[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0629; Directorate Identifier 2016-NM-184-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. This proposed AD was prompted by reports of fatigue cracking in the frame outboard chord and in the radius of the auxiliary chord at a certain area. This proposed AD would require inspections to detect this cracking, and corrective action if necessary. We are proposing this AD to address the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.

• Fax: 202-493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740; telephone 562-797-1717; Internet https://www.myboeingfleet.com. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0629.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0629; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Alan Pohl, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: (425) 917-6450; fax: (425) 917-6590; email: alan.pohl@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2017-0629; Directorate Identifier 2016-NM-184-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory,

economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We have received reports indicating that fatigue cracking was found in the frame outboard chord at BS 727 and in the radius of the auxiliary chord at BS 727 and S-18A on certain airplanes. Cracks in the outboard chord were found on airplanes having between 20,000 and 85,000 flight cycles, and between 27,000 and 74,000 flight hours. Cracks in the radius of the auxiliary chord were found on airplanes having between 46,000 and 85,000 flight cycles, and between 41,000 and 64,000 flight hours. The cracks were caused by fatigue, and, for certain airplanes, the fretting of adjacent parts contributed to the initiation of the fatigue damage. This condition, if not corrected, could result in reduced structural integrity of the outboard chord and consequent rapid decompression of the airplane.

Related Rulemaking

On October 16, 2012, we issued AD 2012-23-04, Amendment 39-17260 (77 FR 69747, November 21, 2012) ("AD 2012-23-04"), applicable to all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. That AD requires various inspections for cracks in the outboard chord of the frame at BS 727. That AD also requires inspections for cracks in the BS 727 frame outboard chord and the radius of the auxiliary chord, for certain airplanes. That AD was prompted by several reports of fatigue cracking in the frame outboard chord at BS 727 and in the radius of the auxiliary chord.

The actions required by that AD are intended to detect and correct fatigue cracking of the outboard and auxiliary chords, which could result in reduced structural integrity of the outboard chord and consequent rapid decompression of the airplane.

Since issuance of AD 2012-23-04, the FAA has found discrepancies in the requirements of that AD, as follows:

• The optional terminating action specified in paragraph (r) of AD 2012-23-04 allows terminating action if the preventive modification is installed. However, Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, allows terminating action only if both the BS 727 outboard chord is replaced and the preventive modification is installed. Consequently, for airplanes having line numbers 1 through 999 inclusive on which the preventive modification may have been installed, the outboard chord may not have been replaced. Additionally, paragraph (r)(2) of AD 2012-23-04 specifies replacing only a cracked outboard chord; however, the intent was to require replacement of the outboard chord whether it was cracked or not. In light of these factors, there could be cracking in the auxiliary chord combined with cracking in the outboard chord. This cracking could progress undetected and result in the identified unsafe condition.

• Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, contains instructions to determine whether the modification should be classified as interim or permanent; a one-time inspection is specified after the interim modification is done. The instructions specified in the previous service information did not contain this stipulation during installation of the preventive modification. Therefore, the modification could have resulted in edge margins in the frame outboard chord that would have been classified as interim had the modification been done in accordance with Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006. Since neither Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, nor

AD 2012-23-04 contained instructions to measure edge margins, it is possible that an edge margin condition exists, so the one-time follow-on inspection must be done.

• Paragraph (r) of AD 2012-23-04 terminates the one-time inspection specified in Part 8 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, for airplanes that have the interim preventive modification installed. This inspection is referenced in paragraph (o) of AD 2012-23-04, and should not have been terminated. Paragraph (o) of AD 2012-23-04 was incorrectly included in the list of paragraphs with inspections that are terminated after accomplishing paragraph (r) of that AD.

Therefore, since the discrepancies described previously provide inadvertent relief to operators, we find it necessary to issue additional, new AD rulemaking to provide additional inspection requirements. We have confirmed that the requirements of this AD correct those discrepancies and do not conflict with other requirements of AD 2012-23-04.

Related Service Information under 1 CFR part 51

We reviewed Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006. The service information describes procedures for inspections for cracks of the BS 727 frame outboard chord and in the radius of the auxiliary chord, and repair or replacement if necessary. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

We are proposing 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.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the service information described previously.

This AD corrects discrepancies in the requirements for certain airplanes identified in AD 2012-23-04. The FAA has considered that fact in determining whether to issue a new AD action or to supersede AD 2012-23-04. We have determined that a less burdensome approach is to issue a separate AD action applicable to the airplanes on which the discrepancies could have occurred. This proposed AD would not supersede AD 2012-23-04, and compliance with the requirements must continue for airplanes listed in the applicability of AD 2012-23-04. This proposed AD is a separate AD action, applicable only to the airplanes identified in paragraph (c) of this AD.

Costs of Compliance

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	**Labor Cost**	**Affected airplanes of U.S. registry**	**Cost per product**	**Cost on U.S. operators**
Detailed and High Frequency Eddy Current (HFEC) inspections	6 work-hours X $85 per hour = $510 per inspection cycle	5	$510	$2,550 per inspection cycle
One-time follow-on HFEC inspection	9 work-hours X $85 per hour = $765	5	$765	$3,825
HFEC inspection	9 work-hours X $85 per hour = $765	150	$765	$114,750

We estimate the following costs to do any necessary repairs that would be required based on the results of the inspections. We have no way of determining the number of aircraft that might need these repairs:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Repair of cracking of the outboard chord frame	514 work-hours X $85 per hour = $43,690	$13,586	$57,276
Repair of cracking of the outboard chord	49 work-hours X $85 per hour = $4,165	$4,255	$8,420

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 determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) 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.

