

[Federal Register Volume 83, Number 2 (Wednesday, January 3, 2018)]

[Rules and Regulations]

[Pages 216-219]

From the Federal Register Online via the Government Publishing Office [www.gpo.gov]

[FR Doc No: 2017-28379]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2017-0500; Product Identifier 2017-NM-009-AD; Amendment 39-19142; AD 2018-01-01]**

**RIN 2120-AA64**

#### **Airworthiness Directives; The Boeing Company Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model MD-11 and MD-11F airplanes. This AD was prompted by fuel system reviews conducted by the manufacturer. This AD requires a one-time inspection of the wire assemblies of the tail fuel tank transfer pumps to determine if metallic transitions are installed at the wire harness breakouts, and corrective actions if necessary. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective February 7, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of February 7, 2018.

**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; telephone 562-797-1717; internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Transport Standards Branch, 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-2017-0500.

#### **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-2017-0500; 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 final rule, 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:** Sérj Harutunian, Aerospace Engineer, Propulsion Section, Los Angeles ACO Branch, FAA, 3960 Paramount Boulevard, Lakewood, California 90712-4137; phone: 562-627-5254; fax: 562-627-5210; email: serj.harutunian@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 MD-11 and MD-11F airplanes. The NPRM published in the Federal Register on May 30, 2017 (82 FR 24597). The NPRM was prompted by fuel system reviews conducted by the manufacturer. The NPRM proposed to require a one-time inspection of the wire assemblies of the tail fuel tank transfer pumps to determine if metallic transitions are installed at the wire harness breakouts, and corrective actions if necessary. We are issuing this AD to detect and correct potential ignition sources inside the tail fuel tank, which, in combination with flammable vapors, could result in a fuel tank fire or explosion, and consequent loss of the airplane.

**Comments**

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

**Supportive Comment**

The Air Line Pilots Association International stated that it agreed with the intent of the NPRM.

**Request To Clarify the Description of the Unsafe Condition**

Boeing asked that we clarify the description of the unsafe condition identified in paragraph (e) of the proposed AD to add the potential of fuel starvation as the end-level effect. Boeing stated that referenced service information specifies that the unsafe condition could result in engine fuel starvation.

We agree that damaged wires could result in fuel starvation as a potential unsafe condition. However, we have no SFAR88 analysis or service difficulty reports associated with the loss of system functions or fuel starvation from the chafed or damaged wires identified in this AD. We do have previous Special Federal Aviation Regulation 88 (SFAR88) ADs for wire harnesses in the same area that were issued to prevent wire chafing and potential ignition sources inside the fuel tank. The actions required by this AD are intended primarily to reduce the risk of other incidents of wires chafing and subsequent fuel tank fire or explosion. Therefore, we have made no change to this AD in this regard.

**Request To Change Certain Estimates in Costs of Compliance Section**

FedEx asked that the work-hours under the On-Condition Costs for the replacement be increased from 16 to 100. FedEx stated that the replacement cost specifies 16 work-hours, but noted that replacement of only one affected part will actually take about 100 hours. FedEx added that 100 work-hours is only for one damaged wire assembly.

United Parcel Service (UPS) asked that the work-hours under the On-Condition Costs for the replacement be increased from 16 to 244. UPS stated that it has previously replaced this wire harness and it required 244 work hours to complete the replacement. UPS also asked that the cost for parts for the repair be added. UPS stated that it has sourced the materials and the cost is \$1,680 per airplane (or \$168 per transition location).

We agree to revise the estimated on-condition work-hours. When issuing a service bulletin, Boeing estimates work-hours under expected conditions for direct labor only. As operators implement the service bulletin, they may find the actual work-hours are higher or lower than estimated. We have updated the Costs of Compliance section of this AD to reflect between 100 and 244 work-hours. We have also included the parts cost estimate provided for repairs.

### **Request To Add Information Notice To Service Information Citation**

FedEx asked that Boeing Alert Service Bulletin MD11-28A150 IN 02, dated February 24, 2017, be added to the service information cited in paragraph (g) of the proposed AD. FedEx stated that the one-time inspection and corrective actions in paragraph (g) specify performing a detailed inspection in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016. FedEx added that since the referenced service information was issued, Boeing released an information notice (IN 02) with part numbers for three new wire assembly kits.

We disagree with the commenter's request. Boeing Alert Service Bulletin MD11-28A150 IN 02, dated February 24, 2017, provides updated kit information for the operators. The individual wire assembly part numbers in the new kits are the same wire assembly part numbers needed for the replacement required by this AD as specified in the figures in Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016. Since this AD only requires the replacement of certain individual wire assembly part numbers and not the kit part numbers that consist of the individual wire assembly part numbers, we have made no change to this AD in this regard.

