



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2016-9068; Directorate Identifier 2016-NM-067-AD; Amendment 39-18838; AD 2017-06-14]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 737-300, -400, and -500 series airplanes. This AD was prompted by reports of cracks in the horizontal stabilizer lower skins. This AD requires inspections for cracking of the horizontal stabilizer lower skin, and corrective actions if necessary; and also provides actions that would terminate certain repetitive inspections. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister 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-2016-9068.

### **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-2016-9068; 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 AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** George Garrido, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5232; fax: 562-627-5210; email: [george.garrido@faa.gov](mailto:george.garrido@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model 737-300, -400, and -500 series airplanes. The NPRM published in the Federal Register on September 8, 2016 (81 FR 62022) (“the NPRM”). The NPRM was prompted by reports of cracks in the horizontal stabilizer lower skins. The NPRM proposed to require inspections for cracking of the horizontal stabilizer lower skin, including repetitive inspections, as applicable, and corrective actions if necessary; and also proposed actions that would terminate certain repetitive inspections. We are issuing this AD to detect and correct cracks in horizontal

stabilizer lower skins resulting in reduced local stiffness of the horizontal stabilizer, which can cause heavy vibration leading to loss of structural integrity of the horizontal stabilizer.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Support for the NPRM**

Boeing expressed support for the NPRM.

### **Request to Revise Repair Instructions**

All Nippon Airways (ANA) requested that we revise paragraphs (h)(1) and (h)(3) of the proposed AD to state "repair common to the rear spar lower chord between station (STA) 83.50 and STA 249.10," instead of "repair." ANA stated that there might be a repair installed on the lower skin of the horizontal stabilizer that is not addressed in Boeing Special Attention Service Bulletin 737-55-1059, Revision 1, dated April 6, 2016 ("SASB 737-55-1059 R1"). ANA explained that some structural repair manual repairs and external doublers are not applicable to the inspection area specified in SASB 737-55-1059 R1.

We agree with ANA's request. Specifying the location of the applicable repairs may reduce potential confusion. Therefore, we have revised paragraphs (h)(1), (h)(2), and (h)(3) of this AD to specify the location of the applicable repairs.

### **Request to Clarify Fastener Requirements**

ANA requested that we clarify the fastener requirements. ANA stated that figure 3 in Boeing Special Attention Service Bulletin 737-55-1059, dated September 10, 1998, specifies to use blind rivets and Hi-lok fasteners; however, compliance table 2, note (b), in SASB 737-55-1059 R1, states that doublers installed with solid rivets do not

need to be inspected for any loose or missing fasteners. ANA explained that Boeing told ANA that Hi-lok fasteners do not require inspection for any loose or missing fasteners.

We agree to clarify the fastener requirements. We infer that ANA is requesting that we update paragraph (h) of this AD to specify that Hi-lok fasteners do not require inspection. We have determined that Hi-lok fasteners do not require inspection.

Therefore, we have added paragraph (i)(3) to this AD to specify that where SASB 737-55-1059 R1 specifies that doublers installed with solid rivets do not need to be inspected for loose or missing fasteners, this AD does not require doublers installed with solid rivets or Hi-lok fasteners to be inspected for loose or missing fasteners. We have also revised paragraph (h)(1) of this AD to reference this exception.

#### **Request to Revise Configuration Description**

ANA requested that we revise paragraph (h) of the proposed AD to refer to the horizontal stabilizer configuration with the applicable repair installed side only. ANA asserted that the wording of paragraph (h) of the proposed AD could be interpreted to require inspection of both the repaired and unrepaired sides of the horizontal stabilizer.

We agree with ANA's request. The wording in the proposed AD is not clear regarding what is required if an airplane has left and right stabilizers that are different configurations. For example, the left-side stabilizer may have a repair installed common to the rear spar lower chord (configuration 2), whereas the right side may not have a repair (configuration 1). We have revised the affected airplanes in paragraph (g) of this AD from "Group 1, Configuration 1, airplanes" to "any Configuration 1 horizontal stabilizer on Group 1 airplanes". We have revised the affected products in paragraph (h) of this AD from "Group 1, Configuration 2, airplanes" to "any Configuration 2 horizontal stabilizer on Group 1 airplanes."

## **Effect of Winglets on Accomplishment of the Proposed Actions**

Aviation Partners Boeing stated that accomplishing the Supplemental Type Certificate (STC) ST01219SE does not affect the actions specified in the NPRM.

We concur with the commenter. We have redesignated paragraph (c) of the proposed AD as paragraph (c)(1) of this AD and added paragraph (c)(2) to this AD to state that installation of STC ST01219SE does not affect the ability to accomplish the actions required by this final rule. Therefore, for airplanes on which STC ST01219SE is installed, a “change in product” AMOC approval request is not necessary to comply with the requirements of 14 CFR 39.17.

## **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

## **Related Service Information under 1 CFR part 51**

We reviewed SASB 737-55-1059 R1. The service information describes procedures for doing inspections of the horizontal stabilizer lower skin, and repairs. The service information also describes procedures for doing actions that would terminate certain repetitive inspections. 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.

**Costs of Compliance**

We estimate that this AD affects 270 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

**Estimated costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Inspection	4 work-hours X \$85 per hour = \$340 per inspection cycle	\$0	\$340 per inspection cycle	\$91,800 per inspection cycle

**Estimated costs for optional actions**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Modification	Up to 51 work-hours per stabilizer X \$85 per hour = \$4,335	\$721	Up to \$5,056 per stabilizer

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

**On-condition costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Skin splice repair	Up to 438 work-hours X \$85 per hour = \$37,230	\$0	Up to \$37,230
External doubler repair	26 work-hours X \$85 per hour = \$2,210	\$0	\$2,210

### **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**

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),
- (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.

