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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2017-0244; Product Identifier 2016-NM-044-AD; Amendment 39-19071; AD 2017-20-14]**

**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 737-300, -400, and -500 series airplanes. This AD was prompted by a determination that supplemental inspections are required for timely detection of fatigue cracking for certain structural significant items (SSIs). This AD requires revising the maintenance or inspection program, as applicable, to add supplemental inspections. This AD also requires inspections to detect cracks in each SSI, and repair of any cracked structure. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective November 16, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of November 16, 2017.

**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 service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0244.

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

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0244; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final

rule, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Jennifer Tsakoumakis, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5264; fax: 562-627-5210; email: jennifer.tsakoumakis@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 737-300, -400, and -500 series airplanes. The NPRM published in the Federal Register on March 27, 2017 (82 FR 15169). The NPRM was prompted by a determination that supplemental inspections are required for timely detection of fatigue cracking for certain SSIs. The NPRM proposed to require revising the maintenance or inspection program, as applicable, to add supplemental inspections and SSI discrepancy reporting. The NPRM also proposed to require inspections to detect cracks in each SSI, and repair of any cracked structure. We are issuing this AD to ensure the continued structural integrity of all The Boeing Company Model 737-300, -400, and -500 series airplanes.

### **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 Revise Program Designation**

Boeing requested that we revise “maintenance or inspection program” to “maintenance inspection program” in the proposed AD. Boeing stated that operators have a single program that relates to the Supplemental Structural Inspection Document (SSID).

We do not agree with the commenter's request. Airplanes operating under 14 CFR part 91 have “inspection programs” while airplanes operating under 14 CFR part 121 have “maintenance programs.” The decision to use the wording “maintenance or inspection program” is intentional. We have not changed this AD in this regard.

### **Request To Revise Service Information Reference**

Boeing requested that we revise the proposed AD to refer to the specified service information as “Revision 1, October 2015,” instead of “Revision, October 2015.”

We do not agree with Boeing's request. The document title page, List of Effective Pages table, Revision Highlights table, document footer, and SSID Revision table listed under “1.0 Purpose” all identify the revision as “October 2015,” and not as “Revision 1, October 2015.” We have not changed this AD in this regard.

### **Request To Revise Compliance Times**

Boeing and Southwest Airlines (SWA) requested that we revise the compliance time for the initial inspections in paragraph (h) of the proposed AD. Boeing requested that the compliance time for initial inspections be changed from “before the accumulation of 66,000 total flight cycles, or

within 12 months after the effective date of this AD, whichever occurs later” to before the accumulation of 66,000 total flight cycles, or at the next scheduled inspection as required by AD 2008-09-13, Amendment 39-15494 (73 FR 24164, May 2, 2008) (“AD 2008-09-13”), whichever occurs later. Boeing stated that, if operators have started SSID inspections, they should continue as scheduled in accordance with AD 2008-09-13; however, if they have not started inspections, they should already be prepared to begin at the 66,000 total flight cycle compliance time and that no new grace period is needed from the effective date of this AD. SWA stated that operators who have completed SSID inspections as required by AD 2008-09-13 would be required to repeat inspections within 12 months and it does not believe this is the intent of the proposed AD. SWA suggested that only inspections with revised requirements in the proposed AD should require future action and that all other inspections completed in accordance with the previous SSID revision, including alternative inspections with an alternative method of compliance (AMOC) approval, should be accepted as compliance to the proposed AD.

Isaac Trolinder requested that we revise the compliance time measurement in paragraph (g) of the proposed AD from total flight cycles to total flight miles.

We do not agree with Isaac Trolinder's request. Compliance times for the actions in this AD are defined in terms of total airplane flight cycles and are not dependent on flight miles.

