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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-28661; Directorate Identifier 2007-NM-013-AD; Amendment 39-16785; AD 2011-18-03]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 737-600, -700, -700C, -800, and -900 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD requires installation of an automatic shutoff system for the center tank fuel boost pumps, and installation of a placard in the airplane flight deck if necessary. This AD also requires revisions to the Limitations and Normal Procedures sections of the airplane flight manual to advise the flightcrew of certain operating restrictions for airplanes equipped with an automated center tank fuel pump shutoff control. This AD further requires installation of a secondary control relay for the electrical control circuit of each of the two center tank fuel boost pumps. Additionally, this AD requires a revision to the maintenance program to incorporate Airworthiness Limitation (AWL) No. 28-AWL-23. This AD also provides an option of installation and maintenance of universal fault interrupters using a certain supplemental type certificate, which terminates certain requirements of this AD. This AD was prompted by fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent center tank fuel pump operation with continuous low pressure, which could lead to friction sparks or overheating in the fuel pump inlet that could create a potential ignition source inside the center fuel tank. These conditions, in combination with flammable fuel vapors, could result in a center fuel tank explosion and consequent loss of the airplane.

DATES: This AD is effective September 30, 2011.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of September 30, 2011.

ADDRESSES: For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. For TDG Aerospace information

identified in this AD, contact TDG Aerospace, Inc., 545 Corporate Drive, Escondido, California 92029; telephone 760-466-1040; fax 760-466-1038; Internet <http://www.tdgaerospace.com>; e-mail info@tdgaerospace.com.

You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; 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: Tak Kobayashi, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; phone: (425) 917-6499; fax: (425) 917-6590; e-mail: Takahisa.Kobayashi@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to the specified products. That SNPRM published in the Federal Register on March 8, 2011 (76 FR 12634). The original NPRM (72 FR 37479, July 10, 2007) proposed to require installation of an automatic shutoff system for the center tank fuel boost pumps, installation of a placard in the airplane flight deck if necessary, and concurrent modification of the P5-2 fuel control module assembly. The original NPRM also proposed to require revisions to the Limitations and Normal Procedures sections of the airplane flight manual (AFM) to advise the flightcrew of certain operating restrictions for airplanes equipped with an automated center tank fuel pump shutoff control. Additionally, the original NPRM proposed to require a revision to the Airworthiness Limitations (AWL) section of the Instructions for Continued Airworthiness (ICA) to incorporate AWL No. 28-AWL-19 and No. 28-AWL-23. The original NPRM further proposed to require installation of a secondary control relay for the electrical control circuit of each of the two center tank fuel boost pumps. The SNPRM proposed to revise the original NPRM by adding airplanes, adding additional operational testing of the automatic shutoff system for certain airplanes, removing the requirement for incorporating AWL No. 28-AWL-19 into the AWL section of the ICA, and adding an option of installation and maintenance of universal fault interrupters using a certain supplemental type certificate.

Comments

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

Support for SNPRM

Delta Airlines (Delta) stated that it has no objections to the SNPRM.

Request To Correct Service Information Citation

Boeing requested that we revise the fifth paragraph under the "Explanation of Additional Changes Made to this Supplemental NPRM" section of the SNPRM to correct the model designation portion of the document citation provided in that paragraph.

Although we agree that there was a typographical error in the document citation specified in the "Explanation of Additional Changes Made to this Supplemental NPRM" section of the SNPRM, we do not agree to revise this AD in this regard, as that section is not restated in the final rule. No change to the AD is necessary in this regard.

Request To Include Definition in Paragraph (b) of the SNPRM

Boeing requested that we revise paragraph (b) of the SNPRM to properly define "2001-08-24" as an airworthiness directive. We agree and have revised paragraph (b) of this AD accordingly.

Request To Revise Conditions Specified in Paragraph (h) of the SNPRM

Boeing requested that we revise paragraph (h) of the SNPRM to remove the last sentence of the paragraph, which specifies the conditions when a placard is not necessary. Boeing stated that this sentence is confusing and possibly contradictory, and that the placard requirement provided in those paragraphs is well defined without the use of this sentence.

We agree partially. We agree to remove the first condition specified in the second to last sentence of paragraph (h) of this AD, which states, "If automatic shutoff systems are installed concurrently on all airplanes in an operator's fleet in accordance with paragraph (g) of this AD * * *, the placard installation specified in this paragraph is not necessary." If the automatic shutoff system is concurrently installed on all airplanes, there will be no airplanes on which a placard would be required to be installed. Therefore, this condition is unnecessary. We have revised paragraph (h) of this AD to remove this condition.

