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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2011-0914; Directorate Identifier 2010-NM-166-AD; Amendment 39-16876; AD 2011-24-12]**

**RIN 2120-AA64**

#### **Airworthiness Directives; The Boeing Company Model 737-200, -200C, -300, -400, and -500 Series Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are superseding an existing airworthiness directive (AD) for certain Model 737-300, -400, and -500 series airplanes. That AD currently requires repetitive external non-destructive inspections to detect cracks in the fuselage skin along the chem-mill step at stringers S-1 and S-2 right, between station (STA) 827 and STA 847, and repair if necessary. This new AD adds inspections for cracking in additional fuselage crown skin locations, and repair if necessary. This new AD also reduces the inspection thresholds for certain airplanes, extends certain repetitive inspection intervals, and adds airplanes to the applicability of the existing AD. This AD was prompted by reports of additional crack findings of the fuselage crown skin at the chem-milled steps. We are issuing this AD to detect and correct fatigue cracking of the fuselage skin panels at the chem-milled steps, which could result in sudden fracture and failure of the fuselage skin panels, and consequent rapid decompression of the airplane.

**DATES:** This AD is effective January 5, 2012.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of January 5, 2012.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of February 16, 2010 (75 FR 1527, January 12, 2010).

**ADDRESSES:** For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone (206) 544-5000, extension 1; fax (206) 766-5680; Email me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call (425) 227-1221.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: (800) 647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Wayne Lockett, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: (425) 917-6447; fax: (425) 917-6590; Email: [wayne.lockett@faa.gov](mailto:wayne.lockett@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2010-01-09, Amendment 39-16167 (75 FR 1527, January 12, 2010). That AD applies to the specified products. The NPRM published in the Federal Register on September 1, 2011 (76 FR 54399). That NPRM proposed to continue to require repetitive external non-destructive inspections to detect cracks in the fuselage skin along the chem-mill step at stringers S-1 and S-2 right, between station (STA) 827 and STA 847, and repair if necessary. That NPRM also proposed to add inspections for cracking in additional fuselage crown skin locations, and repair if necessary. That NPRM also proposed to reduce the inspection thresholds for certain airplanes, extend certain repetitive inspection intervals, and add airplanes to the applicability of the existing AD.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We have considered the comments received. Boeing and the National Transportation Safety Board support the NPRM.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD as proposed.

### **Interim Action**

We consider this proposed AD interim action. If final action is later identified, we might consider further rulemaking then.

### **Costs of Compliance**

We estimate that this AD affects 654 airplanes of U.S. registry.  
We estimate the following costs to comply with this AD:

### Estimated Costs

Action	Work hours	Average labor rate per hour	Cost per product	Number of U.S.-registered airplanes	Fleet cost
Inspection in AD 2010-01-09 (75 FR 1527, January 12, 2010).	2	\$85	\$170 per inspection cycle.	135	\$22,950 per inspection cycle.
New inspection in this AD	Between 2 and 30	\$85	Between \$170 and \$2,550 per inspection cycle.	654	Between \$111,180 and \$1,667,700 per inspection cycle.

We have received no definitive data that would enable us to provide a cost estimate 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**

We have determined that 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 removing airworthiness directive (AD) 2010-01-09, Amendment 39-16167 (75 FR 1527, January 12, 2010), and adding the following new AD:



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**2011-24-12 The Boeing Company:** Amendment 39-16876; Docket No. FAA-2011-0914; Directorate Identifier 2010-NM-166-AD.

**(a) Effective Date**

This airworthiness directive (AD) is effective January 5, 2012.

**(b) Affected ADs**

This AD supersedes AD 2010-01-09, Amendment 39-16167 (75 FR 1527, January 12, 2010).

**(c) Applicability**

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

**(d) Subject**

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

**(e) Unsafe Condition**

This AD was prompted by reports of additional crack findings of the fuselage crown skin at the chem-milled steps. We are issuing this AD to detect and correct fatigue cracking of the fuselage skin panels at the chem-milled steps, which could result in sudden fracture and failure of the fuselage skin panels, and consequent rapid decompression of the airplane.

**(f) Compliance**

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

**Restatement of Requirements of AD 2010-01-09, Amendment 39-16167 (75 FR 1527, January 12, 2010)**

**(g) Initial and Repetitive Inspections**

For airplanes identified in Boeing Alert Service Bulletin 737-53A1301, dated September 3, 2009: Before the accumulation of 35,000 total flight cycles, or within 500 flight cycles after February 16, 2010 (the effective date of AD 2010-01-09), whichever occurs later, except as provided by paragraph (i) of this AD, do an external non-destructive inspection (NDI) to detect cracks in the fuselage skin along the chem-mill steps at stringers S-1 and S-2 right, between station (STA) 827 and STA 847, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1301, dated September 3, 2009; or Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011. If no cracking is found, repeat the inspection thereafter at intervals not to

exceed 500 flight cycles; except as provided by paragraphs (i) and (n) of this AD. Accomplishing the inspections required by paragraph (j) of this AD terminates the inspections required by this paragraph.

#### **(h) Repair**

If any crack is found during any inspection required by paragraph (g) of this AD, and Boeing Alert Service Bulletin 737-53A1301, dated September 3, 2009; or Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011; specifies to contact Boeing for repair instructions: Before further flight, repair the crack using a method approved in accordance with the procedures specified in paragraph (q) of this AD.

