraph. Boeing stated that the Group 2 airplanes only include Model 737-300, -400, and -500 airplanes.

We agree with the commenter’s request for the reasons stated above. We have revised the applicability in paragraph (c) of this AD to remove Model 737-100, -200, and -200C series airplanes and revised the SUMMARY section to specify certain Model 737-300, -400, and -500 series airplanes.

Request to Clarify Airplanes Affected by Terminating Action Provisions

Boeing requested that we change the wording for the terminating action in paragraph (j) of the proposed AD. Boeing stated that the paragraph should specify that the terminating action applies only to Group 2 airplanes. Boeing stated that specifying Group 2 airplanes clearly states the intent of the terminating action.

We agree with the commenter’s request for the reasons stated above. We have expanded the structure of paragraph (j) of this AD accordingly. In addition, we have clarified that the terminating action does not apply to stringer S-5L to S-7L and stringer S-5R to S-9R, as specified in AD 2012-18-13 R1 and Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015.

Request to Revise the Inspections for Group 2 Airplanes

All Nippon Airways (ANA) requested that we revise the inspection requirements in the proposed AD for Group 2 airplanes. ANA requested that we either mandate the inspections in tables 10 and 11 of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015, for only Group 2 airplanes with 76,000 flight cycles and more, or create a new NPRM to supersede AD 2012-18-13 R1 to mandate all inspection requirements using Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015. ANA stated that if a new proposed rule is created, it requests that credit be given for any previously approved AMOCs to AD 2012-18-13 R1, to reduce additional burden for operators and the FAA.

We agree with the commenter's request for the reasons stated by the commenter. The intent of this final rule is to address the WFD concerns in accordance with the FAA's WFD final rule (75 FR 69746, November 15, 2010). We have revised paragraphs (g), (h), and (l) of this AD accordingly.

Additional Changes to this AD

In paragraphs (g) and (h) of this AD, we have clarified the compliance times by explicitly stating the compliance times instead of referring to the compliance tables in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015.

The actions in paragraph (h) of the proposed AD states to do detailed and eddy current inspections of the aft pressure bulkhead web from the forward or aft side of the bulkhead for any cracking, incorrectly drilled fastener hole, and elongated fastener hole. In this AD, we have clarified the actions by providing the operators the option of doing detailed and LFEC inspections from the aft side of the aft pressure bulkhead, or doing a detailed and HFEC inspections from the forward side of the aft pressure bulkhead, for any cracking, incorrectly drilled fastener hole, and elongated fastener hole.

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 737-53A1214, Revision 5, dated January 30, 2015. The service information describes procedures for, among other actions, repetitive inspections of the aft pressure bulkhead web for any cracking, incorrectly drilled fastener holes, and elongated fastener holes; and related investigative and corrective 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 122 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
Inspections of the web at the “Y”-chord	Up to 60 work-hours X \$85 per hour = Up to \$5,100 per inspection cycle	\$0	Up to \$5,100 per inspection cycle	Up to \$622,200 per inspection cycle

We have received no definitive data that will 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.

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):

2016-20-02 The Boeing Company: Amendment 39-18668; Docket No. FAA-2015-6538; Directorate Identifier 2015-NM-031-AD.

(a) Effective Date

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

(b) Affected ADs

This AD affects AD 2012-18-13 R1, Amendment 39-17429 (78 FR 27020, May 9, 2013) (“AD 2012-18-13 R1”).

(c) Applicability

(1) This AD applies to The Boeing Company Model 737-300, -400, and -500 series airplanes, certificated in any category, identified as Group 2 in Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015.

(2) Installation of Supplemental Type Certificate (STC) ST01219SE (http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/EBD1CEC7B301293E86257CB30045557A?OpenDocument&Highlight=st01219s) 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 an evaluation by the design approval holder indicating that the aft pressure bulkhead is subject to widespread fatigue damage. We are issuing this AD to detect and correct fatigue cracking of the aft pressure bulkhead web at the “Y”-chord, which could result in reduced structural integrity of the airplane and rapid decompression of the fuselage.

(f) Compliance

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

(g) Repetitive Inspections of the Aft Pressure Bulkhead Web at the “Y”-Chord Upper Bulkhead

Within 76,000 total flight cycles, or within 4,500 flight cycles since the most recent low frequency eddy current (LFEC) inspection accomplished in accordance with AD 2012-18-13 R1, or within 9,500 flight cycles since the most recent high frequency eddy current (HFEC) inspection accomplished in accordance with AD 2012-18-13 R1, whichever occurs latest: Do detailed and LFEC inspections from the aft side of the aft pressure bulkhead web, or do detailed and HFEC inspections from the forward side of the aft pressure bulkhead web, for any cracking, incorrectly drilled fastener hole, and elongated fastener hole, and do all applicable related investigative and corrective actions, in accordance with Part I of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015, except as required by paragraph (i) of this AD. Do all related investigative and corrective actions before further flight. If any cracking, incorrectly drilled fastener hole, or elongated fastener hole is found, before further flight, repair the aft pressure bulkhead web using a method approved in accordance with the procedures specified in paragraph (l) of this AD. Thereafter, repeat the inspections at the applicable times specified in table 10 of

paragraph 1.E., “Compliance” of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015.

(h) Repetitive Inspections of the Aft Pressure Bulkhead Web at the “Y”-Chord Below S-15

Within 76,000 total flight cycles, or within 4,500 flight cycles since the most recent LFEC inspection accomplished in accordance with AD 2012-18-13 R1, or within 9,500 flight cycles since the most recent HFEC inspection accomplished in accordance with AD 2012-18-13 R1, whichever occurs latest: Do detailed and LFEC inspections from the aft side of the aft pressure bulkhead, or do detailed and HFEC inspections from the forward side of the aft pressure bulkhead, for any cracking, incorrectly drilled fastener hole, and elongated fastener hole, and do all applicable corrective actions, in accordance with Part III of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015, except as required by paragraph (i) of this AD. Do all corrective actions before further flight. If any cracking, incorrectly drilled fastener hole, or elongated fastener hole is found, before further flight, repair the aft pressure bulkhead web using a method approved in accordance with the procedures specified in paragraph (l) of this AD. Thereafter, repeat the inspections at the applicable times specified in table 11 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015.

(i) Exception to the Service Information

Where Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015, specifies to contact Boeing for repair instructions: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(j) Terminating Action for Other Rulemaking

(1) For Group 2 airplanes specified in Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015: Accomplishing the actions required by paragraph (g) of this AD terminates the inspections required by paragraph (k) of AD 2012-18-13 R1, except for stringer S-5L to S-7L and stringer S-5R to S-9R.

(2) For Group 2 airplanes specified in Boeing Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015: Accomplishing the actions required by paragraph (h) of this AD terminates the inspections required by paragraph (l) of AD 2012-18-13 R1.

(k) Credit for Previous Actions

This paragraph provides credit for the actions required by paragraphs (g) and (h) of this AD, if the actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 737-53A1214, Revision 4, dated December 16, 2011.

(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)(1) 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, 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) AMOCs approved previously for AD 2012-18-13 R1, Amendment 39-17429 (78 FR 27020, May 9, 2013), are approved as AMOCs for the corresponding provisions of this AD.

(m) Related Information

(1) For more information about this AD, contact Payman Soltani, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles ACO, 3960 Paramount Boulevard, Lakewood CA 90712-4137; telephone: 562-627-5313; fax: 562-627-5210; email: payman.soltani@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified 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 Alert Service Bulletin 737-53A1214, Revision 5, dated January 30, 2015.

(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 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 September 16, 2016.

Thomas Groves,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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