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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000-NM-327-AD; Amendment 39-12331; AD 2001-14-20]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 737-100 and -200 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 737-100 and -200 series airplanes, that requires repetitive inspections to find fatigue cracking in the main deck floor beams located at certain body stations, and repair, if necessary. This AD also provides for optional terminating action for the repetitive inspections. This AD is prompted by reports of incidents involving fatigue cracking and corrosion in transport category airplanes that are approaching or have exceeded their design life goal. This AD relates to the recommendations of the Airworthiness Assurance Task Force assigned to review Model 737 series airplanes, which indicate that, to assure long term continued operational safety, various structural inspections should be accomplished. The actions specified by this AD are intended to prevent failure of the main deck floor beams at certain body stations due to fatigue cracking, which could result in rapid decompression and consequent reduced controllability of the airplane.

DATES: Effective August 28, 2001.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of August 28, 2001.

ADDRESSES: 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 Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 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: Scott Fung, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-1221; fax (425) 227-1181.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to all Boeing Model 737-100 and -200 series airplanes was published in the Federal Register on February 15, 2001 (66 FR 10390). That action proposed to require repetitive inspections to find fatigue cracking in the main deck floor beams located at certain body stations, and repair, if necessary. That action also proposed to provide for optional terminating action for the repetitive inspections.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

Extend Compliance Time

One commenter asks that the compliance time for the detailed visual inspection specified in paragraph (a) of the proposal be extended. The commenter states that the service bulletin specified in the proposed rule is listed in Boeing Document D6-38505, which is titled "The Aging Airplane Service Bulletin Structural Modification and Inspection Program," hereinafter referred to as the "Boeing Document." The commenter notes that previous ADs issued against bulletins included in this document contain provisions to minimize the impact of the ADs. To be consistent with previous ADs, the commenter suggests that a 15-month phase-in period be implemented before the issuance of this proposed rule.

The FAA concurs. This final rule relates to the recommendations of the Airworthiness Assurance Task Force assigned to review Model 737 series airplanes, which indicate that, to assure long term continued operational safety, various structural inspections should be accomplished per the Boeing Document. To be consistent with the other inspections required by the Aging Airplane Program, we have extended the compliance time in paragraph (a) of this AD to within 6,000 flight cycles or 15 months after the effective date of this AD, whichever occurs later.

The same commenter asks that the initial inspection specified in paragraph (a) of the proposed rule be done within 10,000 flight cycles after the effective date of the AD, instead of within 6,000 flight cycles. The commenter states that, due to the fact that the proposed rule requires a repetitive inspection interval that must be accomplished at a 'C' check interval, and the inspection area is not readily available, most operators will do the terminating action instead of the repetitive inspections. The commenter suggests that an initial 10,000-flight-cycle threshold be added to the rule that would allow operators to modify the floor structure without the 'C' check inspections. The commenter adds that it is doing the proposed inspections at a 4-year interval, and this interval is adequate to find and address cracks before they reach critical length. Additionally, at no time has the commenter found a crack that caused any risk of failure of the main deck floor beam. The commenter notes that the evident level of urgency of the proposed rule is unwarranted and adds that the referenced service bulletin has been a topic of the 737 Structures Task Group since 1993 with no significant findings presented to the industry to support an urgent, accelerated inspection program.

The FAA does not concur. Insufficient data were submitted to support the commenter's request. We are unable to validate that the level of urgency for the unsafe condition as specified in the service bulletin is unwarranted, because the data submitted does not include all the airplanes affected by this final rule. Additionally, the necessity for the inspection was established by a review conducted by the 737 Structures Working Group. As the commenter shows no correlation between a 4-year interval or 10,000 flight cycles, we have determined that no change to the final rule is necessary in this regard.

A second commenter, the manufacturer, asks that the repetitive inspection interval specified in paragraph (a)(2)(i) of the proposal be changed from every 3,000 flight cycles to every 6,000 flight cycles. The commenter states that the repetitive inspection interval specified in the referenced service bulletin was changed following an investigation by the manufacturer that showed that inspecting every 6,000 flight cycles adequately addresses the unsafe condition.

The FAA concurs. The commenter provided documentation from the 737 Structures Working Group that supports an extension of the repetitive inspection interval. Paragraph (a)(2)(i) of the final rule has been changed accordingly.

Clarify Terminating Action

One commenter asks for clarification that repairs done per the referenced service bulletin terminate the repetitive inspections. The FAA concurs as this clarification is consistent with the referenced service bulletin. Paragraph (c) of the final rule has been revised accordingly.

Clarify Applicability

One commenter, the manufacturer, asks that the Applicability section of the proposed rule be changed to, "All Model 737-100 and 200 series passenger airplanes."

