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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NM-329-AD; Amendment 39-13128; AD 2003-08-15]

RIN 2120-AA64

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

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to certain Boeing Model 737-200, -200C, -300, -400, and -500 series airplanes. This action requires a one-time mid-frequency eddy current (MFEC), a low-frequency eddy current (LFEC), and a detailed inspection for damage or cracking of stringer S-4L and S-4R lap joints and stringer clips between body station (BS) 540 and BS 727, and follow-on inspections and repair if necessary. This action is necessary to find and fix cracking of the fuselage lap joints, which could result in sudden decompression of the airplane.

DATES: Effective May 12, 2003.

The incorporation by reference of Boeing Alert Service Bulletin 737-53A1255, dated October 17, 2002, as listed in the regulations, is approved by the Director of the Federal Register as of May 12, 2003.

The incorporation by reference of Boeing Service Bulletin 737-53A1177, Revision 6, dated May 31, 2001, as listed in the regulations, was approved previously by the Director of the Federal Register as of May 17, 2002 (67 FR 17917, April 12, 2002).

Comments for inclusion in the Rules Docket must be received on or before June 24, 2003.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2002-NM-329-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments may be inspected at this location between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays. Comments may be submitted via fax to (425) 227-1232. Comments may also be sent via the Internet using the following address: 9-anm-iarcomment@faa.gov. Comments sent via fax or the Internet must contain "Docket No. 2002-NM-329-AD" in the subject line and need not be submitted in triplicate. Comments sent via the Internet as attached electronic files must be formatted in Microsoft Word 97 for Windows or ASCII text.

The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Duong Tran, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6452; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Related AD

On April 2, 2002, the FAA issued AD 2002-07-08, amendment 39-12702 (67 FR 17917, April 12, 2002), applicable to certain Boeing Model 737 series airplanes. That AD specifies Boeing Service Bulletin (SB) 737-53A1177, Revision 6, dated May 31, 2001, as an appropriate source of service information for that AD. That AD requires repetitive inspections to find cracking of the lower skin at the lower row of fasteners in the lap joints of the fuselage, and repair of any cracking found. That AD also requires modification of the fuselage lap joints at certain locations, which constitutes terminating action for certain repetitive inspections of the modified areas. Additionally, that AD requires repetitive inspections and requires replacement of a certain preventive modification with an improved modification. That AD was prompted by our determination that, in light of crack findings, certain modifications of the fuselage lap joints do not provide an adequate level of safety. The actions specified by that AD are intended to find and fix cracking of the fuselage lap joints, which could result in sudden decompression of the airplane.

Since the Issuance of That AD

We have received a report indicating that, during a walk-around inspection on a Model 737-200 series airplane with 60,333 total flight cycles, a 23-inch-long crack was found in the lower row of the stringer S-4L lap joint between body station (BS) 616 and BS 639. The crack was noticed above the over-wing exit because the lower skin was pushed outward approximately 1 inch with the crack ends turning downward at the tear straps. The flight crew did not report any pressurization problems, and the passengers and cabin crew did not report any abnormal noise in that area. Further external and internal non-destructive testing methods for cracking of the lap joint revealed additional cracking. The possible extent of cracking both forward and aft of the 23-inch-long cracked section is a concern. Cracks were found in between the tear straps and in the skin locations common to the tear straps. The intact tear straps were able to turn the cracks as they were designed to do; however, due to the condition of the skin at the tear straps forward and aft of the 23-inch crack area, it is likely that similar crack link-up just forward in an area that had a higher percentage of cracked fastener holes could have resulted in an uncontained decompression. Of particular concern is the total number and length of cracks found at that particular lap joint. The damage found apparently exceeds all prior in-service crack findings and also exceeds the manufacturer's crack growth predictions based on test and analysis for an airplane with 60,000 total flight cycles.

Additionally, we received a report of significant cracking on stringer S-4R of the lap joint between BS 600 and BS 727 on a Model 737-300 series airplane having 52,400 total flight cycles. Although the individual cracks had not linked up, it was clear that, within a limited number of flights, the cracking could have linked up with a length of over 10 inches. Those cracks were detected by performing a low-frequency eddy current (LFEC) and a medium-frequency eddy current (MFEC) inspection. Such cracking, if not corrected, could result in sudden decompression of the airplane.

