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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2005-20627; Directorate Identifier 2004-NM-39-AD; Amendment 39-14290; AD 2005-19-25]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Boeing Model 737-100, -200, -200C, -300, -400, and -500 Series Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. This AD requires repetitive eddy current inspections for cracks of the countersunk rivet holes in the lower lobe, adjacent to the radio altimeter cutouts; additional inspections, for certain airplanes, for cracks and/or corrosion; and further investigative and corrective action if any crack is found. This AD also provides an optional terminating action for the repetitive inspections. This AD results from reports of cracks in the fuselage skin of the lower lobe. We are issuing this AD to detect and correct fatigue cracks of the countersunk rivet holes, which could result in cracks of the fuselage skin of the lower lobe, and consequent rapid depressurization of the cabin.

**DATES:** This AD becomes effective November 1, 2005.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of November 1, 2005.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, room PL-401, Washington, DC.

Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for service information identified in this AD.

**FOR FURTHER INFORMATION CONTACT:** Sue Lucier, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6438; fax (425) 917-6590.

## **SUPPLEMENTARY INFORMATION:**

### **Examining the Docket**

You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the street address stated in the ADDRESSES section. This docket number is FAA-2005-20627; the directorate identifier for this docket is 2004-NM-39-AD.

### **Discussion**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to certain Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. That NPRM was published in the Federal Register on March 17, 2005 (70 FR 12982). That NPRM proposed to require repetitive eddy current inspections for cracks of the countersunk rivet holes in the lower lobe, adjacent to the radio altimeter cutouts; additional inspections, for certain airplanes, for cracks and/or corrosion; and further investigative and corrective action if any crack is found. That NPRM also proposed to provide an optional terminating action for the repetitive inspections.

### **Comments**

We provided the public the opportunity to participate in the development of this AD. We have considered the comments that have been received on the NPRM.

### **Request to Add Note to Provide Inspection Deviations for Existing Repairs**

One commenter, an airplane operator, states that paragraph (g) of the NPRM does not address inspection deviations for airplanes that already have the repair doubler installed in accordance with Boeing Service Bulletin 737-53-1117. The commenter observes that, as the paragraph is currently worded, operators of these airplanes would be required to do an eddy current inspection in accordance with Part I of Boeing Special Attention Service Bulletin 737-53-1230, dated June 13, 2002. The commenter points out that operators of these airplanes would be forced to remove the doubler in order to do the eddy current inspection. The commenter notes that the section of the NPRM titled "Relevant Service Information" describes what to do for existing repairs, and states that this section matches Part II, Item 3, Note (a) of Boeing Special Attention Service Bulletin 737-53-1230. The commenter proposes that a similar note be added to paragraph (g) of the NPRM to provide inspection deviations for existing repairs.

We partially agree with the commenter. We agree that paragraph (g) of the NPRM is unclear with regard to the inspection options for the body station (BS) 390 cutout that has been previously modified in accordance with Boeing Service Bulletin 737-53-1117, Revision 1, dated April 6, 1989. If an operator has removed the doubler for other reasons, the current description in paragraph (g) of the NPRM would be sufficient; however, it would be beneficial to operators if the final rule provided optional inspections that could be performed without removing the doubler. We disagree with using the exact wording of Part II, Item 3, Note (a) of Boeing Special Attention Service Bulletin 737-53-1230, dated June 13, 2002. The instructions in that note describe specific actions affiliated with the preventive modification. The preventive modification, which includes inspection, can be accomplished in lieu of the initial inspection and will terminate ongoing inspections for that cutout only. However, we have revised paragraph (g) of the final rule to address inspection deviations for airplanes that already have the repair doubler.

## **Request to Clarify Wording in Paragraph (i)**

Two commenters request that we reword paragraph (i) of the NPRM to make the requirements more clear. One commenter states that the conditions listed in paragraph (i) do not clearly state that all three conditions need to be met. The other commenter states that, with the current wording in paragraph (i), it is unclear if the inspections in Table 1 are required if one or both of the following conditions occur: A crack at BS 390, and an external doubler not installed. The commenter then suggests that paragraph (i) of the NPRM be revised as follows: "For any airplane in Group 1, 2, 3, 4, or 5 of the special attention service bulletin, before or at the same time as the repair in paragraph (h) of this AD, inspect in accordance with Table 1 of this AD if one of the following conditions exist: (1) A skin crack at the cutout at BS 390 was found during any inspection including inspections required by paragraphs (g), (h), or (j) of this AD, or (2) an external repair doubler installed in accordance with Boeing Service Bulletin 737-53-1117, Revision 1, dated April 6, 1989, has not previously been installed."