The FAA partially concurs. Model 737-200C series airplanes have a different structure in the areas specified in the proposed rule, and are not subject to the inspection requirements; however, 737-200C airplanes are not listed in the applicability of the proposed rule. The requested change is consistent with the effectivity specified in the referenced service bulletin; however, identifying the airplanes as "passenger" is not sufficient. Some passenger airplanes have been converted to freighters per a supplemental type certificate, and are still subject to the unsafe condition. The Summary section of the final rule has been changed to "certain" Model 737-100 and -200 series airplanes, and the Applicability section has been changed to add, "as listed in the referenced service bulletin," for clarification.

Revise Preamble Language

One commenter asks that the Summary and Discussion sections of the proposed rule be changed to include information addressing the recommendations of the Airworthiness Assurance Task Force as published in the Boeing Document. The commenter states that, in AD 2000-07-12, amendment 39-11666 (65 FR 19310, May 16, 2000), the Discussion section gave significant detail explaining the purpose of the Aging Airplane Programs and why an AD was written against the service bulletin. The commenter adds that both sections should refer to the Boeing Document to reinforce the link between the proposal and the Aging Airplane Programs.

While the FAA concurs with these comments in principle and acknowledges that the description of the Aging Airplane Programs could have been more specific in the Summary and Discussion sections, the Discussion section is not restated in this final rule. The intent of the Summary section of the final rule is to provide a brief explanation of the unsafe condition and the action necessary to prevent failure of the main deck floor beams at certain body stations due to fatigue cracking. However, we have included information addressing the recommendations of the Airworthiness Assurance Task Force in the Summary section of the final rule.

Allow Previously Approved Repairs

One commenter asks that previously installed approved repairs exceeding the service bulletin repair size terminate the inspections specified in paragraph (a) of the proposed rule. The commenter states that many operators have already done the inspections and repairs per the Boeing Document instead of the referenced service bulletin. The commenter adds that the proposed AD requires that all repairs not installed per the service bulletin be submitted to the FAA for approval. To ease the burden of approving previously installed repairs, the commenter suggests that paragraph (b) of the proposal should be changed to add, " * * * previously installed approved repairs exceeding the service bulletin repair size are considered terminating action for the inspections."

The FAA partially concurs. Previously approved repairs have been subject to analysis prior to acceptance as terminating action. Such repairs can be, in addition to the repairs described in the service bulletin, considered satisfactory and eliminate the need for reinspection in that area. The repairs do not have to be larger than the repairs described in the service bulletin to meet these conditions. However, installation of a local repair would eliminate the need for reinspection in the repaired area only. Paragraph (d) of this AD has been changed to add that the previously approved alternative methods of compliance (AMOC) of such repairs, issued for AD 90-06-02, amendment 39-6489 (55 FR 8372, March 7, 1990), and AD 93-08-04, amendment 39-8551 (58 FR 25546, April 27, 1993), are approved for this final rule.

Revised Service Bulletin/Withdraw Proposed Rule

Three commenters ask that a revised service bulletin be used for doing the actions specified in the proposed rule. One commenter asks that Boeing Service Bulletin 737-57-1210, Revision 1, be referenced in the proposed rule as the appropriate source of service information for doing of the specified actions, instead of the original issue that is now referenced. A second commenter states that it has done the modification specified in the proposed rule on approximately half of its fleet and at least eight of its airplanes have factory production changes which should negate the requirement to install modifications. The commenter adds that these changes are not identified in the service bulletin and notes that issuing an AD would be premature until the service bulletin can be revised. A third commenter asks that the proposed rule be put on hold until the manufacturer has updated the referenced service bulletin to include repairs to address the new conditions.

The FAA does not concur with the commenters. The AD will not be revised to reference Revision 1 of the service bulletin because we cannot approve the use of a document that does not yet exist. Due to the urgency of the unsafe condition, the final rule will be issued using the original issue of the service bulletin as the appropriate source of service information for doing the specified actions. However, operators may submit a request for an AMOC to use a later service bulletin through an appropriate FAA Principal Maintenance Inspector, as provided for by paragraph (d)(1) of this AD.

Cost Impact

One commenter states that the cost and time impacts for the inspection are unrealistic. The commenter notes that, although the FAA does not consider time necessary to gain access and return the area to the previous condition, this would constitute the majority of the time required to accomplish the inspections. The commenter adds that repetitive inspections would be required every 3,000 flight cycles, which would necessitate accomplishing the inspections on a special schedule when access to the area is not normally available. The commenter estimates that it would take 16 hours to gain access and close up, so the time and cost estimate for the inspection should be greatly increased. Also, if the cost data utilized by the FAA for procurement of parts is based upon the referenced service bulletin, then the data is approximately 10 years old and should be reviewed for accuracy.

The FAA does not concur with what it infers is a request to revise the cost estimate. We stated in the Cost Impact section of the proposed rule that, "The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions." Our position on this matter has not changed since issuance of the proposed rule. No change to the final rule is necessary in this regard.

