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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0900; Product Identifier 2017-NM-055-AD; Amendment 39-19208; AD 2018-04-12]

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 737-100, -200, -200C, -300, -400, -500 series airplanes. This AD was prompted by a report of wire damage on a fuel boost pump power cable, and a separate report of a fuel tank explosion on a similarly equipped airplane. This AD requires the installation of new shielded wire bundles and convoluted liners within fuel tank conduits, and revision of the maintenance or inspection program, as applicable, to incorporate certain airworthiness limitations (AWLs). We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective April 9, 2018.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of April 9, 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 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0900.

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-2017-0900; 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: Serj Harutunian, Aerospace Engineer, Propulsion Section, FAA, Los Angeles ACO Branch, 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 by adding an AD that would apply to all The Boeing Company Model 737-100, -200, -200C, -300, -400, -500 series airplanes. The NPRM published in the Federal Register on September 26, 2017 (82 FR 44744). The NPRM was prompted by a report of wire damage on a fuel boost pump power cable, and a separate report of a fuel tank explosion on a similarly equipped airplane. The NPRM proposed to require the installation of new shielded wire bundles and convoluted liners within fuel tank conduits, and revision of the maintenance or inspection program, as applicable, to incorporate certain AWLs.

We are issuing this AD to prevent electrical arcing between the fuel boost pump power cable wiring and the surrounding conduit, which could lead to arc-through of the conduit, consequent fire or explosion of the fuel tank, and subsequent loss of the airplane.

This AD is further rulemaking following the interim action of AD 2007-24-02, Amendment 39-15268 (72 FR 65446, November 21, 2007) (“AD 2007-24-02”), which applies to all Boeing Model 737-100, -200, -200C, -300, -400, -500 series airplanes. AD 2007-24-02 was prompted by reports of a fuel tank explosion on a Boeing Model 727-200F airplane and chafed wires and a damaged wiring sleeve on a fuel boost pump power cable in a Boeing Model 737-300 airplane. AD 2007-24-02 requires repetitive detailed inspections for damage of the electrical wire and sleeve that run to the fuel boost pump through a conduit in the fuel tank, to address potential electrical arcing between the wiring and the surrounding conduit that could result in arc-through of the conduit, consequent fire or explosion of the fuel tank, and subsequent loss of the airplane. The preamble to AD 2007-24-02 explains that its requirements are considered “interim action” and that we might consider further rulemaking. We now have determined that further rulemaking is necessary, and this AD follows from that determination.

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.

Support for the NPRM

The Air Line Pilots Association, International (ALPA) and The Boeing Company concurred with the proposed AD.

Request To Not Require Replacement or To Extend Compliance Time

The commenter, Hannes Merrick, requested that the FAA consider not requiring wire bundle replacement if faults are not found during inspection of the affected wire bundles, or at a minimum to extend the compliance time to allow for more time to accomplish the replacement required by the proposed AD. We infer that the commenter would regard the existing repetitive inspections as

adequate for maintaining an acceptable level of safety with the current wire bundle configuration. The commenter did not provide substantiating data for extending the compliance time.

We do not agree with the commenter's requests. Our experience has shown that these specific wiring design changes are more effective than repetitive inspections in preventing unsafe conditions. The design change required by this AD adds an extra protective layer that is necessary to prevent wire chafing in specific areas of the airplane that are identified in Boeing Alert Service Bulletin 737-28A1273, Revision 1, dated March 14, 2017. We have also determined that the compliance time specified in this AD is appropriate to address the unsafe condition described in this AD. However, under the provisions of paragraph (l) of this AD, we will consider requests for approval of an extension of the compliance time if sufficient data are submitted to substantiate that the change would provide an acceptable level of safety. We have not changed this AD in this regard.

Effects of Winglets on Accomplishment of the Proposed Actions

Aviation Partners Boeing stated that the installation of winglets per supplemental type certificate (STC) ST01219SE does not affect the accomplishment of the manufacturer's service instructions.

We agree with the commenter that STC ST01219SE does not affect the accomplishment of the manufacturer's service instructions. Therefore, the installation of STC ST01219SE does not affect the ability to accomplish the actions required by this AD. We have not changed this AD in this regard.