### **Request To Clarify Paragraph (h) of the Proposed AD**

FedEx and UPS requested that we clarify the actions specified in paragraph (h) of the proposed AD. FedEx stated that paragraph (h) of the proposed AD provides information to perform different tests than those listed in steps 1.f, 1.g., and 1.h. of Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016. FedEx stated it is not clear if the required test after rework is in accordance with steps 1.a. through 1.j. of Part 4 of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016, or per the actions specified in (h)(1), (h)(2), and (h)(3) of this AD only. FedEx and UPS also stated that the proposed AD should require test procedures only for the section that Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016, is addressing and not all the systems associated with wire assemblies AJS9013 and AJS9014. FedEx and UPS also noted that the airplane maintenance manual (AMM) references in paragraphs (h)(1) and (h)(2) of the proposed AD are incorrect (AMM 28-28-01 should be AMM 28-08-01; AMM 26-21-02 should be AMM 28-21-02).

We agree to clarify which actions are required by this AD. Steps 1.f, 1.g., and 1.h. of Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016, are required for compliance (RC) after any rework is done and only address the system affected by this AD. The other steps identified as "RC exempt" as specified in Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016, are not a part of the requirements of this AD.

The intent of paragraph (h) of the proposed AD was to specify the corrective action for RC tests. Steps 1.f, 1.g., and 1.h. of Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016, specify to accomplish tests but the steps do not specify

corrective actions if the tests fail. To clarify that the tests themselves are not exceptions to Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016, we have removed paragraph (h) of the proposed AD and included the corrective action statement for the tests in paragraph (g) of this AD.

We acknowledge that the AMM references in paragraphs (h)(1) and (h)(2) of the proposed AD were incorrect and note that the AMM references for the tests are identified correctly in Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016.

## Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule 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 final rule.

## Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016. The service information describes procedures for a one-time detailed inspection of the wire assemblies of the tail fuel tank transfer pumps to determine if metallic transitions are installed at the wire harness breakouts, and corrective actions that include repair and replacement of the wire assembly. 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 110 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	4 work-hours × \$85 per hour = \$340	\$0	\$340	\$37,400

We estimate the following costs to do any necessary repairs/replacements 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/replacements:

### On-condition Costs

Action	Labor cost	Parts cost	Cost per product
Repair	9 work-hours × \$85 per hour = \$765	Up to \$1,680	Up to \$2,445.
Replacement	Between 100 and 244 work-hours × \$85 per hour = between \$8,500 and \$20,740	\$57,526	Between \$66,026 and \$78,266.

## **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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

## **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):



**2018-01-01 The Boeing Company:** Amendment 39-19142; Docket No. FAA-2017-0500; Product Identifier 2017-NM-009-AD.

**(a) Effective Date**

This AD is effective February 7, 2018.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to the Boeing Company Model MD-11 and MD-11F airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016.

**(d) Subject**

Air Transport Association (ATA) of America Code 28; Fuel.

**(e) Unsafe Condition**

This AD was prompted by fuel system reviews conducted by the manufacturer. We are issuing this AD to detect and correct potential ignition sources inside the tail fuel tank, which, in combination with flammable vapors, could result in a fuel tank fire or explosion, and consequent loss of the airplane.

**(f) Compliance**

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

**(g) One-Time Inspection and Corrective Actions**

Within 27 months after the effective date of this AD, do a one-time detailed inspection of the wire assemblies of the tail fuel tank transfer pumps to determine if metallic transitions are installed at the wire harness breakouts, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016. If metallic transitions are installed, no further action is required by this paragraph. If metallic transitions are not installed, do the corrective actions required by paragraphs (g)(1) and (g)(2) of this AD, as applicable, and if, after any repair or replacement is done, any test fails, before further flight, do corrective actions, repeat the test, and do applicable corrective actions until the test is passed.

(1) Repair any affected wire assembly before further flight, in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016, or replace any affected wire assembly with a new wire assembly before further flight, in

accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016. If the replacement is done, no further action is required for that wire assembly only.

(2) Within 24 months after accomplishment of the repair required by paragraph (g)(1) of this AD: Replace any repaired wire assembly with a new wire assembly, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A150, dated October 6, 2016.

#### **(h) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles ACO Branch, 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 certification office, send it to the attention of the person identified in paragraph (i) 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 Branch, 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 (h)(4)(i) and (h)(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.

#### **(i) Related Information**

For more information about this AD, contact Sérj Harutunian, Aerospace Engineer, Propulsion Section, Los Angeles ACO Branch, FAA, 3960 Paramount Boulevard, Lakewood, California 90712-4137; phone: 562-627-5254; fax: 562-627-5210; email: serj.harutunian@faa.gov.

#### **(j) 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 MD11-28A150, dated October 6, 2016.

(ii) Reserved.

(3) For 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; telephone 562-797-1717; internet <https://www.myboeingfleet.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 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 December 26, 2017.

John P. Piccola, Jr.,  
Acting Director, System Oversight Division,  
Aircraft Certification Service.