Conclusion

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Cost Impact

There are approximately 935 airplanes of the affected design in the worldwide fleet. The FAA estimates that 340 airplanes of U.S. registry will be affected by this AD, that it will take approximately 8 work hours per airplane to do the required inspection, and that the average labor rate is \$60 per work hour. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be \$163,200, or \$480 per airplane.

The cost impact figure discussed above is based on assumptions that no operator has yet done any of the proposed requirements of this AD action, and that no operator would do those actions in the future if this proposed AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to do the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Should an operator elect to do the optional terminating action rather than continue the repetitive inspections, it will take approximately 96 work hours per airplane to do the change, at an average labor rate of \$60 per work hour. Required parts will cost between \$218 and \$1,426 per airplane. Based on these figures, the cost impact of this optional terminating action is estimated to be between \$5,978 and \$7,186 per airplane.

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.

For the reasons discussed above, I certify that this action (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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it 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.

Sec. 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

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

We post ADs on the internet at "av-info.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).

2001-14-20 Boeing: Amendment 39-12331. Docket 2000-NM-327-AD.

Applicability: Model 737-100 and -200 series airplanes as listed in Boeing Service Bulletin 737-57-1210, dated April 4, 1991, certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been 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 (d)(1) 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 prevent failure of the main deck floor beams at certain body stations (BS) due to fatigue cracking, which could result in rapid decompression and consequent reduced controllability of the airplane, do the following:

Inspections

(a) Before the accumulation of 20,000 total flight cycles, or within 6,000 flight cycles or 15 months after the effective date of this AD, whichever occurs later: Do a detailed visual inspection to find cracking of the main deck floor beams (body buttock line 0.07) located between BS 650 and BS 730, per the Accomplishment Instructions of Boeing Service Bulletin 737-57-1210, dated April 4, 1991. If no cracking is found, do the requirements in paragraph (a)(1) or (a)(2) of this AD at the applicable times specified.

Note 2: For the purposes of this AD, a detailed visual inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or assembly to find 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) If no cracking is found around BS 710 (Figure 1) or BS 727 (Figure 2), do the requirements in either paragraph (a)(1)(i) or (a)(1)(ii) of this AD.

(i) Repeat the detailed visual inspection at intervals not to exceed 6,000 flight cycles until accomplishment of the change specified in paragraph (c) of this AD. Or

(ii) Before further flight, do a one-time eddy current inspection for cracking of the fastener holes. If no cracking is found, before further flight, install the change at BS 710 (Figure 6) or BS 727 (Figure 7), as applicable, per the Accomplishment Instructions of the service bulletin. Doing the change ends the repetitive inspections for that area.

(2) If no cracking is found at BS 650 through BS 675 (Figure 8), do the requirements in either paragraph (a)(2)(i) or (a)(2)(ii) of this AD.

(i) Repeat the detailed visual inspection at intervals not to exceed 6,000 flight cycles until accomplishment of the change specified in paragraph (c) of this AD. Or

(ii) Before further flight, do a one-time eddy current inspection for cracking of the fastener holes. If no cracking is found, before further flight, install the change at BS 663 (Figure 9) per the Accomplishment Instructions of the service bulletin. Doing the change ends the repetitive inspections for that area.

Repair

(b) If any cracking is found during any inspection required by paragraph (a) of this AD, before further flight, either do the repair per the Accomplishment Instructions of Boeing Service Bulletin 737-57-1210, dated April 4, 1991, or do the change specified in paragraph (c) of this AD. Where the service bulletin specifies to contact Boeing for repair instructions: 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 who has been authorized by the FAA to make such findings. For a repair method to be approved by the Manager, Seattle ACO, as required by this paragraph, the Manager's approval letter must specifically reference this AD.

Optional Terminating Action

(c) Accomplishment of the main deck floor beam change in the applicable areas (BS 710 (Figure 6), BS 727 (Figure 7), or BS 650 through 675 (Figure 9)), as specified in the Accomplishment Instructions of Boeing Service Bulletin 737-57-1210, dated April 4, 1991; or repair of the applicable area per the service bulletin; ends the repetitive inspections for that area.

Alternative Methods of Compliance

(d) (1) 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, Seattle ACO. 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.

(2) Alternative methods of compliance, approved previously in accordance with AD 90-06-02, amendment 39-6489 (55 FR 8372, March 7, 1990), and AD 93-08-04, amendment 39-8551 (58 FR 25546, April 27, 1993), are approved as alternative methods of compliance with this AD.

Note 3: 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

(e) 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

(f) Except as provided by paragraph (b) of this AD, the actions shall be done in accordance with Boeing Service Bulletin 737-57-1210, dated April 4, 1991. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. 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

(g) This amendment becomes effective on August 28, 2001.

Issued in Renton, Washington, on July 12, 2001.

Vi L. Lipski,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 01-18017 Filed 7-23-01; 8:45 am]

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