We do not agree to remove the second condition in the second to last sentence of paragraph (h) of this AD. That condition provides an option to operators that prefer not to install a placard on any airplane in their fleet. If an operator intends to maintain fuel usage restrictions specified in AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003), and AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001), for all airplanes in the fleet until the automatic shutoff systems are installed on all of those airplanes, the operator is not required to install a placard, even after installing the automatic shutoff system on any airplane in its fleet. We have determined that this option should remain available to operators, and have not revised paragraph (h) of this AD to remove this condition. We also have not revised paragraph (s) of this AD to remove the same condition specified in the second to last sentence of paragraph (h) of this AD.

Also, we acknowledge that a reference to AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001), was inadvertently omitted in the last sentence of paragraph (h) of the SNPRM. We have added a reference to AD 2001-08-24 in paragraph (h) of this AD, and provided additional clarification in the "Additional Changes Made to this AD" section of this AD.

Request To Revise Proposed Wording of Placard in Paragraph (h) of the SNPRM

Southwest Airlines (Southwest) requested that the SNPRM be revised to allow alternative wording for the placard required by paragraph (h) of the SNPRM. Southwest stated that it has a placard adjacent to the pilot's primary flight display on all of its airplanes that are not equipped with an automatic shutoff system, which reads, "AD 2002-19-52 fuel usage restrictions required." Southwest reported that it is unable to find any language in either AD 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002), or AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003), that requires the placard text proposed in paragraph (h) of the SNPRM.

We agree partially. We have determined that clarification of paragraph (h) of this final rule is necessary to prevent inadvertent removal of the placard required by paragraph (h) of this AD and by paragraph (e) of AD 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002). As discussed in the preamble of the SNPRM, AD 2002-19-52 requires installation of a placard, and provides an optional terminating action that allows removal of that placard. The intent of the placard installation required by AD 2002-19-52 is to address mixed operation of the airplanes with and without the optional terminating action accomplished within an operator's fleet. After issuance of AD 2002-19-52, we issued AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003), to mandate fuel usage restrictions identical to those required by AD 2002-19-52, to address an unsafe condition not related to AD 2002-19-52. Airworthiness Directive 2002-24-51 did not require installation of a placard, because terminating action for that AD was not available at the time, and, therefore, there was no concern about mixed fleet operation.

We do not agree to revise the placard wording required by paragraph (h) of this AD. However, if a placard that refers to AD 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002), already exists on an airplane, we have determined that use of that placard does meet the placard installation requirement of paragraph (h) of this AD. Therefore, we have revised paragraph (h) of this AD to state that installation of a placard in accordance with paragraph (e) of AD 2002-19-52 is acceptable for compliance with the requirements of paragraph (h) of this AD, and that the placard may be removed from an airplane only once the terminating action specified in paragraph (g) of AD 2002-19-52 and installation of an automatic shutoff system required by paragraph (g) of this AD have been accomplished.

Request To Reference Latest AWL Revision in Paragraph (k) of the SNPRM

Boeing requested that we revise paragraph (k) of the SNPRM to reference the latest revision of the maintenance planning data (MPD) document. Boeing stated that the document specified in paragraph (k) of the SNPRM has been revised, and that the applicable subsection has changed from "G" to "E.1." in Revision February 2011.

We agree that this AD should refer to the current revision of the MPD document specified in paragraph (k) of this AD. Therefore, we have revised paragraph (k) of this AD to refer to Subsection E, AWLs–Fuel Systems, of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of the Boeing 737-600/700/800/900 MPD Document, D626A001-CMR, Revision March 2011.

We have also added new paragraph (t) to this AD (and re-identified subsequent paragraphs accordingly) to give credit to operators that accomplish the AWL revision required by paragraph (k) of this AD before the effective date of this AD using any of the following revisions of Subsection G, Airworthiness Limitations–Fuel System AWLs, of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of the Boeing 737-600/700/800/900 MPD Document, D626A001-CMR:

- Revision March 2008
- Revision April 2008
- Revision June 2008
- Revision February 2009
- Revision March 2009
- Revision August 2009
- Revision September 2009
- Revision November 2009
- Revision January 2010
- Revision May 2010
- Revision July 2010
- Revision August 2010

Paragraph (t) of this AD also provides credit to operators that accomplish the AWL revision required by paragraph (k) of this AD before the effective date of this AD using Subsection E, AWLs–Fuel Systems, of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of the Boeing 737-600/700/800/900 MPD Document, D626A001-CMR, Revision February 2011.

