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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-0248; Directorate Identifier 2014-NM-143-AD; Amendment 39-18410; AD 2016-04-16]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2013-08-23 for all The Boeing Company Model DC-10-10, DC-10-10F, DC-10-15, DC-10-30, DC-10-30F (KC-10A and KDC-10), DC-10-40, DC-10-40F, MD-10-10F, MD-10-30F, MD-11, and MD-11F airplanes. AD 2013-08-23 required adding design features to detect electrical faults and to detect a pump running in an empty fuel tank. This new AD would clarify certain requirements and remove a terminating action. This new AD would also provide an optional method of compliance for the proposed actions. This AD was prompted by a determination that it is necessary to clarify the requirements for the design features and to remove a terminating action for certain inspections. We are issuing this AD to reduce the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

DATES: This AD is effective April 15, 2016.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of April 15, 2016.

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, CA 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; 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-2015-0248.

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-2015-0248; 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: Serj Harutunian, Aerospace Engineer, Propulsion Branch, ANM-140L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 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 to supersede AD 2013-08-23, Amendment 39-17441 (78 FR 24037, April 24, 2013). AD 2013-08-23 applied to all The Boeing Company Model DC-10-10, DC-10-10F, DC-10-15, DC-10-30, DC-10-30F (KC-10A and KDC-10), DC-10-40, DC-10-40F, MD-10-10F, MD-10-30F, MD-11, and MD-11F airplanes. The NPRM published in the Federal Register on March 27, 2015 (80 FR 16321). The NPRM was prompted by a determination that it is necessary to clarify the requirements for the design features and to remove a terminating action for certain inspections. The NPRM proposed to clarify certain requirements and remove a terminating action. The NPRM also proposed to provide an optional method of compliance for the proposed actions. We are issuing this AD to reduce the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM (80 FR 16321, March 27, 2015) and the FAA's response to each comment.

Support for the NPRM (80 FR 16321, March 27, 2015)

Boeing stated that it supports the NPRM (80 FR 16321, March 27, 2015).

Request for Clarification

FedEx requested that we clarify paragraph (h)(3) of the proposed AD (80 FR 16321, March 27, 2015) because it is unclear and confusing.

FedEx explained that paragraphs (h)(1) and (h)(2) of the proposed AD (80 FR 16321, March 27, 2015) propose to mandate compliance with Boeing Alert Service Bulletin MD11-28A133, dated June 5, 2014; Boeing Service Bulletin MD11-28-137, dated June 24, 2014; Boeing Alert Service Bulletin DC10-28A253, dated June 5, 2014; and Boeing Service Bulletin DC10-28-256, dated June 24, 2014. This service information, in addition to describing procedures for airframe modifications, specifies revising Airworthiness Limitation Instructions (ALI) 28-1, Trijet Fuel Pump Fault Current Detector Functional Check; ALI 28-2, DC-10/KDC-10 Uncommanded On Circuit Functional Check; ALI 28-

3, MD-10 Uncommanded On Circuit Functional Check; and ALI 28-4, MD-11 Uncommanded On Circuit Functional Check, Boeing Trijet Special Compliance Item Report MDC-02K1003, Revision M, dated July 25, 2014. FedEx stated that paragraph (h)(3) of the proposed AD creates confusion because Appendixes B and C of Boeing Trijet Special Compliance Item Report MDC-02K1003, Revision M, dated July 25, 2014, also change/affect Critical Design Configuration Control Limitation (CDCCL) 20-9, Trijet Wing Root Area Lightning Protection, (Boeing Service Bulletin DC10-28-262, Revision 1, dated June 9, 2010, which was mandated by AD 2010-21-13, Amendment 39-16473 (75 FR 63040, October 14, 2010), and has nothing to do with the intent of this NPRM, which supersedes AD 2013-08-23, Amendment 39-17441 (78 FR 24037, April 24, 2013).

FedEx also noted that paragraph (h)(3) of the proposed AD (80 FR 16321, March 27, 2015) states that revising the maintenance or inspection program terminates the requirements in paragraphs (g) and (h) of AD 2008-06-21 R1, Amendment 39-16100 (74 FR 61504, November 25, 2009). FedEx requested that we identify the requirements in AD 2008-06-21 R1 that would be terminated. FedEx reasoned that paragraphs (g) and (h) of AD 2008-06-21 R1 cannot be terminated because CDCCLs and ALIs are constantly revised or new items added to meet safety requirements, so latent failures must be addressed in the fuel system design.

