



**DATE: April 5, 2011**  
**AD #: 2011-08-51**

Emergency airworthiness directive (AD) 2011-08-51 is sent to owners and operators of The Boeing Company Model 737-300, -400, and -500 series airplanes.

### **Background**

This emergency AD was prompted by a report indicating that a Model 737-300 series airplane experienced a rapid decompression when the lap joint at stringer S-4L between body station (BS) 664 and BS 727 cracked and opened up. Investigation showed that the cracking was located in the lower skin at the lower row of fasteners. The airplane had accumulated 39,781 total flight cycles and 48,740 total flight hours. This condition, if not corrected, could result in an uncontrolled decompression of the airplane. Because the lap joint and tear strap spacing configuration is the same on Model 737-400 and -500 series airplanes, these airplanes may be subject to the identified unsafe condition.

### **Relevant Service Information**

We reviewed Boeing Alert Service Bulletin 737-53A1319, dated April 4, 2011. The service bulletin describes procedures for external eddy current inspections of the lap joints at stringers S-4R and S-4L, along the entire length from body station (BS) 360 to BS 908. If a crack indication is found, the service bulletin specifies either confirming the crack by doing internal eddy current inspections, or repairing the crack. As an alternative to the external eddy current inspections, the service bulletin provides procedures for internal eddy current and detailed inspections for cracks in the lower skin at the lower row of fasteners at stringers S-4L and S-4R. The service bulletin specifies contacting Boeing for crack repair instructions.

### **FAA's Determination**

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs.

### **AD Requirements**

This AD requires accomplishing the actions specified in the service information described previously, except as discussed under "Differences Between the AD and the Service Information."

### **Differences Between This AD and the Service Information**

The service bulletin specifies to contact the manufacturer for instructions on how to repair certain conditions, but this AD requires repairing those conditions in one of the following ways:

- In accordance with a method that we approve; or

- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

### **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.

### **Presentation of the Actual AD**

We are issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

**2011-08-51 The Boeing Company:** Directorate Identifier 2011-NM-069-AD.

### **Effective Date**

(a) This Emergency AD is effective upon receipt.

### **Affected ADs**

(b) None.

### **Applicability**

(c) This AD applies to The Boeing Company Model 737-300, -400, and -500 series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 737-53A1319, dated April 4, 2011.

### **Subject**

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

### **Unsafe Condition**

(e) This AD was prompted by a report indicating that a Model 737-300 series airplane experienced a rapid decompression when the lap joint at stringer S-4L between body station (BS) 664 and BS 727 cracked and opened up due to cracking in the lower skin at the lower row of fasteners. We are issuing this AD to detect and correct such cracking, which could result in an uncontrolled decompression of the airplane.

### **Compliance**

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

## Inspections

(g) At the applicable time specified in paragraph (g)(1), (g)(2), or (g)(3) of this AD: Except as provided by paragraphs (h) and (i) of this AD, do external eddy current inspections of the lap joint at stringers S-4R and S-4L, along the entire length from body station (BS) 360 to BS 908, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1319, dated April 4, 2011. If any crack indication is detected, before further flight, either confirm the crack indication by doing eddy current inspections from the interior of the fuselage in the lower skin at the lower row of fasteners at stringer S-4L and S-4R, in accordance with Boeing Alert Service Bulletin 737-53A1319, dated April 4, 2011, or repair in accordance with paragraph (j) of this AD.

(1) For airplanes that have accumulated fewer than 30,000 total flight cycles as of receipt of this AD: Inspect before the accumulation of 30,000 total flight cycles, or within 20 days after receipt of this AD, whichever occurs later.

(2) For airplanes that have accumulated 30,000 or more total flight cycles and fewer than 35,000 total flight cycles as of receipt of this AD: Inspect within 20 days after receipt of this AD.

(3) For airplanes that have accumulated 35,000 total flight cycles or more as of receipt of this AD: Inspect within 5 days after receipt of this AD.

(h) For areas repaired with external doublers, paragraphs (h)(1) and (h)(2) of this AD apply.

(1) If the repair meets the criteria specified in paragraphs 3.B.1.c.(1) and 3.B.1.c.(2) of Boeing Alert Service Bulletin 737-53A1319, dated April 4, 2011, no inspection of the lower skin at the lap joint lower fastener row is required under the doubler.

(2) If the repair does not meet the criteria specified in paragraphs 3.B.1.c.(1) and 3.B.1.c.(2) of Boeing Alert Service Bulletin 737-53A1319, dated April 4, 2011, inspect the lower skin lap joint lower row internally in the area covered by the doubler, in accordance with Boeing Alert Service Bulletin 737-53A1319, dated April 4, 2011.

(i) The inspections required by paragraph (g) of this AD may alternatively be done by internal eddy current and detailed inspections for cracks in the lower skin at the lower row of fasteners at stringer S-4L and S-4R, along the entire length from BS 360 to BS 908, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1319, dated April 4, 2011.

(j) If any crack is found during any inspection required by this AD: Before further flight, repair the crack using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(k) Repeat the inspections specified in either paragraph (g) or (i) of this AD thereafter at intervals not to exceed 500 flight cycles. Either inspection method may be used at any repetitive inspection cycle.

## Alternative Methods of Compliance (AMOCs)

(l)(1) The Manager, Seattle Aircraft Certification Office (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 e-mailed to: [9-ANM-Seattle-ACO-AMOC-Requests@faa.gov](mailto: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 Organization Designation Authorization (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, and the approval must specifically refer to this AD.

### **Related Information**

(m)(1) For further information about this AD, contact Wayne Lockett, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: 425-917-6447; fax: 425-917-6590; e-mail: [wayne.lockett@faa.gov](mailto:wayne.lockett@faa.gov).

(2) For copies of the service information referenced 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; e-mail [me.boecom@boeing.com](mailto: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.

Issued in Renton, Washington, on April 5, 2011.

Original signed by:

Ali Bahrami,  
Manager, Transport Airplane Directorate,  
Aircraft Certification Service.