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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2016-9523; Product Identifier 2016-NM-134-AD; Amendment 39-19270; AD 2018-09-13]**

**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 737-100, -200, -200C, -300, -400, and -500 series airplanes. This AD was prompted by reports indicating additional cracking in the in spar upper skin at wing buttock line (WBL) 157 and in the skin at two holes common to the rear spar in the same area, and rear spar web cracks were also noted on both wings. Subsequent inspections revealed that the right rear spar upper chord was almost completely severed and the left rear spar upper chord was completely severed. Additional reports identified cracking in the main landing gear (MLG) beam forward support fitting. This AD requires the installation of standard-size fasteners for a certain configuration and inspections for any crack in certain locations of the rear spar. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective June 19, 2018.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of June 19, 2018.

**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 service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9523.

## **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-2016-9523; or in person at Docket Operations 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 Docket Operations (phone: 800-647-5527) is Docket Operations, 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 Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5313; fax: 562-627-5210; email: [payman.soltani@faa.gov](mailto: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 all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. The NPRM published in the Federal Register on January 5, 2017 (82 FR 1254). The NPRM was prompted by reports of cracking in locations outside the inspection area identified in AD 2014-12-13, Amendment 39-17874 (79 FR 39300, July 10, 2014) (“AD 2014-12-13”), in the in spar upper skin at WBL 157 and in the skin at two holes common to the rear spar in the same area, and in the rear spar web on both wings. Subsequent inspections revealed that the right rear spar upper chord was almost completely severed and the left rear spar upper chord was completely severed. Operators also reported cracking in the MLG beam forward support fitting.

We subsequently issued a supplemental notice of proposed rulemaking (SNPRM) which was published in the Federal Register on August 11, 2017 (83 FR 37549) (“the first SNPRM”). The first SNPRM proposed to require expanding the inspection area, add applicable related investigative and corrective actions, and to terminate (rather than supersede) the requirements of AD 2014-12-13 after accomplishment of the initial inspections.

We issued a second SNPRM which was published in the Federal Register on January 17, 2018 (83 FR 2378) (“the 2018 SNPRM”). The 2018 SNPRM proposed to require the installation of standard-size fasteners for a certain configuration. We are issuing this AD to address cracking of the forward and aft support fittings for the main landing gear beam, and the rear spar upper chord and rear spar web in the area of rear spar station 224.14, which could grow and result in a fuel leak and possible fire.

### **Comments**

We gave the public the opportunity to participate in developing this final rule. We have considered the comment received. Boeing supported the 2018 SNPRM.

### **Conclusion**

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting this final rule as proposed, except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the 2018 SNPRM for addressing the unsafe condition; and

- Do not add any additional burden upon the public than was already proposed in the 2018 SNPRM.

### Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016. This service information describes procedures for repetitive high frequency eddy current (HFEC) open hole inspections for any cracking in the forward support fitting, the aft support fitting, the rear spar upper chord, and the rear spar web at the 12 fastener holes (locations 1-12). This service information also describes procedures for optional HFEC open hole inspections for any cracking in the forward support fitting, the aft support fitting, the rear spar upper chord, and the rear spar web, and HFEC surface inspections for any cracking in the rear spar upper chord and rear spar upper web, as applicable. This service information also describes procedures for related investigative and corrective actions.

We also reviewed Boeing Alert Service Bulletin 737-57A1328, dated July 22, 2016. This service information describes procedures for repetitive eddy current inspections of the left and right wing for any cracking in the inspar upper skin and at the repair parts if applicable, 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 471 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
HFEC open hole inspections	82 work-hours × \$85 per hour = \$6,970 per inspection cycle	\$0	\$6,970 per inspection cycle	\$3,282,870 per inspection cycle.
Eddy current inspection	14 work-hours × \$85 per hour = \$1,190 per inspection cycle	\$0	\$1,190 per inspection cycle	\$560,490 per inspection cycle.

#### Estimated Costs for Optional Actions

Action	Labor cost	Parts cost	Cost per product
Inspection	Up to 41 work-hours × \$85 per hour = \$3,485 per inspection cycle	\$0	Up to \$1,641,435 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.

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 and associated appliances 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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**2018-09-13 The Boeing Company:** Amendment 39-19270; Docket No. FAA-2016-9523; Product Identifier 2016-NM-134-AD.

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

This AD is effective June 19, 2018.

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

This AD affects AD 2014-12-13, Amendment 39-17874 (79 FR 39300, July 10, 2014) (“AD 2014-12-13”); and AD 2015-21-08, Amendment 39-18301 (80 FR 65921, October 28, 2015) (“AD 2015-21-08”).

### **(c) Applicability**

(1) This AD applies to all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category.