## **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):

**2017-06-14 The Boeing Company:** Amendment 39-18838; Docket No. FAA-2016-9068; Directorate Identifier 2016-NM-067-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

(1) This AD applies to The Boeing Company Model 737-300, -400, and -500 series airplanes, certificated in any category, as identified in Boeing Special Attention Service Bulletin 737-55-1059, Revision 1, dated April 6, 2016 (“SASB 737-55-1059 R1”).

(2) Installation of Supplemental Type Certificate (STC) ST01219SE ([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgstc.nsf/0/ebd1cec7b301293e86257cb30045557a/\\$FILE/ST01219SE.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/ebd1cec7b301293e86257cb30045557a/$FILE/ST01219SE.pdf)) does not affect the ability to accomplish the actions required by this AD. Therefore, for airplanes on which STC ST01219SE is

installed, a "change in product" alternative method of compliance (AMOC) approval request is not necessary to comply with the requirements of 14 CFR 39.17.

**(d) Subject**

Air Transport Association (ATA) of America Code 55; Horizontal stabilizer.

**(e) Unsafe Condition**

This AD was prompted by reports of cracks in horizontal stabilizer lower skins. We are issuing this AD to detect and correct cracks in horizontal stabilizer lower skins, resulting in reduced local stiffness of the stabilizer, which can cause heavy vibration leading to loss of structural integrity of the horizontal stabilizer.

**(f) Compliance**

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

**(g) Inspections, Related Investigative Actions, and Corrective Actions for Configuration 1 Horizontal Stabilizers on Group 1 Airplanes**

For any Configuration 1 horizontal stabilizer on Group 1 airplanes, as identified in SASB 737-55-1059 R1: Except as specified in paragraph (i)(1) of this AD, at the applicable time specified in paragraph 1.E., "Compliance," of SASB 737-55-1059 R1, do a detailed inspection for cracking of the horizontal stabilizer lower skin; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of SASB 737-55-1059 R1, except as specified in paragraph (i)(2) of this AD. Do all applicable related investigative and corrective actions before further flight. Repeat the inspection of the horizontal stabilizer lower skin, if applicable, thereafter at the applicable intervals specified in paragraph 1.E., "Compliance," of SASB 737-55-1059 R1. Options specified in SASB 737-55-1059 R1 for accomplishing the inspections are acceptable for the corresponding requirements of this paragraph provided that the inspections are done at the applicable times in paragraph 1.E., "Compliance," of the SASB 737-55-1059 R1.

**(h) Inspections, Related Investigative Actions, and Corrective Actions for Configuration 2 Horizontal Stabilizers on Group 1 Airplanes**

For any Configuration 2 horizontal stabilizer on Group 1 airplanes, as identified in SASB 737-55-1059 R1: Except as specified in paragraph (i)(1) of this AD, at the applicable time specified in paragraph 1.E., “Compliance,” of SASB 737-55-1059 R1, do the actions specified in paragraphs (h)(1), (h)(2), and (h)(3) of this AD; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of SASB 737-55-1059 R1, except as specified in paragraph (i)(2) of this AD. Do all applicable related investigative and corrective actions before further flight. Repeat the inspections specified in paragraphs (h)(1), (h)(2), and (h)(3) of this AD, if applicable, thereafter at the applicable intervals specified in paragraph 1.E., “Compliance,” of SASB 737-55-1059 R1. Options specified in SASB 737-55-1059 R1, for accomplishing the inspections are acceptable for the corresponding requirements of this paragraph provided that the inspections are done at the applicable times in paragraph 1.E., “Compliance,” of SASB 737-55-1059 R1.

(1) Do a high frequency eddy current inspection for cracking of the skin around any repair common to the rear spar lower chord between station (STA) 83.50 and STA 249.10 which was done as specified in the structural repair manual or any external doubler repair, and a detailed inspection for any loose or any missing fastener of repaired doublers, except as specified in paragraph (i)(3) of this AD.

(2) Do a detailed inspection for cracking of the inspar lower skin between STA 83.50 and STA 249.10, except in areas repaired common to the rear spar lower chord.

(3) Do a low frequency eddy current inspection for cracking of the forward fastener row of any external doubler repair common to the rear spar lower chord between STA 83.50 and STA 249.10.

**(i) Service Information Exceptions**

(1) Where SASB 737-55-1059 R1 specifies a compliance time “after the Revision 1 date of this service bulletin,” this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) If any cracking, corrosion, hole elongation, or loose or missing fastener is found during any inspection required by this AD, and SASB 737-55-1059 R1 specifies to contact Boeing for repair instructions: Before further flight, repair the cracking, corrosion, hole elongation, loose or missing fasteners using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(3) Where SASB 737-55-1059 R1 specifies that doublers installed with solid rivets do not need to be inspected for loose or missing fasteners, this AD does not require doublers installed with solid rivets or Hi-lok fasteners to be inspected for loose or missing fasteners.

**(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles 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 (k) 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, Los Angeles 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.

**(k) Related Information**

For more information about this AD, contact George Garrido, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles ACO, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5232; fax: 562-627-5210; email: george.garrido@faa.gov.

**(l) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Special Attention Service Bulletin 737-55-1059, Revision 1, dated April 6, 2016.

(ii) Reserved.

(3) For Boeing 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>.

(4) You may view this 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.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on March 16, 2017.

Dionne Palermo,  
Acting Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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