Explanation of Relevant Service Information

We have reviewed and approved Boeing Alert Service Bulletin (ASB) 737-53A1255, dated October 17, 2002. The ASB describes procedures for performing an internal detailed inspection, and MFEC and LFEC inspections for damage and cracking of the stringer S-4L and S-4R lap joints and stringer clips between BS 540 and BS 727. If no damage or cracking is found, the ASB advises operators to continue the lap joint repetitive inspections as specified in Boeing SB 737-53A1177, Revision 6, dated May 31, 2001 (referenced in AD 2002-07-08 as an appropriate source of service information for that AD). Boeing ASB 737-53A1255 also describes procedures for performing an external sliding probe inspection or internal MFEC and LFEC inspections for cracking that is defined as "significant" in the ASB. Boeing ASB 737-53A1255 also describes an optional open hole non-destructive testing inspection that may be used in addition to the MFEC, LFEC, and detailed inspections to confirm crack indications. Additionally, Boeing ASB 737-53A1255 specifies that the repair of any cracked lap joints be done per Boeing SB 737-53A1177, Revision 6, dated May 31, 2001. Also, Boeing ASB 737-53A1255 describes procedures for replacing any broken or damaged stringer clips. Boeing ASB 737-53A1255 also requests that operators report certain information resulting from the inspection findings, such as the type of inspection method used and the inspection results, a description of any damage or cracking found, the airplane serial number, and the number of current flight cycles and flight hours on the airplane.

Explanation of the Requirements of the Rule

Since an unsafe condition has been identified that is likely to exist or develop on other airplanes of the same type design, this AD is being issued to find and fix cracking of the fuselage lap joints, which could result in sudden decompression of the airplane. This AD requires accomplishment of the actions specified in the service bulletins described previously, except as discussed below.

Differences Between ASB and This AD

If cracking or damage is found per Boeing ASB 737-53A1255, dated October 17, 2002, that ASB references Boeing SB 737-53A1177, Revision 6, dated May 31, 2001, for procedures to repair any cracking or damage that may be found. Operators should note that this AD also will require repair of cracking or damage that is within the limits specified in Boeing SB 737-53A1177, Revision 6, dated May 31, 2001, per that service bulletin. However, this AD requires that, for any damage or cracking that is found to be outside the limits specified in Boeing SB 737-53A1177, Revision 6, dated May 31, 2001, repair must be accomplished per a method approved by the FAA, or per data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative who has been authorized by the FAA to make such findings.

In addition, Boeing ASB 737-53A1255, dated October 17, 2002, specifies that, if no cracking or damage is found, operators should repeat the lap joint inspections specified in Boeing ASB 737-53A1177. This AD, however, requires only the one-time inspections and, if no damage or cracking is found, operators need only to accomplish the reporting requirements of this AD. (Detailed inspections required by this AD do not replace, but are in addition to the repetitive inspections required by AD 2002-07-08, amendment 39-12702.)

Operators also should note that Boeing ASB 737-53A1255 does not recommend the internal mid-frequency MFEC, LFEC, or detailed inspections described in the ASB for airplanes with less than 45,000 total flight cycles. However, this AD requires those inspections (and repair if necessary) on airplanes prior to the accumulation of 45,000 total flight cycles or within 90 days after the effective date of this AD, whichever occurs later. We consider that the identified unsafe condition must be addressed for all airplanes when 45,000 total flight cycles have been accumulated. Requiring a specific compliance time for those airplanes addresses that issue.

Interim Action

This is considered to be interim action. The inspection reports that are required by this AD will enable the manufacturer to obtain better insight into the nature, cause, and extent of the cracking, and eventually to develop final action to address the unsafe condition. Once final action has been identified, we may consider further rulemaking.