(2) Installation of Supplemental Type Certificate (STC) ST01219SE 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 57, Wings.

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

This AD was prompted by reports of additional cracking in the inspar upper skin at wing buttock line 157 and in the skin at two holes common to the rear spar in the same area; rear spar web cracks were also noted on both wings. Subsequent inspections revealed that the right rear spar upper chord was almost completely severed and the left rear spar upper chord was completely severed. Additional reports identified cracking in the main landing gear (MLG) beam forward support fitting. We are issuing this AD to detect and correct cracking of the forward and aft support fittings for the MLG beam, and the rear spar upper chord and rear spar web in the area of rear spar station 224.14, which could grow and result in a fuel leak and possible fire.

### **(f) Compliance**

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

**(g) Required Actions for Group 1 Airplanes (MLG Support Fittings and Rear Spar)**

For airplanes identified as Group 1 in Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016: At the applicable time specified in table 1 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016, do applicable inspections and corrective actions using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

**(h) Required Actions for Groups 2-7 Airplanes (MLG Support Fittings and Rear Spar)**

For airplanes identified as Groups 2-7 in Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016: At the applicable time specified in table 2 through table 9 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016, except as required by paragraph (j)(3) of this AD, do high frequency eddy current (HFEC) open hole inspections for any cracking in the forward support fitting, the aft support fitting, the rear spar upper chord, and the rear spar web at the 12 fastener holes (locations 1-12); or HFEC open hole inspections for any cracking in the forward support fitting, the aft support fitting, the rear spar upper chord, and the rear spar web, and an HFEC surface inspection for any cracking in the rear spar upper chord and rear spar upper web; as applicable; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016, except as provided by paragraph (h)(1) of this AD, and except as required by paragraphs (h)(2) and (j)(1) of this AD. Do all applicable related investigative and corrective actions before further flight. Thereafter, repeat the HFEC inspection at the applicable time specified in table 2 through table 9 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016.

(1) Options provided in Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016, for accomplishing the inspection are acceptable for the corresponding requirements in the introductory text of paragraph (h) of this AD, provided that the inspections are done at the applicable times in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016.

(2) For Group 7, Configuration 1, airplanes identified in Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016: Install standard-size fasteners in accordance with figures 29 and 30 of Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016. If the existing fastener holes exceed the permitted hole diameter, repair before further flight using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

**(i) Eddy Current Inspection (Inspar Upper Skin)**

For airplanes identified in Boeing Alert Service Bulletin 737-57A1328, dated July 22, 2016: At the applicable time specified in table 1 and table 2 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1328, dated July 22, 2016, except as required by paragraph (j)(2) of this AD, do an eddy current inspection of the left and right wings for any cracking in the inspar upper skin, and at the repair parts if installed, and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-57A1328, dated July 22, 2016, except as required by paragraph (j)(1) of this AD. Do all related investigative and corrective actions before further flight. Thereafter, repeat the eddy current inspection at the applicable time specified in table 1 and table 2 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1328, dated July 22, 2016.

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

(1) If any cracking is found during any inspection required by this AD, and Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016; or Boeing Alert Service Bulletin 737-57A1328, dated July 22, 2016; 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 Alert Service Bulletin 737-57A1328, dated July 22, 2016, specifies a compliance time “after the Original Issue date of this service bulletin,” this AD requires compliance within the specified compliance time after the effective date of this AD.

(3) Where Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016, specifies a compliance time “after the Revision 1 date of this service bulletin, whichever occurs later,” this AD requires compliance within the specified compliance time after the effective date of this AD.

## **(k) Terminating Action**

(1) Accomplishing the initial inspections and applicable related investigative and corrective actions required by paragraphs (g), (h), and (i) of this AD, as applicable, terminates all requirements of AD 2015-21-08.

(2) Accomplishing the initial inspections and applicable related investigative and corrective actions required by paragraphs (g) and (h) of this AD, as applicable, terminates all requirements of AD 2014-12-13.

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

(1) The Manager, Los Angeles 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 previously for AD 2014-12-13 are approved as AMOCs for the corresponding provisions of paragraphs (g) and (h) of this AD.

(5) Except as required by paragraph (j)(1) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (l)(5)(i) and (l)(5)(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 sub-step is labeled “RC Exempt,” then the RC requirement is removed from that step or sub-step. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided

the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

**(m) Related Information**

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

**(n) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Service Bulletin 737-57A1318, Revision 1, dated July 22, 2016.

(ii) Boeing Alert Service Bulletin 737-57A1328, dated July 22, 2016.

(3) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740; telephone 562-797-1717; internet <https://www.myboeingfleet.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(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 Des Moines, Washington, on April 27, 2018.

Michael Kaszycki,  
Acting Director, System Oversight Division,  
Aircraft Certification Service.