[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0332; Directorate Identifier 2016-NM-164-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 certain The Boeing Company Model 737-200, -200C, -300, -400, and -500 series airplanes. This proposed AD was prompted by reports of skin doublers that disbonded from their skin panels. This proposed AD would require repetitive inspections of fuselage skin panels, and applicable on-condition actions. 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 90740-5600; 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-2017-0332.

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-2017-0332; 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: Wade Sullivan, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6430; fax: 425-917-6590; email: wade.sullivan @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-2017-0332; Directorate Identifier 2016-NM-164-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

Fatigue damage can occur locally, in small areas or structural design details, or globally, in widespread areas. Multiple-site damage is widespread damage that occurs in a large structural element such as a single rivet line of a lap splice joining two large skin panels. Widespread damage can also occur in multiple elements such as adjacent frames or stringers. Multiple-site damage and multiple-element damage cracks are typically too small initially to be reliably detected with normal inspection methods. Without intervention, these cracks will grow, and eventually compromise the structural integrity of the airplane. This condition is known as widespread fatigue damage. It is associated with general degradation of large areas of structure with similar structural details and stress levels. As an airplane ages, widespread fatigue damage (WFD) will likely occur, and will certainly occur if the airplane is operated long enough without any intervention.

The FAA's WFD final rule (75 FR 69746, November 15, 2010) became effective on January 14, 2011. The WFD rule requires certain actions to prevent structural failure due to WFD throughout the operational life of certain existing transport category airplanes and all of these airplanes that will be certificated in the future. For existing and future airplanes subject to the WFD rule, the rule requires that DAHs establish a limit of validity (LOV) of the engineering data that support the structural maintenance program.

Operators affected by the WFD rule may not fly an airplane beyond its LOV, unless an extended LOV is approved.

The WFD rule (75 FR 69746, November 15, 2010) does not require identifying and developing maintenance actions if the DAHs can show that such actions are not necessary to prevent WFD before the airplane reaches the LOV. Many LOVs, however, do depend on accomplishment of future maintenance actions. As stated in the WFD rule, any maintenance actions necessary to reach the LOV will be mandated by airworthiness directives through separate rulemaking actions.

In the context of WFD, this action is necessary to enable DAHs to propose LOVs that allow operators the longest operational lives for their airplanes, and still ensure that WFD will not occur. This approach allows for an implementation strategy that provides flexibility to DAHs in determining the timing of service information development (with FAA approval), while providing operators with certainty regarding the LOV applicable to their airplanes.

We have received reports of skin doublers that disbonded from their skin panels on certain Model 737 series airplanes. Bonded skin doublers are part of the back-up structure for the skin panels and are installed from body station (BS) 259.50 through BS 1016 on both sides of the airplane. The airplane manufacturer has attributed the root cause of disbonded skin doublers to improper processing during the phosphoric acid anodization phase of skin panel manufacturing. Disbonding of the skin panel reduces the skin panel's capability to resist cracks in the countersunk holes of fastened joints and can lead to fuselage skin cracking and multi-site damage, predominantly in the lap splices and butt joints. Fuselage skin cracking resulting from disbonded skin panels, if not detected and corrected, could result in rapid decompression and loss of structural integrity of the airplane.

Related Service Information under 1 CFR part 51

We reviewed Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016. The service information describes procedures for repetitive inspections of fuselage skin panels for cracking, corrosion, and existing disbond repairs; and applicable on-condition actions. 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 that the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishment of the actions identified as "RC" (required for compliance) in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016, described previously, except for differences between this proposed AD and the service information that are identified in the regulatory text of this proposed AD.

For information on the procedures and compliance times, see this service information at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0332.

Related Rulemaking

AD 2003-14-06, Amendment 39-13225 (68 FR 40759, July 9, 2003; corrected July 21, 2003 (68 FR 42956)) ("AD 2003-14-06"), applies to certain Model 737-200, -200C, -300, -400, and -500 series airplanes. AD 2003-14-06 requires repetitive inspections for cracking of certain lap splices, and corrective action if necessary.

Accomplishment of initial inspections specified in this proposed AD would terminate all requirements of AD 2003-14-06.