New Service Information

In paragraph (h) of the proposed AD we referred to Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, dated May 2016, as an appropriate source of service information for incorporating certain airworthiness limitations. After the NPRM was issued, we reviewed Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, dated November 2017, which also contains the airworthiness limitations cited in this AD. The November 2017 document includes a change to airworthiness limitation 28-AWL-29, which is not one of the airworthiness limitations cited in this AD. We have revised paragraph (h) of this AD to also refer to Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, dated November 2017, as an appropriate source of service information for incorporating the airworthiness limitations cited in this AD.

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 change 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.

Related Service Information Under 1 CFR Part 51

We reviewed the following service information.

- Boeing Alert Service Bulletin 737-28A1273, Revision 1, dated March 14, 2017. This service information describes procedures for the installation of new shielded wire bundles and convoluted liners within fuel tank conduits.

- Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, dated May 2016 and November 2017. This service information describes new AWLs for inspecting the fuel tank wiring and conduits. These documents are distinct since the November 2017 document includes a change to airworthiness limitation 28-AWL-29 (which is not required by this AD).

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 499 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
Installation	154 work-hours × \$85 per hour = \$13,090	\$5,561	\$18,651	\$9,306,849
Incorporation of Airworthiness Limitations	1 work-hour × \$85 per hour = \$85	0	85	42,415

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):



FAA
Aviation Safety

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

2018-04-12 The Boeing Company: Amendment 39-19208; Docket No. FAA-2017-0900; Product Identifier 2017-NM-055-AD.

(a) Effective Date

This AD is effective April 9, 2018.

(b) Affected ADs

This AD affects AD 2007-24-02, Amendment 39-15268 (72 FR 65446, November 21, 2007) ("AD 2007-24-02").

(c) Applicability

This AD applies to all The Boeing Company Model 737-100, -200, -200C, -300, -400, -500 series airplanes, certificated in any category.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of chafed wires and a damaged wiring sleeve on a fuel boost pump power cable, and an on-ground fuel tank explosion. We are issuing this AD to prevent electrical arcing between the fuel boost pump power cable wiring and the surrounding conduit, which could lead to arc-through of the conduit, consequent fire or explosion of the fuel tank, and subsequent loss of the airplane.

(f) Compliance

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

(g) Required Actions

(1) For Group 1 and Group 2 airplanes identified in Boeing Alert Service Bulletin 737-28A1273, Revision 1, dated March 14, 2017: Except as required by paragraph (j) of this AD, at the applicable times specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 737-28A1273, Revision 1, dated March 14, 2017, do all applicable actions identified as required for compliance ("RC") in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1273, Revision 1, dated March 14, 2017.

(2) For airplanes identified as Group 3 in Boeing Alert Service Bulletin 737-28A1273, Revision 1, dated March 14, 2017: Within 120 days after the effective date of this AD, inspect the airplane and

do all applicable corrective actions using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(h) Revision of Maintenance or Inspection Program

Within 60 days after the effective date of this AD: Revise the maintenance or inspection program, as applicable, to incorporate the applicable Airworthiness Limitations (AWLs) from Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, dated May 2016 or November 2017, as identified in paragraphs (h)(1) and (h)(2) of this AD.

(1) 28-AWL-18 and 28-AWL-26, "Fuel Boost Pump Wires In Conduit Installation—In Fuel Tank," for Boeing Model 737-100, -200, -200C series airplanes.

(2) 28-AWL-18 and 28-AWL-25, "Fuel Boost Pump Wires In Conduit Installation—In Fuel Tank," for Boeing Model 737-300, -400, -500 series airplanes.

(i) No Alternative Critical Design Configuration Control Limitations (CDCCLs)

After the maintenance or inspection program, as applicable, has been revised as required by paragraph (h) of this AD, no alternative CDCCLs may be used unless the CDCCLs are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (l) of this AD.

(j) Exceptions to Service Information Specifications

For purposes of determining compliance with the requirements of this AD: Where Boeing Alert Service Bulletin 737-28A1273, Revision 1, dated March 14, 2017, uses the phrase "the original issue date of this service bulletin," this AD requires using "after the effective date of this AD."

(k) Terminating Action for Requirements of AD 2007-24-02

Accomplishment of the actions required by paragraph (g) of this AD terminates all requirements of AD 2007-24-02.

(l) 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 (m) 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 (l)(4)(i) and (l)(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.

(m) Related Information

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

(n) 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 737-28A1273, Revision 1, dated March 14, 2017.

(ii) Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, dated May 2016.

(iii) Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, dated November 2017.

(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 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(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 15, 2018.

Michael Kaszycki,
Acting Director, System Oversight Division,
Aircraft Certification Service.