



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2016-9439; Directorate Identifier 2016-NM-170-AD; Amendment 39-18870; AD 2017-09-08]**

**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 787-8 airplanes. This AD was prompted by a report indicating that during an airplane inspection in production, the variable frequency starter generator (VFSG) power feeder cables were found to contain terminal lugs incorrectly installed common to terminal blocks located in the wing front spar. This AD requires a general visual inspection of the wings, section 16, terminal lugs at the terminal power block of the VFSG power feeder cable for correct installation and applicable corrective actions. 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-2016-9439.

### **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-2016-9439; 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:** Brendan Shanley, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6492; fax: 425-917-6590; email: [brendan.shanley@faa.gov](mailto:brendan.shanley@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 787-8 airplanes. The NPRM published in the Federal Register on December 16, 2016 (81 FR 91066) (“the NPRM”). The NPRM was prompted by a report indicating that during an airplane inspection in production, the VFSG power feeder cables were found to contain terminal lugs incorrectly installed common to terminal blocks located in the wing front spar. The

NPRM proposed to require a general visual inspection of the wings, section 16, terminal lugs at the terminal power block of the VFSG power feeder cable for correct installation and applicable corrective actions. We are issuing this AD to detect and correct incorrectly installed terminal lugs which may contact adjacent structure and be damaged. Damaged terminal lugs could cause the potential loss of several functions essential for safe flight or electrical arcing in a flammable leakage zone, which could result in an electrical short and the possible introduction of energy into the main fuel tanks.

### **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**

The Air Line Pilots Association, International, expressed support for the NPRM.

### **Request to Revise Compliance Time**

Boeing and All Nippon Airways (ANA) requested that we revise the compliance time specified in paragraph (g) of the proposed AD. Boeing stated that paragraph (g) of the proposed AD refers to paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin B787-81205-SB240027-00, Issue 002, dated September 6, 2016 ("ASB B787-81205-SB240027-00, Issue 002") and requested that we instead refer to paragraph 5., "Compliance," of ASB B787-81205-SB240027-00, Issue 002" because that is the correct location for the applicable times. ANA stated that paragraph 1.E., "Compliance," doesn't exist in ASB B787-81205-SB240027-00, Issue 002, and recommended a compliance time of "within 12 months after the effective date of this AD." Boeing also recommended that the compliance time be tied to the effective date of the AD to allow operators a valid and acceptable time frame to perform the actions specified in ASB B787-81205-SB240027-00, Issue 002. Additionally, the commenters

stated that the compliance time “within 12 months after the original issue date of this service bulletin,” as specified in ASB B787-81205-SB240027-00, Issue 002, would put operators out of compliance upon AD issuance.

We agree with the commenters. We have revised paragraph (g) of this AD to specify “Within 12 months after the effective date of this AD” and have removed reference to paragraph 1.E., “Compliance,” of ASB B787-81205-SB240027-00, Issue 002. We have determined that extending the compliance time from what was proposed will provide an acceptable level of safety.

### **Request to Clarify the Unsafe Condition Statement**

Boeing requested that we revise the “Discussion” section of the NPRM and paragraph (e) of the proposed AD to remove information about the potential to introduce energy into the main fuel tanks and include information about potential loss of systems. Boeing stated that “introduction of energy into the fuel tank” is possible but doesn’t fully describe the unsafe condition. Boeing noted that the “BACKGROUND” and “REASON” statements of ASB B787-81205-SB240027-00, Issue 002, specifically include information that the unsafe condition is due to the “potential loss of several functions essential for safe flight.”

We agree that clarification of the unsafe condition statement is necessary. We have revised the “Discussion” section of this final rule, and paragraph (e) of this AD to state that the unsafe condition is due to the “potential loss of several functions essential for safe flight.” However, we have not removed information about the potential to introduce energy into the main fuel tanks, because that information also describes the potential unsafe condition.

### **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 ASB B787-81205-SB240027-00, Issue 002. The service information describes procedures for a general visual inspection of the right and left wing, section 16, VFSG power feeder cable terminal lugs for correct installation and corrective 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.

**Costs of Compliance**

We estimate that this AD affects 6 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	8 work-hours X \$85 per hour = \$680	\$0	\$680	\$4,080

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

Action	Labor cost	Parts cost	Cost per product
Rework wing terminal lugs	9 work-hours X \$85 per hour = \$765 <sup>[1]</sup>	\$0	\$765

<sup>[1]</sup> Labor costs are specific to each wing (left or right.)

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

#### 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):

2017-09-08 **The Boeing Company:** Amendment 39-18870; Docket No. FAA-2016-9439; Directorate Identifier 2016-NM-170-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 The Boeing Company Model 787-8 airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin B787-81205-SB240027-00, Issue 002, dated September 6, 2016 (“ASB B787-81205-SB240027-00, Issue 002”).

**(d) Subject**

Air Transport Association (ATA) of America Code 24, Electrical power.

**(e) Unsafe Condition**

This AD was prompted by a report indicating that during an airplane inspection in production, the variable frequency starter generator (VFSG) power feeder cables were found to contain terminal lugs incorrectly installed common to terminal blocks located in the wing front spar; the lugs were close to the structure causing the lug sleeve to come in contact with adjacent fasteners. We are issuing this AD to detect and correct incorrectly installed terminal lugs which may contact adjacent structure and be damaged. Damaged terminal lugs could cause the potential loss of several functions essential for safe flight or electrical arcing in a flammable leakage zone, which could result in an electrical short and the possible introduction of energy into the main fuel tanks.

**(f) Compliance**

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

**(g) Inspection of Terminal Lugs and Corrective Actions**

Within 12 months after the effective date of this AD, do a general visual inspection of the right and left wing, section 16, VFSG power feeder cable terminal lugs at the terminal block for correct installation and do all applicable corrective actions, in accordance with ASB B787-81205-SB240027-00, Issue 002. Do all applicable corrective actions before further flight.

**(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-SB240027-00, Issue 001, dated January 21, 2014.

**(i) 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 (j)(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.

**(j) Related Information**

(1) For more information about this AD, contact Brendan Shanley, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6492; fax: 425-917-6590; email: brendan.shanley@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (k)(3) and (k)(4) of this AD.

**(k) 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-SB240027-00, Issue 002, dated September 6, 2016.

(ii) Reserved.

(3) For Boeing service information identified in this AD, 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>.

(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 April 27, 2017.

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

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