#### **(i) Optional Terminating Action for Repetitive Inspections in Paragraph (g) of This AD**

Installing an external repair doubler along the chem-milled steps at stringers S-1 and S-2 right, between STA 827 and STA 847, constitutes terminating action for the repetitive inspections required by paragraph (g) of this AD for the repaired area only, provided all of the conditions specified in paragraphs (i)(1), (i)(2), and (i)(3) of this AD are met.

(1) The repair is installed after September 3, 2009;

(2) The repair was approved by the FAA or by a Boeing Company Authorized Representative or the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle Aircraft Certification Office (ACO), FAA, to make such findings; and

(3) The repair extends a minimum of three rows of fasteners on each side of the chem-mill line in the circumferential direction.

#### **New Inspections Including Additional Locations and Reduced Inspection Intervals**

#### **(j) Groups 1 Through 25: Initial and Repetitive Inspections**

For Groups 1 through 25 airplanes identified in Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011: Except as provided by paragraph (k) of this AD, at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011, do the applicable inspections required by paragraphs (j)(1) and (j)(2) of this AD, in accordance with paragraphs 3.B.1 through 3.B.25 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011. If no cracking is found, repeat the applicable inspections thereafter at the applicable intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011; except as provided by paragraphs (m) and (n) of this AD. Doing the inspections required by this paragraph terminates the inspections required by paragraph (g) of this AD.

(1) For Groups 2, 8, 10, 13 through 18, and 21 through 25 airplanes: Do a detailed inspection and an external non-destructive inspection (NDI) (medium frequency eddy current inspection, magneto optical imaging inspection, c-scan inspection, or ultrasonic phased array inspection) for cracking in the fuselage skin at the chem-mill steps at stringers S-1 and S-2R between STA 827 and STA 847, as identified in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011.

(2) For Groups 1 through 25 airplanes: Do a detailed inspection and an external NDI (medium frequency eddy current inspection; magneto optical imaging inspection, c-scan inspection, or ultrasonic phased array inspection) for cracking in the fuselage skin at the chem-mill steps at the specified locations other than at S-1 and S-2R between STA 827 and STA 847, as identified in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011.

Note 1: Option 1 of Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011, specifies a detailed inspection, and one additional inspection (external NDI, medium frequency eddy current inspection, magneto optical imaging inspection, or c-scan inspection). Option 2 of Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011, specifies a detailed inspection and an external ultrasonic phased array inspection. These options have different compliance times after the initial inspection.

**(k) Exception**

Where Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011, specifies a compliance time after "the date of Revision 1," or "the date of Revision 2" of that service bulletin, this AD requires compliance within the specified time after the effective date of this AD.

**(l) Repair**

If any crack is found during any inspection required by paragraph (j) of this AD: Before further flight, repair the crack using a method approved in accordance with the procedures specified in paragraph (q) of this AD. Doing the repair ends the repetitive inspections required by paragraph (j) for the repaired area only.

**(m) Optional Terminating Action for Repetitive Inspections**

Installing an external repair doubler along the chem-milled steps at any location identified in Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011, constitutes terminating action for the repetitive inspections required by paragraph (j) of this AD for the repaired area only, provided all of the conditions specified in paragraphs (m)(1), (m)(2), and (m)(3) of this AD are met.

(1) The repair is installed after the applicable date specified in paragraph (m)(1)(i) and (m)(1)(ii) of this AD.

(i) For repairs at S-1 and S-2R between STA 827 and STA 847: Installed after September 3, 2009.

(ii) For repairs at locations other than at S-1 and S-2R between STA 827 and STA 847: Installed after June 7, 2010.

(2) The repair was approved by the FAA or by a Boeing Company Authorized Representative or the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle Aircraft Certification Office (ACO) to make such findings; and

(3) The repair extends a minimum of three rows of fasteners on each side of the chem-mill line in the circumferential direction.

**(n) Modification**

Accomplishing a modification of the chem-milled steps at any location identified in Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011, using a method approved in accordance with the procedures specified in paragraph (q)(1) of this AD, terminates the repetitive inspections required by paragraphs (g) and (j) of this AD for the modified area only.

**(o) Group 26 Airplanes**

For Group 26 airplanes identified in Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011: Within 1,800 flight cycles after the effective date of this AD, accomplish applicable inspections and corrective action, as identified in the service bulletin, using a method approved in accordance with the procedures specified in paragraph (q)(1) of this AD.

**(p) Credit for Actions Accomplished in Accordance With Previous Service Information**

Actions done before the effective date of this AD in accordance with Boeing Alert Service Bulletin 737-53A1301, Revision 1, dated June 7, 2010, are acceptable for compliance with the corresponding requirements of this AD.

**(q) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section 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 required by this AD if it is approved by the Boeing Commercial Airplanes ODA that has been authorized by the Manager, Seattle ACO to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane.

**(r) Related Information**

For more information about this AD, contact Wayne Lockett, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: (425) 917-6447; fax: (425) 917-6590; email: wayne.lockett@faa.gov.

**(s) Material Incorporated by Reference**

You must use the following service information to do the actions required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference (IBR) under 5 U.S.C. 552(a) and 1 CFR part 51 of the following service information on the date specified:

(1) Boeing Alert Service Bulletin 737-53A1301, Revision 2, dated April 25, 2011, approved for IBR January 5, 2012.

(2) Boeing Alert Service Bulletin 737-53A1301, dated September 3, 2009, approved for IBR February 16, 2010 (75 FR 1527, January 12, 2010).

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

(4) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call (425) 227-1221.

(5) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at an NARA facility, call (202) 741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on November 17, 2011.  
John P. Piccola,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.