We agree that clarification is necessary. AD 2010-21-13, Amendment 39-16473 (75 FR 63040, October 14, 2010), requires installing a support bracket and coupler on the left and right wing-to-fuselage transition, and metallic overbraid on the left and right leading edge wire assembly but it does not require revising the maintenance or inspection program to incorporate a corresponding CDCCL. Paragraph (h)(3) of this AD includes incorporating CDCCL 20-9, Trijet Wing Root Area Lightning Protection, as part of the maintenance or inspection program. Notwithstanding any other maintenance or operational requirements, components that have been identified as airworthy or installed on the affected airplanes before accomplishing the revision of the airplane maintenance or inspection program specified in this AD, do not need to be reworked in accordance with the CDCCLs. However, once the airplane maintenance or inspection program has been revised as required by this AD, future maintenance actions on these components must be done in accordance with the CDCCLs.

In regards to FedEx's comment on terminating action, we note that AD 2008-06-21 R1, Amendment 39-16100 (74 FR 61504, November 25, 2009) requires incorporation of Boeing Trijet Special Compliance Item Report, MDC-02K1003, Revision C, dated July 24, 2007. Paragraph (h)(3) of this AD requires a revision of the maintenance or inspection program to include Boeing Trijet Special Compliance Item (SCI) Report MDC-02K1003, Revision M, dated July 25, 2014. We are requiring the actions specified in Appendixes B, C, and D of Boeing Trijet Special Compliance Item Report MDC-02K1003, Revision M, dated July 25, 2014, because they include the latest CDCCLs, ALIs, and short-term extensions. Therefore, accomplishing the revision required by paragraph (h)(3) of this AD would terminate the requirements in paragraphs (g) and (h) of AD 2008-06-21 R1. Accomplishing paragraph (h)(3) of this AD would replace the existing requirements with updated requirements. We have not changed this AD in this regard.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD as proposed, except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (80 FR 16321, March 27, 2015) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (80 FR 16321, March 27, 2015).

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 the following service information.

- Boeing Alert Service Bulletin DC10-28A253, dated June 5, 2014; and Boeing Alert Service Bulletin MD11-28A133, dated June 5, 2014. This service information describes procedures for replacing the fuel pump control relays with fault current detectors and changing the fuel tank boost/transfer pump wire termination.
- Boeing Service Bulletin DC10-28-256, dated June 24, 2014; and Boeing Service Bulletin MD11-28-137, dated June 24, 2014; which describe procedures for changing the fuel pump control and indication system wiring.
- Boeing Trijet Special Compliance Item Report MDC-02K1003, Revision M, including Appendices A through D, dated July 25, 2014, which includes CDCCLs, ALIs, and short-term extensions in Appendices B, C, and D, respectively.

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 341 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
Installing design features using a method approved by the FAA [retained action from AD 2013-08-23, Amendment 39-17441 (78 FR 24037, April 24, 2013)]	152 work-hours × $85 per hour = $12,920	$137,500	$150,420	$51,923,220
Installing design features using service information specified in paragraph (h) of this AD (including revising the maintenance/inspection program) [new option of this AD]	98 work-hours × $85 per hour = $8,330	109,000	117,330	40,009,530

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 have determined that 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 removing Airworthiness Directive (AD) 2013-08-23, Amendment 39-17441 (78 FR 24037, April 24, 2013), and adding the following new AD:

2016-04-16 The Boeing Company: Amendment 39-18410; Docket No. FAA-2015-0248; Directorate Identifier 2014-NM-143-AD.

(a) Effective Date

This AD is effective April 15, 2016.

(b) Affected ADs

(1) This AD replaces AD 2013-08-23, Amendment 39-17441 (78 FR 24037, April 24, 2013).
(2) This AD affects AD 2008-06-21 R1, Amendment 39-16100 (74 FR 61504, November 25, 2009).
(3) This AD affects AD 2002-13-10, Amendment 39-12798 (67 FR 45053, July 8, 2002).
(4) This AD affects AD 2011-11-05, Amendment 39-16704 (76 FR 31462, June 1, 2011).