We partially agree. We agree that there is confusion in the interpretation of the requirements. The confusion is because the repair doubler installed in accordance with Boeing Service Bulletin 737-53-1117, which is not mandated by this final rule, is on an adjacent piece of fuselage skin, and extends into the area addressed by the NPRM. Boeing Special Attention Service Bulletin 737-53-1230 does not clearly address this additional configuration, so we agree that we should provide further clarification in the final rule so that operators have adequate instructions for compliance. We disagree with the exact wording change that the commenter proposes because all of the conditions must exist to perform the additional inspections addressed by paragraph (i). We have revised paragraph (i) of the final rule to provide the necessary clarification. This revision made it necessary to add new paragraphs (i)(1) and (i)(2) to the final rule. We have re-lettered the subsequent paragraphs accordingly.

## **Request to Add Requirement to "Pre-Form" the External Doubler**

One commenter, the manufacturer, suggests that we add a requirement to "pre-form" the external doubler to the contour of the airplane prior to installation. The commenter states the repair and modification instruction in Boeing Service Bulletin 737-53-1117 do not specify a requirement to contour the repair or modification doublers. These doublers are 0.1 inch or 0.08 inch thick respectively, which may create some pull-up pre-stresses in the skin during installation unless they are pre-formed. The commenter points out that the skin in this area is 0.063 inch thick, so the concern for pre-stress is minimal. However, in the interest of time, in lieu of issuing a revision to the service bulletin to address the pre-form issue, the commenter suggests that we add this requirement to the final rule. The commenter states that there have not been any reports of cracks or other discrepancies in service from these doublers.

We disagree with the commenter. This rule addresses issues associated with safety related cracking that are not addressed by other mandated programs. The commenter states that this lack of "pre-forming" information has not lead to safety related cracking. Therefore, we conclude that this "pre-forming" requirement can be categorized as a product improvement to the existing service bulletin. This information is best included in the next revision of the service bulletin, and subsequently proposed as an alternative method of compliance. In addition, the repair/modification done in accordance with Boeing Service Bulletin 737-53-1117, Revision 1, dated April 6, 1989, is subject to the Repair Assessment Program operational rule, and would receive inspections to detect any safety related cracking caused by lack of pre-forming. We have not changed the final rule in this regard.

## **Request To Clarify Inspection Requirements in Paragraph (h)**

One commenter states that the reference in paragraph (i) of the NPRM to inspection requirements in paragraph (h) of the NPRM is incorrect because paragraph (h) provides for a repair, not an inspection instruction.

We disagree with the commenter. Paragraph (h) states, in part: "\* \* \*" repair the area by doing all applicable corrective and further investigative actions "\* \* \*." The further investigative actions are inspections that are done as part of the repair. We have not changed the final rule in this regard.

## **Request To Clarify "Relevant Service Information"**

One commenter requests that we clarify the "Relevant Service Information" section of the NPRM. The commenter states that the sentence that says, "for these airplanes, the preventive modification is removing the ten fasteners.\* \* \*" does not indicate clearly that the preventive modification is at BS 390. The commenter suggests that we add a reference to BS 390 to that sentence.

We agree with the commenter that clarifying the sentence would be helpful. However, since that section of the preamble does not reappear in the final rule, no change to the final rule is necessary.

## **Request To Fix Typographical Error**

One commenter requests that we correct the spelling of the word "either" in the heading in Table 1 of the NPRM.

We agree with the commenter. However, this typographical error appeared only in the version of the NPRM that appeared in the Regulatory Guidance Library. The Federal Register version, which is the official version of the NPRM, has the word "either" spelled correctly.

## **Explanation of Further Changes Made To Clarify Requirements for Airplanes Modified in Accordance With Boeing Service Bulletin 737-53-1117**

Several commenters, noted above, were concerned about issues related to airplanes that have been previously modified in accordance with Boeing Service Bulletin 737-53-1117. In light of these several concerns, we conducted a further review of Boeing Special Attention Service Bulletin 737-53-1230, dated June 13, 2002, which is the source of service information for this AD, and which also addresses, peripherally, airplanes modified in accordance with Boeing Service Bulletin 737-53-1117. The goal of our review was to determine if adequate instructions exist in Boeing Special Attention Service Bulletin 737-53-1230 for these airplanes, and, if we determined that the instructions were inadequate, to revise the final rule to include additional clarifying language for operators of these airplanes. We have concluded that additional clarifying language is necessary. The additional clarifying language does not increase the scope of work that was previously described in the NPRM, however it does allow relieving options for affected operators. The three clarifications included in the final rule are described below.

