

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2004-19533; Directorate Identifier 2004-NM-31-AD; Amendment 39-14164; AD 2005-13-27]

RIN 2120-AA64

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

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

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Boeing Model 737-300, -400, and -500 series airplanes. This AD requires repetitive inspections for cracking of the crown area of the fuselage skin, and corrective actions if necessary. This AD is prompted by a Model 737 fuselage structure test and fatigue analysis that indicate fuselage skin cracking could occur between 21,000 and 42,000 total flight cycles. We are issuing this AD to detect and correct fatigue cracking of the fuselage skin, which could cause the fuselage skin to fracture and fail, and could result in rapid decompression of the airplane.

DATES: This AD becomes effective August 1, 2005.

The incorporation by reference of a certain publication listed in the AD is approved by the Director of the Federal Register as of August 1, 2005.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207.

Docket: The AD docket contains the proposed AD, comments, and any final disposition. You can 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 U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Washington, DC. This docket number is FAA-2004-19533; the directorate identifier for this docket is 2004-NM-31-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: The FAA proposed to amend 14 CFR part 39 with an AD for certain Boeing Model 737-300, -400, and -500 series airplanes. That action, published in the Federal Register on November 5, 2004 (69 FR 64534), proposed to require repetitive inspections for cracking of the crown area of the fuselage skin, and corrective actions if necessary.

Comments

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

Request to Incorporate Revised Repair and Preventive Modification Procedures

One commenter, the airplane manufacturer, requests that the proposed AD be revised to include the instructions provided to airplane operators in Boeing Communication System Activity 1-VN5QD. This Boeing Communication revises the repair and preventive modification procedures in Boeing Special Attention Service Bulletin 737-53-1234, dated June 13, 2002 (which is cited as the appropriate source of service information for the proposed AD). The revised procedures reduce the number of fasteners common to the first fastener row at the tear straps. The commenter states that the fastener size and pattern in the tear straps that are part of the procedures in the original issue of the service bulletin will not be consistent with future structural repair manual (SRM) repairs. These SRM repairs are currently being developed for Model 737-300, -400, and -500 series airplanes, with 20-inch tear strap spacing. The commenter explains that the fastener pattern and size difference in the SRM is being incorporated in an effort to maximize the "fail safety" of the repair by increasing the net area across the tear strap at the critical rows of the repair. The commenter points out that the procedures in the original issue of the service bulletin are adequate and do not contain an unsafe repair; however, there is a potential inconsistency between the service bulletin and the SRM. The commenter feels that this inconsistency would not represent best design practices given the potential number of repairs that could be required if a significant amount of chem-mill cracking occurs. The commenter further states that it is planning to revise Boeing Special Attention Service Bulletin 737-53-1234 to incorporate the instructions in Boeing Communication System Activity 1-VN5QD.

We partially agree with the commenter. We agree with the request to incorporate best design practices for repairs to the fuselage, because mandating an action with known obsolete information ultimately requires additional work for the industry. However, we disagree with including a Boeing Communication as part of the AD, because multiple sources of AD-mandated instructions can increase the potential for misinterpretation and non-compliance. In addition, since the time the comments were made, the commenter (the airplane manufacturer) has revised the repair information in the service bulletin to include the information in Boeing Communication System Activity 1-VN5QD. We have included this revision of the service bulletin (Boeing Special Attention Service Bulletin 737-53-1234, Revision 1, dated March 31, 2005) in the final rule as the appropriate source of service information for accomplishing the AD actions. Revision 1 adds no further work to the original issue of the service bulletin, but incorporates the information in Boeing Communication System Activity 1-VN5QD. The final rule mandates the revised service bulletin. We have also added a new paragraph (l) to the final rule, which allows credit for actions done in accordance with the original issue of the service bulletin. We have re-identified subsequent paragraphs accordingly.

Request to Fix Typographical Error

The same commenter requests that we fix the typographical error "appropriateaction" in paragraph (j) of the proposed AD.

We have changed paragraph (j) of the final rule to read "appropriate action" instead of "appropriateaction."

Explanation of Changes Made to This AD

We have revised paragraph (j) of the final rule to allow any crack in the subject area to be repaired according to data that conform to the airplane's type certificate and that are approved by an Authorized Representative for the Boeing Delegation Option Authorization Organization whom we have authorized to make such findings.

We have revised paragraphs (i)(1), (i)(2)(i), and (i)(2)(ii) of the final rule to remove references to the notes in Part 2 and Part 3 of the Work Instructions in the original issue of the service bulletin. The notes are no longer in those parts of Revision 1 of the service bulletin. The information in the referenced notes is still required by this AD, but in Revision 1 of the service bulletin this information has been incorporated into the procedures of Part 2 and Part 3.