Explanation of Certain Compliance Times

The compliance time to replace skin panels, which is one of the actions identified as "RC" for certain conditions to address WFD in this NPRM, was established to ensure that discrepant structure is replaced before WFD develops in airplanes. Standard inspection techniques cannot be relied on to detect WFD before it becomes a hazard to flight. We will not grant any extensions of the compliance time to complete any AD-mandated service bulletin related to WFD without extensive new data that would substantiate and clearly warrant such an extension.

Table 9 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016, does not provide a grace period for airplanes that have exceeded a certain compliance time. Paragraph (h)(3) of this proposed AD adds a grace period of 4,500 flight cycles. We have coordinated this grace period with Boeing.

Costs of Compliance

We estimate that this proposed AD affects 169 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
External general visual and detailed inspections	180 work-hours X $85 per hour = $15,300 per inspection cycle	$0	$15,300 per inspection cycle	$2,585,700 per inspection cycle
External high frequency bond test inspection	450 work hours X $85 per hour = $38,250 per inspection cycle	$0	$38,250 inspection cycle	$6,464,250 per inspection cycle

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Ultrasonic disbond inspection and internal detailed skin inspection	630 work-hours X $85 per hour = $53,550 per inspection cycle	$0	$53,550 per inspection cycle	$9,049,950 per inspection cycle

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

On-condition costs per skin panel

Action	Labor cost	Parts cost	Cost per product
On-condition inspections	Up to 25 work-hours X $85 per hour = $2,125	$0	Up to $2,125
Repairs	Up to 68 work-hours X $85 per hour = $5,780	Up to $100	Up to $5,880
Skin panel replacement	304 work-hours X $85 per hour = $25,840	$95,000	$120,840

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-2017-0332; Directorate Identifier 2016-NM-164-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

This AD affects AD 2003-14-06, Amendment 39-13225 (68 FR 40759, July 9, 2003; corrected July 21, 2003 (68 FR 42956)) ("AD 2003-14-06").

(c) Applicability

This AD applies to The Boeing Company Model 737-200, -200C, -300, -400, and -500 series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of skin doublers that disbonded from their skin panels. We are issuing this AD to detect and correct disbonded skin panels, which could result in fuselage skin cracking, rapid decompression, and loss of structural integrity of the airplane.

(f) Compliance

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

(g) Actions Required for Compliance

Except as required by paragraph (h) of this AD: Do all applicable actions identified as required for compliance ("RC") in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016. Do the actions at the applicable times specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016.

(h) Exceptions to Service Information Specifications

(1) Where Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016, uses the phrase "after the original issue of this service bulletin," for purposes of determining compliance with the requirements of this AD, the phrase "after the effective date of this AD" must be used.

(2) Where Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016, specifies contacting Boeing for instructions, and specifies that action as "RC" (Required for Compliance): This AD requires using a method approved in accordance with the procedures specified in paragraph (k) of this AD.

(3) For replaced skin panels identified in table 9 of paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016, on which the one-time internal inspection specified in Service Bulletin 737-53-1179, Revision 2, dated October 25, 2001, has not been done: The compliance time for accomplishment of the actions specified in Part 8 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016, is at the latest of the times specified in paragraphs (h)(3)(i), (h)(3)(ii), and (h)(3)(iii) of this AD.

(i) Within 50,000 flight cycles after the skin panel replacement.

(ii) Within 20,000 flight cycles after July 14, 2003 (the effective date of AD 2003-14-16).

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

(i) Terminating Action for this AD

Accomplishment of any skin panel replacement, as specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1349, dated August 23, 2016, except as required by paragraph (h)(2) of this AD, terminates the repetitive inspections required by paragraph (g) of this AD at the replaced skin panel only.

(j) Terminating Action for AD 2003-14-06

Accomplishment of the initial inspections required by paragraph (g) of this AD terminates all requirements of AD 2003-14-06.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles Aircraft Certification Office, 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 (l)(1) of this AD. Information may be emailed to: 9-ANM-LAACO-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.

(4) Except as required by paragraph (h)(2) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (k)(4)(i) and (k)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled "RC Exempt," then the RC requirement is removed from that step or substep. An

AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(l) Related Information

(1) For more information about this AD, contact Wade Sullivan, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6430; fax: 425-917-6590; email: wade.sullivan @faa.gov.

(2) For information about AMOCs, contact Jennifer Tsakoumakis, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5264; fax: 562-627-5210; email: jennifer.tsakoumakis@faa.gov.

(3) 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 90740-5600; 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 April 24, 2017.

Paul Bernado,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.
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