We partially agree with Boeing and SWA's requests. We disagree with Boeing's request to remove the 12-month grace period. Operators who are very close to accomplishing an initial or repeat inspection required by AD 2008-09-13 need time to incorporate the revised service information in their maintenance or inspection program. Because this AD is not superseding the existing SSID AD, any initial or repeat inspection required by AD 2008-09-13 will still be required until the corresponding action in this AD is accomplished.

We agree with SWA that previously approved AMOCs for inspections of SSIs that are not affected by the revised service information should remain applicable. This is addressed in paragraph (1)(4) of this AD.

We agree with Boeing and SWA that we need to address the situation where an operator has already initiated inspections on SSIs.

We have revised the introductory text of paragraph (h) of this AD and added paragraphs (h)(1) and (h)(2) to this AD to include compliance time options to address compliance times for SSIs affected, and not affected, by the revised service information. This new wording provides identical requirements to paragraph (h) in the proposed AD, but offers a relieving option to operators who have initiated SSID inspections for certain SSIs.

### **Request To Address Repaired or Altered SSIs**

Boeing requested that we revise the proposed AD to include a paragraph that addresses any repair installed on an SSI such that the repair affects the operator's ability to accomplish inspections required by the proposed AD. Boeing suggested that we include wording similar to the wording in paragraph (i) from AD 2008-09-13, except that we make the actions applicable to a repair installed on an SSI at any time and not exclusive to repairs installed before the effective date of the AD.

We agree with the commenter's request to revise this AD to include wording to address repairs or alterations on any SSI such that the repair or alteration affects the operator's ability to accomplish the inspections required by this AD. We have included paragraphs (i)(1) and (i)(2) in this AD. Paragraph (i)(1) of this AD requires repairs to SSI structure if cracks are found while accomplishing inspections in accordance with this AD and is similar to paragraph (i) of the proposed AD, except for the change described below under “Change to Paragraph (i) of the Proposed AD.” Paragraph (i)(2) is added to this AD to address repairs or alterations that affect the ability to inspect an SSI as required by this AD. If an operator finds a repaired or altered SSI such that the repair or alteration affects the operator's ability to accomplish the inspections required by this AD and the repair or alteration does not have AMOC approval in accordance with paragraph (l) of this AD, then paragraph (i)(2) of this

AD will provide the operator an 18-month grace period after the compliance time to request an AMOC.

### **Change to Paragraph (i) of the Proposed AD**

Paragraph (i) of the proposed AD specifies to repair “using a method approved in accordance with the procedures specified in paragraph (l) of this AD.” We have changed the method of compliance language in paragraph (i)(1) of this AD to specify to repair “using an FAA-approved method.” Specifying an FAA-approved method will allow for FAA Designated Engineering Representatives (DERs) to approve repairs in addition to the Boeing Commercial Airplanes Organization Designation Authorization (ODA) and the Los Angeles ACO Branch as specified by the procedures in paragraph (l) of this AD. If an FAA DER has the appropriate structures delegation for major repairs on 14 CFR part 25 airplanes, then the DER has the authority to approve these types of repairs.

### **Acknowledgement of Revision to Global AMOC Needed**

Aviation Partners Boeing (APB) acknowledged that installation of supplemental type certificate (STC) ST01219SE requires the modification of wing structure on Boeing Model 737-300 and -500 airplanes, making it impossible to inspect the modified structure using the service information. APB noted that it has a global AMOC to paragraphs (g) and (h) of AD 2008-09-13 for alternative inspections of the STC modified structure. APB stated that it will revise its inspection program for STC ST01219SE to adjust for the changes in Boeing Document D6-82669, “Supplemental Structural Inspection Document, Models 737-300/400/500 Airplanes,” Revision October 2015, that affect the modified structure. APB stated that it will request a new global AMOC when the final rule is published.