Request To Clarify Terminating Action for Paragraphs (m) and (n) of SNPRM

Delta requested that we revise paragraphs (m) and (n) of the SNPRM to clarify that accomplishing the actions specified in paragraph (s) of the SNPRM terminates the actions required in paragraphs (m) and (n) of the SNPRM. Delta pointed out that paragraph (s) of the SNPRM terminates only paragraphs (g) through (k) of the SNPRM, and not paragraphs (m) and (n) of the SNPRM. Delta stated that operators planning to comply with the proposed requirements by installing universal fault interrupters (UFIs) in accordance with paragraph (s) of the SNPRM will not accomplish paragraphs (g), (h), and (i) of the SNPRM. Therefore, Delta asserted that, as the SNPRM is currently written, operators that do not do the actions specified in paragraphs (g), (h), and (i) of the SNPRM will not be able to comply with the requirements of paragraphs (m) and (n) of the SNPRM.

We agree. Accomplishing the optional terminating action specified in paragraph (s) of this AD terminates the requirements of paragraphs (g) through (k) of this AD, making the optional terminating action specified in paragraph (s) of this AD equivalent to the actions required by paragraphs (g) through (k) of this AD. Therefore, complying with paragraph (s) of this AD meets the condition required to terminate the requirements of paragraph (a) of AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001), and paragraph (b) of AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003). We have revised paragraphs (m) and (n) of this AD to state that accomplishing the actions (i.e., optional terminating action) specified in paragraph (s) of this AD terminates the requirements of paragraph (a) of AD 2001-08-24 and paragraph (b) of AD 2002-24-51.

Request To Provide Credit for Aerospace Supplemental Type Certificate (STC)

Continental Airlines (Continental) requested that we revise the SNPRM to give credit for incorporating universal fault interrupters (UFIs) using TDG Aerospace STC ST02076LA before the effective date of the AD. Continental pointed out that paragraphs (q) and (r) of the SNPRM provide credit for actions done before the effective date of the AD using other service information.

While we do agree that installing TDG Aerospace UFIs before the effective date of this AD is acceptable for terminating certain actions required by this AD, we do not agree to revise the AD to provide specific credit for those actions. Installing TDG Aerospace UFIs, as specified in paragraph (s) of this AD, is acceptable both before and after the effective date of this AD. Operators are always permitted to accomplish the requirements of an AD at a time earlier than the specified compliance time. We have not changed the AD in this regard.

Request To Revise Paragraph (v) of the SNPRM To Add Contact Information

Delta requested that we revise paragraph (v) of the SNPRM to add contact information for TDG Aerospace. Delta pointed out that contact information for the other service information identified in the SNPRM is provided, but not for TDG Aerospace.

We agree partially. We do not agree to revise paragraph (v) of the SNPRM, because that paragraph is not restated in this final rule. However, we do agree to provide contact information for TDG Aerospace. We have revised the ADDRESSES section of this AD to include this contact information.

Additional Changes Made to This AD

We have revised paragraph (h) of this AD to clarify when a placard is not necessary. We have determined that the second to last sentence of paragraph (h) of this AD should also refer to AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001), for clarity. Operators that choose to maintain the fuel usage restrictions of AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003), for all airplanes in their fleet do not meet the condition to terminate AD 2002-24-51 and AD 2001-08-24 until the actions required by paragraphs (g) and (i) of this AD are accomplished on all airplanes in their fleet. Therefore, those operators are otherwise required to comply with the requirements of AD 2001-08-24, regardless of whether that AD is mentioned in paragraph (h) of this AD. Therefore, this change does not increase the burden on operators.

We have revised paragraph (s) of this AD to specify that installation of TDG Aerospace UFIs, as provided in that paragraph, must be done in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA, because referring to the STC now violates Office of the Federal Register (OFR) policies for approval of optional materials "incorporated by reference" in rules. We have added Note 5 to this AD to specify that additional guidance on installing TDG Aerospace UFIs can be found in TDG Aerospace STC ST02076LA.