Determination of Rule's Effective Date

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified under the caption ADDRESSES. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Submit comments using the following format:

- Organize comments issue-by-issue. For example, discuss a request to change the compliance time and a request to change the service bulletin reference as two separate issues.
- For each issue, state what specific change to the AD is being requested.
- Include justification (e.g., reasons or data) for each request.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2002-NM-329-AD." The postcard will be date stamped and returned to the commenter.

Regulatory Impact

The regulations adopted herein 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. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT

Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

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

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by adding the following new airworthiness directive:

SUPERSEDED

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"

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).

2003-08-15 Boeing: Amendment 39-13128. Docket 2002-NM-329-AD.

Applicability: Model 737-200, -200C, -300, -400, and -500 series airplanes, having line numbers 292 through 2552 inclusive, and on which the modification specified in Boeing Service Bulletin (SB) 737-53A1177, Revision 6, dated May 31, 2001, has not been accomplished; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (h) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To find and fix cracking of the fuselage lap joints, which could result in sudden decompression of the airplane, accomplish the following:

Note 2: Detailed inspections required by this AD do not replace, but are in addition to the repetitive inspections required by AD 2002-07-08, amendment 39-12702.

One-Time Inspections

(a) With the exception of any area of any lap joints that are specified in this paragraph that have previously been repaired or modified per Boeing SB 737-53A1177, Revision 4, dated September 2, 1999; Revision 5, dated February 15, 2001; and Revision 6, dated May 31, 2001: Perform an internal mid-frequency eddy current (MFEC), a low-frequency eddy current (LFEC), and a detailed inspection for damage or cracking on stringers S-4L and S-4R lap joints between body station (BS) 540 and BS 727; and perform a detailed inspection for damage of the stringer clips at all frame locations at stringers S-4L and S-4R between BS 540 and BS 727 at the applicable time specified in paragraph (a)(1), (a)(2), or (a)(3) of this AD; per the Accomplishment Instructions of Boeing Alert Service Bulletin (ASB) 737-53A1255, dated October 17, 2002. If no damage or cracking is found, no further action is required by this paragraph.

Note 3: For the purposes of this AD, a detailed inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at

intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required."

(1) For airplanes that have accumulated less than 45,000 total flight cycles as of the effective date of this AD: Perform the inspections prior to the accumulation of 45,000 total flight cycles or within 90 days after the effective date of this AD, whichever occurs later.

(2) For airplanes that have accumulated 45,000 total flight cycles but not more than 49,999 total flight cycles as of the effective date of this AD: Perform the inspections within 90 days after the effective date of this AD.

(3) For airplanes that have accumulated 50,000 total flight cycles or more as of the effective date of this AD: Perform the inspections within 45 days after the effective date of this AD.

(b) The optional accomplishment of an open-hole non-destructive testing (NDT) inspection per Boeing ASB 737-53A1255, dated October 17, 2002, is acceptable as a method of verification of any cracking of the fastener holes found during the inspections required by paragraph (a) of this AD.

(c) If any damage or cracking is found during the inspections required by paragraph (a), (b), (d), or (e) of this AD that is not "significant," as defined in Boeing ASB 737-53A1255, dated October 17, 2002, repair per paragraph (c)(1) or (c)(2) of this AD, as applicable.

(1) For cracking that is within the limits specified by Boeing SB 737-53A1177, Revision 6, dated May 31, 2001: Before further flight, repair per the Accomplishment Instructions of Boeing SB 737-53A1177, Revision 6, dated May 31, 2001; and before further flight, replace any damaged stringer clips with a new part, per Boeing ASB 737-53A1255, dated October 17, 2002.

(2) For any cracking that exceeds the limits specified in Boeing SB 737-53A1177, Revision 6, dated May 31, 2001: Before further flight, repair per a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA; or per data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative (DER) who has been authorized by the Manager, Seattle ACO, to make such findings. For a repair method to be approved, the approval must specifically reference this AD.

(d) If any damage or cracking is found during the inspections required by paragraphs (a), (b), (d), or (e) of this AD that is "significant," as defined in Boeing ASB 737-53A1255, dated October 17, 2002: Before further flight, accomplish the actions specified by paragraph (d)(1) or (d)(2) of this AD, per the Accomplishment Instructions of the ASB.