1. We have clarified the inspection options for the BS 390 cutout in paragraph (g) of the final rule, as noted above in "Request to Add Note to Provide Inspection Deviations for Existing Repairs."

2. We have clarified paragraph (h) of the final rule to include instructions for repairs at BS 390 "with doubler installed." Airplanes in this configuration are not addressed in Boeing Special Attention Service Bulletin 737-53-1230, dated June 13, 2002, Table C, Part III–Repair. Therefore, paragraph (h), though adequate in the NPRM, has been revised in the final rule to specifically require repair of these airplanes according to a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA; or according to data meeting the certification basis of the airplane approved by an Authorized Representative for the Boeing Delegation Option Authorization Organization who has been authorized by the Manager, Seattle ACO, to make those findings.

3. We have clarified paragraph (l) of the final rule (paragraph (j) of the NPRM) to specify that the inspection of the fastener hole countersink in accordance with Figure 2 of Boeing Special Attention Service Bulletin 737-53-1230, dated June 13, 2002, is not required for modified airplanes. This inspection is part of the preventive modification procedures in the service bulletin. This area is not accessible when the external doubler is installed in accordance with Boeing Service Bulletin 737-53-1117. It is not our intent to require operators to remove this doubler; therefore the countersink inspection is not required for these airplanes in the final rule.

**Explanation of Additional Changes Made to This AD**

We have simplified paragraph (h) and paragraph (k) of this AD (paragraph (i)(2) of the NPRM) by referring to the "Alternative Methods of Compliance (AMOCs)" paragraph of this AD for repair methods.

We have also revised the "Alternative Methods of Compliance (AMOCs)" paragraph in this AD to clarify the delegation authority for Authorized Representatives for the Boeing Commercial Airplanes Delegation Option Authorization.

**Conclusion**

We have carefully reviewed the available data, including the comments that have been received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

**Costs of Compliance**

This AD affects about 3,132 airplanes worldwide. The following table provides the estimated costs for U.S. operators to comply with this AD.

<b>ESTIMATED COSTS</b>						
<b>Action</b>	<b>Work hours</b>	<b>Average labor rate per hour</b>	<b>Parts</b>	<b>Cost per airplane</b>	<b>Number of U.S.-registered airplanes</b>	<b>Fleet cost</b>
Inspection	3	\$65	No parts required	\$195	1,004	\$195,780

**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); and
- (3) 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

## **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 Federal Aviation Administration (FAA) amends § 39.13 by adding the following new airworthiness directive (AD):

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at [www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2005-19-25 Boeing:** Amendment 39-14290. Docket No. FAA-2005-20627; Directorate Identifier 2004-NM-39-AD.

## Effective Date

- (a) This AD becomes effective November 1, 2005.

## Affected ADs

- (b) None.

## Applicability

(c) This AD applies to Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category; as identified in Boeing Special Attention Service Bulletin 737-53-1230, dated June 13, 2002.

## Unsafe Condition

(d) This AD was prompted by reports of cracks in the lower lobe fuselage skin of the affected airplanes. We are issuing this AD to detect and correct fatigue cracks of the countersunk rivet holes, which could result in cracks of the fuselage skin of the lower lobe, and consequent rapid depressurization of the cabin.

## Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

## Service Bulletin Reference

(f) The term "special attention service bulletin," as used in this AD, means the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-53-1230, dated June 13, 2002.

## Repetitive Inspections

(g) Before the airplane accumulates 20,000 total flight cycles, or within 4,500 flight cycles after the effective date of this AD, whichever occurs later: Do the inspection in paragraph (g)(1) of this

AD; or, for airplanes with an external repair doubler installed at body station (BS) 390, do the inspection in paragraph (g)(2) of this AD in lieu of the inspection in paragraph (g)(1) of this AD for BS 390 only; inspections at all other body stations must be done in accordance with paragraph (g)(1) of this AD. Repeat the applicable inspection thereafter at intervals not to exceed 4,500 flight cycles.

(1) Do an eddy current inspection for cracks of the surface area around the satellite holes of the radio altimeter cutouts between BS 390 and BS 450. Do the inspection with the fasteners installed in accordance with the special attention service bulletin.

(2) For airplanes that have an external repair doubler installed at BS 390 only, in accordance with Boeing Service Bulletin 737-53-1117, Revision 1, dated April 6, 1989, do an eddy current inspection of the external doubler for cracks around the satellite holes of the radio altimeter cutout; and do an eddy current inspection for cracks of the fuselage skin along the aft edge of the doubler from S-28L to S-28R. Do the inspections with the fasteners installed in accordance with the procedures in Figure 1 of the special attention service bulletin.