List of Subjects in 14 CFR Part 39

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

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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):

The Boeing Company: Docket No. FAA-2017-0629; Directorate Identifier 2016-NM-184-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Unsafe Condition

This AD was prompted by reports of fatigue cracking in the frame outboard chord and in the radius of the auxiliary chord at body station (BS) 727 and stringer (S) 18A. We are issuing this AD to detect and correct fatigue cracking of the outboard and auxiliary chords, which could result in reduced structural integrity of the outboard chord and consequent rapid decompression of the airplane.

(f) Compliance

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

(g) Repetitive Inspections and Corrective Action

For airplanes identified in paragraph (h) of this AD: Within 4,500 flight cycles or 24 months after the effective date of this AD, whichever occurs first, do internal detailed and High Frequency Eddy Current (HFEC) inspections to detect cracks in the auxiliary chord radius, in accordance with Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006. If any crack is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD. Repeat the inspections thereafter at intervals not to exceed 15,000 flight cycles. Replacement of the outboard chord of the frame at BS 727 concurrently with the installation of the preventive modification of the outboard chord in accordance with Part

6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, terminates the repetitive inspections required by this paragraph.

(h) Airplanes for Actions Specified in Paragraph (g) of this AD

The actions specified in paragraph (g) of this AD are required for airplanes that meet the criteria of paragraphs (h)(1), (h)(2), (h)(3), and (h)(4) of this AD.

(1) Model 737-100, -200, and -200C series airplanes, line numbers 1 through 999 inclusive.

(2) Airplanes identified as Groups 1, 2, and 3 in Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006.

(3) Airplanes on which a preventive modification has been installed in accordance with the method specified in paragraph (h)(3)(i), (h)(3)(ii), or (h)(3)(iii) of this AD.

(i) Part 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006.

(ii) Part II of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 1, dated May 25, 1995.

(iii) Part II of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, dated June 30, 1994.

(4) Airplanes on which the outboard chord has not been replaced in accordance with the method specified in paragraph (h)(4)(i), (h)(4)(ii), or (h)(4)(iii) of this AD.

(i) Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006.

(ii) Part I of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 1, dated May 25, 1995.

(iii) Part I of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, dated June 30, 1994.

(i) Edge Margin Measurement, Related Investigative Actions, and Repair

For Model 737-100, -200, and -200C series airplanes having line numbers 1 through 999 inclusive, identified as Groups 1 through 3 in Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, on which the preventive modification has been installed in accordance with Boeing Alert Service Bulletin 737-53A1166, dated June 30, 1994; or Boeing Alert Service Bulletin 737-53A1166, Revision 1, dated May 25, 1995: Within 60,000 flight cycles after accomplishing the preventive modification, determine if the modification is classified as interim or permanent by using the edge margin measurement and repair classification specified in Part 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006. In lieu of measuring on the airplane, a review of engineering documentation may be used to classify the modification if the engineering documentation was completed at the time of the modification and has the edge margins recorded.

(1) If the modification is classified as permanent, no further action is required by paragraph (i) of this AD.

(2) If the modification is classified as interim: Within 60,000 flight cycles after accomplishment of the interim modification of the outboard chord of the frame at BS 727 at S-18A, but no earlier than 50,000 flight cycles after accomplishment of the modification, do a one-time follow-on open-hole eddy current inspection to detect cracks in the modified chord, in accordance with Part 8 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006. If any crack is found, before further flight, repair in accordance with Part 3 or Part 4, as applicable, of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006; except, if the repairs cannot be installed using the identified procedures, repair before further flight using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(j) Follow-on Inspection for Interim Modification and Repair

For airplanes having line numbers 1 through 3132 inclusive, on which an interim modification of the BS 727 outboard chord as defined in Part 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, has been accomplished: Within 60,000 flight cycles after accomplishment of the interim modification of the outboard chord of the frame at BS 727 at S-18A, but no earlier than 50,000 flight cycles after accomplishment of the modification, do a one-time follow-on open-hole eddy current inspection to detect cracks in the modified chord, in accordance with Part 8 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006. If any crack is found during the inspection required by this paragraph, before further flight, repair in accordance with Part 3 or Part 4, as applicable, of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006; except, where the repairs cannot be installed using the procedures identified in this service bulletin, repair before further flight using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(k) Exception to the Service Information

Access and restoration procedures specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1166, Revision 2, dated May 25, 2006, are not required by this AD. Operators may do those actions following their approved maintenance procedures.

(l) Alternative Methods of Compliance (AMOCs)

(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 paragraph (m)(1) of this AD. Information may be emailed to: 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, modification, or alteration 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. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(m) Related Information

(1) For more information about this AD, contact Alan Pohl, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: (425) 917-6450; fax: (425) 917-6590; email: alan.pohl@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740; telephone 562-797-1717; Internet https://www.myboeingfleet.com. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on June 22, 2017.

John P. Piccola, Jr.,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.
[FR Doc. 2017-13773 Filed: 6/29/2017 8:45 am; Publication Date: 6/30/2017]