(c) Applicability

This AD applies to all The Boeing Company airplanes identified in paragraphs (c)(1) and (c)(2) of this AD, certificated in any category.
(1) Model DC-10-10, DC-10-10F, DC-10-15, DC-10-30, DC-10-30F (KC-10A and KDC-10), DC-10-40, DC-10-40F airplanes.
(2) Model MD-10-10F, MD-10-30F, MD-11, and MD-11F airplanes.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a fuel system review conducted by the manufacturer. We are issuing this AD to reduce the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

(f) Compliance

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

(g) Retained Criteria for Operation, With Clarifications and New Compliance Time

This paragraph restates the actions required by paragraph (g) of AD 2013-08-23, Amendment 39-17441 (78 FR 24037, April 24, 2013), with clarification of actions for airplanes with auxiliary fuel tanks removed, clarification of the pumps that must have a protective device installed, and a new compliance time. Except as provided by paragraph (h) of this AD: As of 48 months after the effective date of this AD, no person may operate any airplane affected by this AD unless an amended type certificate or supplemental type certificate that incorporates the design features and requirements

described in paragraphs (g)(1) through (g)(4) of this AD has been approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA, and those design features are installed on the airplane to meet the criteria specified in section 25.981(a) and (d) of the Federal Aviation Regulations (14 CFR 25.981(a) and (d), at Amendment 25-125 (http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgFAR.nsf/0/339DAEE3E0A6379D862574CF00641951?OpenDocument)). For airplanes on which Boeing-installed auxiliary fuel tanks are removed, the actions specified in this AD for the auxiliary fuel tanks are not required.

(1) For all airplanes: Each electrically powered alternating current (AC) fuel pump installed in any fuel tank that normally empties during flight and each pump that is partially covered by a lowering fuel level–such as main tanks, center wing tanks, auxiliary fuel tanks installed by the airplane manufacturer, and tail tanks–must have a protective device installed to detect electrical faults that can cause arcing and burn through of the fuel pump housing and pump electrical connector. The same device must shut off the pump by automatically removing electrical power from the pump when such faults are detected. When a fuel pump is shut off resulting from detection of an electrical fault, the device must stay latched off, until the fault is cleared through maintenance action and the pump is verified safe for operation.

(2) For airplanes with a 2-person flightcrew: Additional design features, if not originally installed by the airplane manufacturer, must be installed to meet 3 criteria: To detect a running fuel pump in a tank that is normally emptied during flight, to provide an indication to the flightcrew that the tank is empty, and to automatically shut off that fuel pump. The prospective pump indication and shutoff system must automatically shut off each pump in case the flightcrew does not shut off a pump running dry in an empty tank within 60 seconds after each fuel tank is emptied. An airplane flight manual supplement (AFMS) that includes flightcrew manual pump shutoff procedures in the Limitations section of the AFMS must be submitted to the Los Angeles ACO, FAA, for approval.

(3) For airplanes with a 3-person flightcrew: Additional design features, if not originally installed by the airplane manufacturer, must be installed to detect when a fuel pump in a tank that is normally emptied during flight is running in an empty fuel tank, and to provide an indication to the flightcrew that the tank is empty. The flight engineer must manually shut off each pump running dry in an empty tank within 60 seconds after the tank is emptied. The AFMS Limitations section must be revised to specify that this pump shutoff must be done by the flight engineer.

(4) For all airplanes with tanks that normally empty during flight: Separate means must be provided to detect and shut off a pump that was previously commanded to be shut off automatically or manually but remained running in an empty tank during flight.

(h) New Optional Method of Compliance

In lieu of doing the requirements of paragraph (g) of this AD, do the applicable actions specified in paragraphs (h)(1), (h)(2), and (h)(3) of this AD.

(1) For MD-11 and MD-11F airplanes: Do the actions specified in paragraphs (h)(1)(i) and (h)(1)(ii) of this AD.

(i) As of 48 months after the effective date of this AD, change the fuel pump control and indication system wiring, in accordance with the Accomplishment Instructions of Boeing Service Bulletin MD11-28-137, dated June 24, 2014.

(ii) Prior to or concurrently with accomplishing the actions specified in paragraph (h)(1)(i) of this AD: Replace the fuel pump control relays with fault current detectors, and change the fuel tank boost/transfer pump wire termination, in accordance with Accomplishment Instructions of Boeing Alert Service Bulletin MD11-28A133, dated June 5, 2014.

