



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2015-2958; Directorate Identifier 2014-NM-248-AD; Amendment 39-18545; AD 2016-11-18]**

**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 all The Boeing Company Model 787 airplanes. This AD was prompted by the disclosure that the inner diameters of some batches of landing gear pins were not shot peened in accordance with design specifications, and need to be replaced. This AD requires inspection for improperly manufactured landing gear pins, and replacement if necessary. We are issuing this AD to detect and correct insufficient shot peening that could lead to stress corrosion cracking and failure of the landing gear pin, and cause landing gear collapse and inability to control the airplane at high speeds on the ground.

**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: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1;

fax 206-766-5680; 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-2015-2958.

### **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-2015-2958; 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 Document 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:** Melanie Violette, Senior Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6422; fax: 425-917-6590; email: [melanie.violette@faa.gov](mailto:melanie.violette@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 all The Boeing Company Model 787 airplanes. The NPRM published in the Federal Register on July 23, 2015 (80 FR 43642) (“the NPRM”). The NPRM was prompted by a report indicating that the inner diameters of some batches of landing gear pins were not shot peened and need to be replaced. The NPRM proposed to require inspection for improperly manufactured landing gear pins, and replacement if

necessary. We are issuing this AD to detect and correct insufficient shot peening that could lead to stress corrosion cracking and failure of the landing gear pin, and cause landing gear collapse and inability to control the airplane at high speeds on the ground.

### **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.

### **Request to Use Revised Service Information**

One commenter, Junji Miura, found several errors in Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 001, dated November 14, 2014, and requested that we include a reference to the upcoming corrections. The commenter stated that Boeing will correct these errors in the next revision, and that referencing this revision in this AD will avoid the need for a global alternative method of compliance (AMOC).

We agree with the request. Boeing has issued Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016. We have reviewed this service information, which was issued to correct typographical errors and part numbers, and to update statements, but adds no new actions. The changes in Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016, address the commenter's concerns. We have revised the service information references throughout this final rule to refer to Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016, and we have added a new paragraph (h) to this AD to provide credit for the original service information. We have redesignated subsequent paragraphs accordingly.

### **Request for Correction to Paragraphs (g) and (h) of this AD**

Boeing requested a correction to paragraphs (g) and (h) of the proposed AD to replace the word "or" with the word "and" in the phrase "part number or serial number."

We agree to correct the applicable paragraphs of this AD because the intent was to require replacement of the pin only if both the part number and serial number are identified in Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016. In paragraphs (g) and (i) of this AD, we revised the phrase “part number or serial number” to “part number and serial number.”

### **Request for Clarification of Airplanes Affected by Inspection Requirements**

One commenter, Raja Rehman, requested that we clarify the required actions for airplanes that are covered by this AD, but not listed in the “Effectivity” section of Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 001, dated November 14, 2014. The commenter asked if the inspection requirements of the proposed AD would apply to all delivered and to-be-delivered Model 787 airplanes, and if Boeing intends to issue a revision to the service bulletin that will cover the additional airplanes. The commenter also asked if an airplane that did not have the affected pins installed at production/delivery, and had never replaced the pins during service would comply with the AD.

We agree that clarification is necessary. The landing gear pin is a removable structural component (rotatable part). Through maintenance action, the affected (discrepant) pins could be installed on airplanes that were initially delivered with acceptable pins. Therefore, the applicability of this AD is all Model 787 airplanes – both those that are currently delivered and future deliveries – because the affected pins could be installed on any Model 787 airplane. It is not necessary for the applicability of the AD to match the effectivity of Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 001, dated November 14, 2014, or Issue 002, dated April 6, 2016. This difference has been coordinated with Boeing.

We have modified paragraph (g) to require the inspections only for airplanes that received their original airworthiness certificate or original export certificate of

airworthiness on or before the effective date of this AD. These are the airplanes that either had the affected (discrepant) pins installed in production, or may have had them installed through maintenance action. Paragraph (i), which remains applicable to all Model 787 airplanes, prohibits installation of the affected pins in the future.

### **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 Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016. The service information describes procedures to inspect and replace certain landing gear pins. 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 13 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

### Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	3 work-hours X \$85 per hour = \$255	\$0	\$255	\$3,315

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

### On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacement	Up to 19 work-hours X \$85 per hour = \$1,615	\$35,569	Up to \$37,184

### 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):

**2016-11-18 The Boeing Company:** Amendment 39-18545 ; Docket No. FAA-2015-2958; Directorate Identifier 2014-NM-248-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**

This AD applies to all The Boeing Company Model 787 airplanes, certificated in any category.

**(d) Subject**

Air Transport Association (ATA) of America Code 32, Landing Gear.

**(e) Unsafe Condition**

This AD was prompted by the disclosure that the inner diameters of some batches of landing gear pins were not shot peened in accordance with design specifications, and need to be replaced. We are issuing this AD to detect and correct insufficient shot peening that could lead to stress corrosion cracking and failure of the landing gear pin, and cause landing gear collapse and inability to control the airplane at high speeds on the ground.

**(f) Compliance**

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

**(g) Inspection and Replacement**

For airplanes on which the original airworthiness certificate or the original export certificate of airworthiness was issued on or before the effective date of this AD: At the applicable time specified in paragraph 5, "Compliance," of Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016, do a landing gear pin part number and serial number inspection, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 002,

dated April 6, 2016. A review of airplane maintenance or delivery records is acceptable in lieu of this inspection if the part number and serial number of the installed landing gear pins can be conclusively determined from that review.

(1) If the part number and serial number do not match the list of affected pin numbers: No further action is required by this paragraph at that pin location.

(2) If the part number and serial number match the list of affected pin numbers: At the applicable time specified in paragraph 5, "Compliance," of Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016, replace the affected pin with a pin that does not have an affected part number and serial number, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016.

**(h) Credit for Previous Actions**

This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before the effective date of this AD, using Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 001, dated November 14, 2014. This service information is not incorporated by reference in this AD.

**(i) Parts Installation Prohibition**

As of the effective date of this AD, no person may install on any airplane a landing gear pin having an affected part number and serial number identified in Boeing Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016.

**(j) 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 (k) 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.

(4) For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (j)(4)(i) and (j)(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. 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.

**(k) Related Information**

For more information about this AD, contact Melanie Violette, Senior Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6422; fax: 425-917-6590; email: melanie.violette@faa.gov.

**(I) 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 Alert Service Bulletin B787-81205-SB320022-00, Issue 002, dated April 6, 2016.

(ii) Reserved.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; 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 May 24, 2016.

Michael Kaszycki,  
Acting Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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