We acknowledge APB's comment. No change is needed to this AD in this regard.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

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

### **Related Service Information Under 1 CFR Part 51**

We reviewed Boeing Document D6-82669, “Supplemental Structural Inspection Document, Models 737-300/400/500 Airplanes,” Revision October 2015. The service information identifies SSIs having fatigue crack growth characteristics warranting special attention, describes procedures for inspections to detect cracks of all structure identified as SSIs, and provides corrective actions for cracked SSI structure. 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 will affect 500 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
Revision of maintenance or inspection program	1 work-hour × \$85 per hour = \$85	\$0	\$85	\$42,500

We have not specified cost estimates for the inspections and repair specified in this AD. Compliance with this AD constitutes a method of compliance with the FAA aging airplane safety final rule (AASFR) for certain baseline structure of Model 737-300, -400, and -500 series airplanes. The AASFR requires certain operators to incorporate damage tolerance inspections into their maintenance programs. These requirements are described in 14 CFR 121.1109(c)(1) and 14 CFR 129.109(b)(1). Accomplishment of the actions specified in this AD will meet the requirements of these regulations for certain baseline structure. The costs for accomplishing the inspection portion of this AD were accounted for in the regulatory evaluation of the AASFR for airplanes affected by that rule. For airplanes not affected by the AASFR, we have received no definitive data that would enable us to provide cost estimates for the inspection portion of this AD.

We estimate the following costs to do any necessary reporting that would be required based on the results of the inspections specified in the revision of the maintenance or inspection program. We have no way of determining the number of aircraft that might need this action:

### On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Reporting	1 work-hour × \$85 per hour = \$85	\$0	\$85

## Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this AD is 2120-0056. The paperwork cost associated with this AD has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as completing and reviewing the collection of information. Therefore, all reporting associated with this AD is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800 Independence Ave. SW., Washington, DC 20591, ATTN: Information Collection Clearance Officer, AES-200.

## Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with

promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):



**FAA**  
**Aviation Safety**

## **AIRWORTHINESS DIRECTIVE**

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

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**2017-20-14 The Boeing Company:** Amendment 39-19071; Docket No. FAA-2017-0244; Product Identifier 2016-NM-044-AD.

### **(a) Effective Date**

This AD is effective November 16, 2017.

### **(b) Affected ADs**

This AD affects AD 2008-09-13, Amendment 39-15494 (73 FR 24164, May 2, 2008) (“AD 2008-09-13”).

### **(c) Applicability**

This AD applies to all The Boeing Company Model 737-300, -400, and -500 series airplanes, certificated in any category.

### **(d) Subject**

Air Transport Association (ATA) of America Code 52, Doors; 53, Fuselage; 54, Nacelles/Pylons; 55, Stabilizers; 57, Wings.

### **(e) Unsafe Condition**

This AD was prompted by a structural reevaluation conducted by the manufacturer. We have determined that supplemental inspections are required for timely detection of fatigue cracking for certain structural significant items (SSIs). We are issuing this AD to ensure the continued structural integrity of all The Boeing Company Model 737-300, -400, and -500 series airplanes.

### **(f) Compliance**

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

### **(g) Revision of the Maintenance or Inspection Program for All Airplanes**

Before the accumulation of 66,000 total flight cycles, or within 12 months after the effective date of this AD, whichever occurs later: Incorporate a revision into the maintenance or inspection program, as applicable, that provides no less than the required damage tolerance rating (DTR) for each SSI listed in Boeing Document D6-82669, “Supplemental Structural Inspection Document, Models 737-300/400/500 Airplanes,” Revision October 2015. The required DTR value for each SSI is listed in Boeing Document D6-82669, “Supplemental Structural Inspection Document, Models 737-300/400/500 Airplanes,” Revision October 2015. The revision to the maintenance or inspection program must include, and must be implemented in accordance with, the procedures in Section 5.0, “Damage Tolerance Rating (DTR) System Application;” and Section 6.0, “SSI Discrepancy

Reporting;” of Boeing Document D6-82669, “Supplemental Structural Inspection Document, Models 737-300/400/500 Airplanes,” Revision October 2015. Accomplishment of the revision required by this paragraph terminates the requirements of paragraph (g) of AD 2008-09-13.