## Repair

(h) If any crack is found during any eddy current inspection required by this AD: Before further flight, repair the area by doing all applicable corrective and further investigative actions in accordance with the special attention service bulletin. Accomplishment of the repair terminates the repetitive inspection requirements of paragraph (g) of this AD for the repaired area. Where the special attention service bulletin specifies to contact Boeing for appropriate action; for instructions about how to repair certain conditions, including repairs at BS 390 "with doubler installed"; or where lack of specific repair instructions exist: Before further flight, repair using a method approved in accordance with paragraph (m) of this AD.

## Additional Inspection and Repair for Certain Airplanes

(i) For any airplane in Group 1, 2, 3, 4, or 5 of the special attention service bulletin: Before or at the same time as the actions in paragraph (h) of this AD, inspect in accordance with Table 1 of this AD if both conditions in paragraphs (i)(1) and (i)(2) of this AD exist.

(1) A skin crack at the cutout at BS 390 was found during any inspection, including the inspections required by paragraphs (g), (h), and (j) of this AD.

(2) An external repair doubler has not been previously installed in accordance with Boeing Service Bulletin 737-53-1117, Revision 1, dated April 6, 1989.

**TABLE 1.—SERVICE INFORMATION**

<b>Inspect in accordance with either—</b>	
<b>The Accomplishment Instructions of Boeing Service Bulletin 737-53-1117, Revision 1, dated April 6, 1989—</b>	<b>Figure 17 of the special attention service bulletin—</b>
A detailed inspection for cracks in the fuselage lower skin in the area of the electronics bay cooling duct cutout.	An eddy current inspection for cracks of the exhaust port duct cutout edge and the 6 fastener locations; An eddy current and open-hole probe inspection for cracks of the satellite holes; and A general visual inspection for corrosion of the area under the repair.



## Corrective Actions

(j) If any crack at the equipment cooling duct cutout is found that is less than 3 inches in length during the inspection required by paragraph (i) of this AD: Before further flight, stop-drill the crack or cracks and install an external repair doubler in accordance with the Accomplishment Instructions of Boeing Service Bulletin 737-53-1117, Revision 1, dated April 6, 1989; or repair in accordance with Part III of the special attention service bulletin. If the special attention service bulletin specifies to contact Boeing for appropriate Action: Before further flight, repair using a method approved in accordance with paragraph (m) of this AD. Accomplishment of the repair terminates the repetitive inspection requirements of paragraph (g) of this AD for the repaired area.

(k) If any corrosion is found, or if any crack is found that is 3 inches in length or greater during the inspection required by paragraph (i) of this AD: Before further flight, repair using a method approved in accordance with paragraph (m) of this AD.

**Note 1:** For the purposes of this AD, a general visual inspection is: "A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to ensure visual access to all surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or droplight and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked."

**Note 2:** For the purposes of this AD, a detailed inspection is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required."

## Optional Terminating Action

(l) Installing preventive modification doublers in accordance with the special attention service bulletin, including the additional eddy current inspection with the fasteners removed (with no crack finding), terminates the repetitive inspection requirements of paragraph (g) of this AD. Where Figure 2 of the special attention service bulletin specifies to "eddy current countersink inspect and open hole probe inspect the 16 satellite holes," and the airplane has an external repair doubler installed in accordance with the Accomplishment Instructions of Boeing Service Bulletin 737-53-1117, Revision 1, dated April 6, 1989; that inspection is not required by this AD. If any crack is found during the eddy current inspection specified by this paragraph: Before further flight, discontinue the preventive modification and do the applicable actions in paragraph (h) of this AD.

## Alternative Methods of Compliance

(m)(1) In accordance with 14 CFR 39.19, the Manager, Seattle Aircraft Certification Office (ACO), is authorized to approve alternative methods of compliance (AMOCs) for this AD.

(2) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD, if it is approved by an Authorized Representative for the Boeing Delegation Option Authorization Organization who has been authorized by the Manager, Seattle ACO, to make those findings.

(3) Before using any AMOC approved in accordance with § 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

### **Material Incorporated by Reference**

(n) You must use Boeing Service Bulletin 737-53-1117, Revision 1, dated April 6, 1989; and Boeing Special Attention Service Bulletin 737-53-1230, dated June 13, 2002; as applicable, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference of these documents in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for a copy of this service information. You may review copies at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov>; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the NARA, 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 September 15, 2005.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 05-18911 Filed 9-26-05; 8:45 am]

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