(1) With the exception of BS 540 through 727 inclusive: Perform an external sliding probe inspection for damage or cracking, per Figure 2 of Boeing ASB 737-53A1255, dated October 17, 2002, for each model (Model 737-200, -200C, -300, -400, and -500 series airplanes) at the applicable locations specified in the Compliance Section of Boeing SB 737-53A1177, Revision 6, dated May 31, 2001.

(2) With the exception of BS 540 through 727 inclusive: Perform internal MFEC, LFEC, and detailed inspections for damage or cracking, per Figure 1 of Boeing ASB 737-53A1255, dated October 17, 2002, for each model (Model 737-200, -200C, -300, -400, and -500 series airplanes) at the applicable locations specified in the Compliance Section of Boeing SB 737-53A1177, Revision 6, dated May 31, 2001.

(e) If any "significant" cracking, as defined in Boeing ASB 737-53A1255, dated October 17, 2002, is found in any lap joint during the external inspection required by paragraph (d) of this AD: Before further flight, accomplish the actions required by paragraphs (e)(1) and (e)(2) of this AD.

(1) Perform internal MFEC, LFEC, and detailed inspections for cracking of the entire affected section of the lap joint, specified in the Compliance Section and Inspection Zone Figures of Boeing SB 737-53A1177, Revision 6, dated May 31, 2001; per Boeing ASB 737-53A1255, dated October 17, 2002.

(2) Perform a detailed inspection for damage of the stringer clips and replace any damaged stringer clip with a new part, per Boeing ASB 737-53A1255, dated October 17, 2002.

(f) If any cracking, "significant" (as defined in Boeing ASB 737-53A1255, dated October 17, 2002) or otherwise, is found during the inspections required by paragraphs (a), (b), (d), or (e) of this AD: Before further flight, accomplish the actions specified by paragraph (f)(1) or (f)(2) of this AD, as applicable.

(1) For cracking that is within the limits specified in Boeing SB 737-53A1177, Revision 6, dated May 31, 2001: Repair per the Accomplishment Instructions of that ASB; and replace any damaged stringer clips with a new part per Boeing ASB 737-53A1255, dated October 17, 2002.

(2) For any cracking that exceeds the limits specified in Boeing SB 737-53A1177, Revision 6, dated May 31, 2001, repair per a method approved by the Manager, Seattle ACO; or per data meeting the type certification basis of the airplane approved by a Boeing Company DER who has been authorized by the Manager, Seattle ACO, to make such findings. For a repair method to be approved, the approval must specifically reference this AD.

Reporting Requirements

(g) Submit a report of inspection findings (both positive and negative) to the Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207, as specified in paragraph B.10 of the Accomplishment Instructions of Boeing ASB 737-53A1255, dated October 17, 2002, at the applicable time specified by paragraph (g)(1) or (g)(2) of this AD. Information collection requirements contained in this AD have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(1) For airplanes on which the inspection required by paragraph (a) of this AD is accomplished after the effective date of this AD: Submit the report within 10 days after performing the inspection required by paragraph (a) of this AD.

(2) For airplanes on which the inspection required by paragraph (a) of this AD has been accomplished prior to the effective date of this AD: Submit the report within 10 days after the effective date of this AD.

Alternative Methods of Compliance

(h) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, ACO, FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

Note 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

Special Flight Permits

(i) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(j) Unless otherwise specified by this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 737-53A1255, dated October 17, 2002; and Boeing Service Bulletin 737-53A1177, Revision 6, dated May 31, 2001; as applicable.

(1) This incorporation by reference of Boeing Alert Service Bulletin 737-53A1255, dated October 17, 2002, is approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The incorporation by reference of Boeing Service Bulletin 737-53A1177, Revision 6, dated May 31, 2001, was approved previously by the Director of the Federal Register as of May 17, 2002 (67 FR 17917, April 12, 2002).

(3) Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(k) This amendment becomes effective on May 12, 2003.

Issued in Renton, Washington, on April 18, 2003.

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-10115 Filed 4-24-03; 8:45 am]

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