#### **(h) Initial and Repetitive Inspections**

At the applicable time specified in paragraphs (h)(1) and (h)(2) of this AD, perform an inspection in accordance with Boeing Document D6-82669, “Supplemental Structural Inspection Document, Models 737-300/400/500 Airplanes,” Revision October 2015, to detect cracks of the applicable structure identified in paragraphs (h)(1) and (h)(2) of this AD. Repeat the inspections thereafter at the intervals specified in Boeing Document D6-82669, “Supplemental Structural Inspection Document, Models 737-300/400/500 Airplanes,” Revision October 2015. Accomplishing an initial inspection required by this paragraph terminates the corresponding inspection required by paragraph (h) of AD 2008-09-13.

(1) For all structure identified in Boeing Document D6-82669, “Supplemental Structural Inspection Document, Models 737-300/400/500 Airplanes,” Revision October 2015, except for empennage SSIs E-19, E-21, E-29, E-30, and E-31: Before the accumulation of 66,000 total flight cycles, at the next repetitive inspection required by paragraph (h) of AD 2008-09-13, or within 12 months after the effective date of this AD, whichever occurs latest.

(2) For empennage SSIs E-19, E-21, E-29, E-30, and E-31: Before the accumulation of 66,000 total flight cycles, or within 12 months after the effective date of this AD, whichever occurs later.

#### **(i) Repairs and Alterations**

(1) If any cracked SSI structure is found during any inspection required by paragraph (h) of this AD, repair before further flight using an FAA-approved method or using a method approved in accordance with the procedures specified in paragraph (l) of this AD. Within 18 months after repair, incorporate a revision into the maintenance or inspection program, as applicable, to include a damage-tolerance-based alternative inspection program for the repaired structure. Thereafter, inspect the affected structure in accordance with the alternative program. The inspection method and compliance times (i.e., threshold and repetitive intervals) of the alternative program must be approved in accordance with the procedures specified in paragraph (l) of this AD.

(2) If any repair or alteration to an SSI is found during any inspection required by paragraph (h) of this AD such that the repair or alteration affects your ability to accomplish the inspections required by paragraph (h) of this AD, within 18 months after the inspection compliance time, incorporate a revision into the maintenance or inspection program, as applicable, to include a damage tolerance based alternative inspection program for each affected SSI. Thereafter, inspect the affected structure in accordance with the alternative inspection program. The inspection method and compliance times (i.e., threshold and repetitive intervals) of the alternative inspection program must be approved in accordance with the procedures specified in paragraph (l) of this AD. Accomplishing an initial inspection required by this paragraph terminates the corresponding inspection required by paragraph (i) of AD 2008-09-13.

#### **(j) Terminating Action for AD 2008-09-13**

Accomplishing the revision required by paragraph (g) of this AD and all initial inspections required by paragraph (h) of this AD terminates all requirements of AD 2008-09-13.

#### **(k) Paperwork Reduction Act Burden Statement**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to



the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

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

(1) The Manager, Los Angeles Aircraft ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (m) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO Branch, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) AMOCs approved for AD 2008-09-13 are approved as AMOCs for the corresponding provisions of paragraphs (g) and (h) of this AD for the SSIs identified in the AMOC, except for AMOCs written for empennage SSIs E-19, E-21, E-29, E-30, and E-31.

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

For more information about this AD, contact Jennifer Tsakoumakis, Aerospace Engineer, Airframe Section FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5264; fax: 562-627-5210; email: jennifer.tsakoumakis@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 Document D6-82669, "Supplemental Structural Inspection Document, Models 737-300/400/500 Airplanes," Revision October 2015.

(ii) Reserved.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster 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 Standards Branch, 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 27, 2017.  
Dionne Palermo,  
Acting Director, System Oversight Division,  
Aircraft Certification Service.