We have also revised paragraph (s) of this AD to clarify the time limit for doing the optional terminating action. Since paragraph (s) of this AD terminates the actions required by paragraphs (g) through (k) of this AD, if done, paragraph (s) of this AD must be accomplished within the earliest time specified among those paragraphs to be considered terminating action; that earliest time is 36 months.

Additionally, we have revised paragraph (s) of this AD to allow the use of alternative placard wording that is approved by an appropriate FAA Principal Operations Inspector, instead of requiring approval of alternative placard wording as an alternative method of compliance in accordance with paragraph (u) of this AD.

We have also revised paragraph (s) of this AD by adding a statement to allow installation of a placard in accordance with paragraph (e) of AD 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002).

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the 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 SNPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the SNPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Costs of Compliance

We estimate that this AD affects 685 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	Number of U.S.-registered airplanes	Cost on U.S. operators
Installation of the automatic shutoff system (Boeing Alert Service Bulletin 737-28A1206)	Between 94 and 117 (depending on airplane configuration) work-hours X \$85 per hour = Between \$7,990 and \$9,945	Between \$22,994 and \$30,197 (depending on airplane configuration)	Between \$30,984 and \$40,142	538	Between \$16,669,392 and \$21,596,396
Placard installation, if necessary	1 work-hour X \$85 per hour = \$85	\$10	\$95	685	\$65,075
AFM revision	1 work-hour X \$85 per hour = \$85	None	\$85	538	\$45,730
Installation of secondary pump control relays (Boeing Alert Service Bulletin 737-28A1248)	68 work-hours X \$85 per hour = \$5,780	\$3,274	\$9,054	685	\$6,201,990
AWL revision to add 28-AWL-23	1 work-hour X \$85 per hour = \$85	None	\$85	685	\$58,225

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):



2011-18-03 The Boeing Company: Amendment 39-16785; Docket No. FAA-2007-28661; Directorate Identifier 2007-NM-013-AD.

Effective Date

(a) This AD is effective September 30, 2011.

Affected ADs

(b) Accomplishing certain requirements of this AD terminates certain requirements of AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001); AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003); and AD 2008-24-51, Amendment 39-15781 (74 FR 8155, February 24, 2009). Airworthiness Directive 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002), is affected by this AD.

Applicability

(c) This AD applies to the airplanes, certificated in any category, identified in paragraphs (c)(1) and (c)(2) of this AD.

(1) The Boeing Company Model 737-600, -700, -700C, -800, and -900 series airplanes, identified in Boeing Alert Service Bulletin 737-28A1206, Revision 2, dated May 21, 2009.

(2) The Boeing Company Model 737-600, -700, -700C, -800, and -900 series airplanes, identified in Boeing Alert Service Bulletin 737-28A1248, Revision 2, dated August 28, 2009.

Note 1: This AD requires revisions to certain operator maintenance documents to include new inspections. Compliance with these inspections is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by these inspections, the operator may not be able to accomplish the inspections described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval for an alternative method of compliance (AMOC) according to paragraph (u) of this AD. The request should include a description of changes to the required inspections that will ensure the continued operational safety of the airplane.

Subject

(d) Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 28, Fuel.

Unsafe Condition

(e) This AD was prompted by fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent center tank fuel pump operation with continuous low pressure, which could lead to friction sparks or overheating in the fuel pump inlet that could create a potential ignition source inside the center fuel tank. These conditions, in combination with flammable fuel vapors, could result in a center fuel tank explosion and consequent loss of the airplane.