Conclusion

We have carefully reviewed the available data, including the comments that have been submitted, 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

There are about 579 airplanes of the affected design in the worldwide fleet. The following table provides the estimated costs for U.S. operators to comply with this proposed AD.

ESTIMATED COSTS					
Action	Work hours	Average labor rate per hour	Cost per airplane, per inspection cycle	Number of U.S.-registered airplanes	Fleet cost, per inspection cycle
Inspections	94	\$65	\$6,110	175	\$1,069,250

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. 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 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"

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).

2005-13-27 Boeing: Amendment 39-14164. Docket No. FAA-2004-19533; Directorate Identifier 2004-NM-31-AD.

Effective Date

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

Affected ADs

- (b) None.

Applicability

- (c) This AD applies to Boeing Model 737-300, -400, and -500 series airplanes, certificated in any category; as identified in Boeing Special Attention Service Bulletin 737-53-1234, Revision 1, dated March 31, 2005.

Unsafe Condition

- (d) This AD was prompted by a Model 737 fuselage structure test and fatigue analysis that indicate fuselage skin cracking could occur between 21,000 and 42,000 total flight cycles. We are issuing this AD to detect and correct fatigue cracking of the fuselage skin, which could cause the fuselage skin to fracture and fail, and could result in rapid decompression of the airplane.

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 References

- (f) The term "service bulletin," as used in this AD, means Boeing Special Attention Service Bulletin 737-53-1234, Revision 1, dated March 31, 2005.

Initial and Repetitive Inspections

- (g) At the later of the times specified in paragraphs (g)(1) and (g)(2) of this AD, perform detailed and eddy current inspections for cracking of the crown area of the fuselage skin in accordance with Part 1, including the "Note," of the Work Instructions of the service bulletin, except as provided by paragraph (j) of this AD.

(1) Before the accumulation of the applicable total flight cycles specified in the "Threshold" column of Table 1 of Figure 1 of the service bulletin.

(2) Within 4,500 flight cycles after the effective date of this AD.

(h) Repeat either the detailed or eddy current inspections specified in paragraph (g) of this AD at the applicable intervals specified in paragraph (h)(1) or (h)(2) of this AD until paragraph (i)(1) or (i)(2) of this AD has been done, as applicable.

(1) Repeat the detailed inspections thereafter at intervals not to exceed 1,200 flight cycles.

(2) Repeat the eddy current inspections thereafter at intervals not to exceed 3,000 flight cycles.

Permanent or Time-Limited Repair

(i) If any cracking is found during any inspection required by paragraph (g) or (h) of this AD, do the actions specified in paragraph (i)(1) or (i)(2) of this AD in accordance with the service bulletin, except as provided by paragraphs (j) and (k) of this AD.

(1) Before further flight, do a permanent repair (including related investigative actions and applicable corrective actions) in accordance with Part 2 of the Work Instructions of the service bulletin. Doing a permanent repair ends the repetitive inspections required by paragraph (h) of this AD for the repaired area only.

(2) Do the actions specified in paragraphs (i)(2)(i) and (i)(2)(ii) of this AD at the time specified in the applicable paragraph. Doing a time-limited repair ends the repetitive inspections required by paragraph (h) of this AD for the repaired area only.

(i) Before further flight, do a time-limited repair (including related investigative actions and applicable corrective actions) in accordance with Part 3 of the Work Instructions of the service bulletin.

(ii) At the times specified in Figure 8 of the service bulletin, do the related investigative and corrective actions in accordance with Part 3 of the Work Instructions of the service bulletin.

Contact the FAA

(j) Where the service bulletin specifies to contact Boeing for appropriate action: Before further flight, repair 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. For a repair method to be approved, the approval must specifically reference this AD.

No Reporting

(k) Although the service bulletin specifies reporting certain information to Boeing, this AD does not require that action.

Actions Accomplished According to Previous Issue of Service Bulletin

(l) Actions done before the effective date of this AD in accordance with Boeing Special Attention Service Bulletin 737-53-1234, dated June 13, 2002, are acceptable for compliance with the corresponding actions required by this AD.

Alternative Methods of Compliance (AMOCs)

(m) 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.

Material Incorporated by Reference

(n) You must use Boeing Special Attention Service Bulletin 737-53-1234, Revision 1, dated March 31, 2005, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approves the incorporation by reference of this document in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To get copies of the service information, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207. To view the AD docket, go to the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Nassif Building, Washington, DC. To review copies of the service information, go to 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.

Issued in Renton, Washington, on June 15, 2005.

Kevin M. Mullin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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