(2) For Model DC-10-10, DC-10-10F, DC-10-15, DC-10-30, DC-10-30F (KC-10A and KDC-10), DC-10-40, DC-10-40F, MD-10-10F, and MD-10-30F airplanes: Do the actions specified in paragraphs (h)(2)(i) and (h)(2)(ii) of this AD.

(i) As of 48 months after the effective date of this AD, change the fuel pump control and indication system wiring, in accordance with the Accomplishment Instructions of Boeing Service Bulletin DC10-28-256, dated June 24, 2014.

(ii) Prior to or concurrently with accomplishing the actions specified in paragraph (h)(2)(i) of this AD: Replace the fuel pump control relays with fault current detectors, and change the fuel tank boost/transfer pump wire termination, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin DC10-28A253, dated June 5, 2014.

(3) For all airplanes: Within 30 days after accomplishing the actions required by paragraph (h)(1) or (h)(2) of this AD, or within 30 days after the effective date of this AD, whichever occurs later, revise the maintenance or inspection program, as applicable, to incorporate the Critical Design Configuration Control Limitations (CDCCLs), Airworthiness Limitation Instructions (ALIs), and short-term extensions specified in Appendices B, C, and D of Boeing Trijet Special Compliance Item (SCI) Report MDC-02K1003, Revision M, dated July 25, 2014. The initial compliance time for accomplishing the actions specified in the ALIs is at the later of the times specified in paragraphs (h)(3)(i) and (h)(3)(ii) of this AD. Revising the maintenance or inspection program required by this paragraph terminates the requirements in paragraphs (g) and (h) of AD 2008-06-21 R1, Amendment 39-16100 (74 FR 61504, November 25, 2009).

(i) At the applicable time specified in Appendix C of Boeing Trijet SCI Report MDC-02K1003, Revision M, dated July 25, 2014, except as provided by Appendix D of Boeing Trijet SCI Report MDC-02K1003, Revision M, dated July 25, 2014.

(ii) Within 30 days after accomplishing the actions required by paragraph (h)(1) or (h)(2) of this AD, as applicable; or within 30 days after the effective date of this AD; whichever occurs later.

(i) No Alternative Actions, Intervals, or CDCCLs

If the option in paragraph (h)(3) of this AD is accomplished: After the maintenance or inspection program has been revised as provided by paragraph (h)(3) of this AD, no alternative actions (e.g., inspections), intervals, or CDCCLs may be used unless the actions, intervals, or CDCCLs are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (k) of this AD.

(j) Compliance Time Extension in Related ADs

Accomplishment of the actions specified in paragraphs (h)(1), (h)(2), and (h)(3) of this AD, as applicable, extends the 18-month repetitive inspections and tests required by paragraph (a) of AD 2002-13-10, Amendment 39-12798 (67 FR 45053, July 8, 2002); and the 18-month repetitive inspections required by paragraph (j) of AD 2011-11-05, Amendment 39-16704 (76 FR 31462, June 1, 2011); to 24-month intervals for pumps affected by those ADs, regardless if the pump is installed in a tank that normally empties, provided the remaining actions required by those two ADs have been accomplished.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles 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 (l) 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 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. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) AMOCs approved for AD 2013-08-23, Amendment 39-17441 (78 FR 24037, April 24, 2013), are approved as AMOCs for the corresponding provisions of this AD.

(l) Related Information

For more information about this AD, contact Serj Harutunian, Aerospace Engineer, Propulsion Branch, ANM-140L, FAA, Los Angeles ACO, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5254; fax: 562-627-5210; email: serj.harutunian@faa.gov.

(m) 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 DC10-28A253, dated June 5, 2014.

(ii) Boeing Alert Service Bulletin MD11-28A133, dated June 5, 2014.

(iii) Boeing Service Bulletin DC10-28-256, dated June 24, 2014.

(iv) Boeing Service Bulletin MD11-28-137, dated June 24, 2014.

(v) Boeing Trijet Special Compliance Item Report MDC-02K1003, Revision M, including Appendices A through D, dated July 25, 2014.

(3) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, CA 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; Internet https://www.myboeingfleet.com.

(4) You may view this service information at 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 February 8, 2016.

Michael Kaszycki,

Acting Manager, Transport Airplane Directorate,

Aircraft Certification Service.