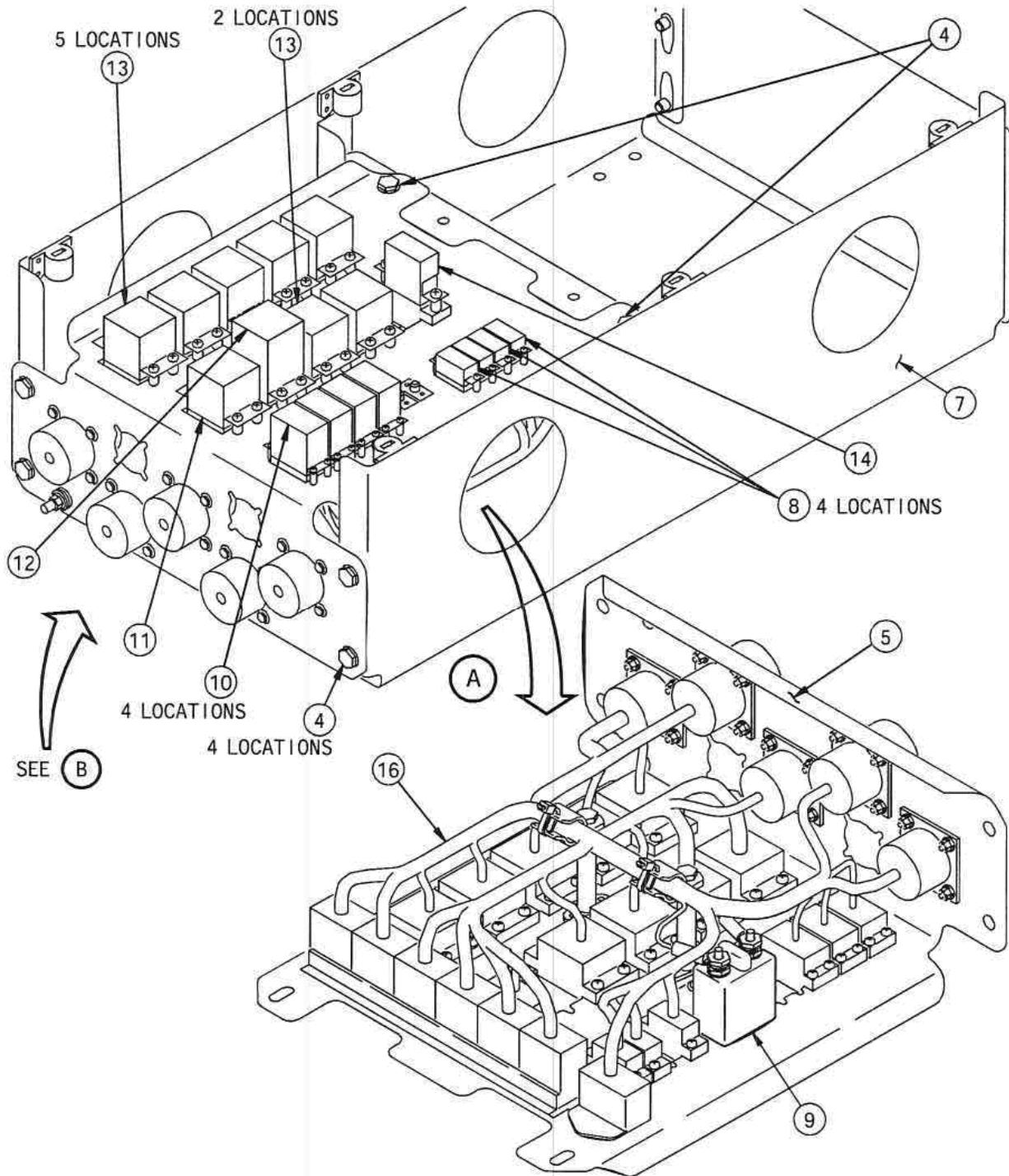
Compliance

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

Installation of Automatic Shutoff System for the Center Tank Fuel Boost Pumps

(g) For airplanes identified in paragraph 1.A.1. of Boeing Alert Service Bulletin 737-28A1206, Revision 2, dated May 21, 2009: Within 36 months after the effective date of this AD, install an automatic shutoff system for the center tank fuel boost pumps, by accomplishing all of the actions specified in Part 1 and Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1206, Revision 2, dated May 21, 2009, except that Figure 1 of this AD must be used in lieu of Sheet 2 of Figure 11 of Boeing Alert Service Bulletin 737-28A1206, Revision 2, dated May 21, 2009. If a placard has been previously installed on the airplane in accordance with paragraph (h) of this AD, the placard may be removed from the flight deck of only that airplane after the automatic shutoff system has been installed. Installing automatic shutoff systems on all airplanes in an operator's fleet, in accordance with this paragraph, terminates the placard installation required by paragraph (h) of this AD for all airplanes in an operator's fleet.

Note 2: Boeing Alert Service Bulletin 737-28A1206, Revision 2, dated May 21, 2009, refers to Boeing Component Service Bulletin 233A3202-28-03, dated January 12, 2006, as an additional source of guidance for replacing the left and right center boost pump switches of the P5-2 fuel control module assembly with new switches and changing the wiring of the P5-2 fuel control module assembly.



TYPICAL RELAY ARRANGEMENT SHOWN

Figure 1

Placard Installation for Mixed Fleet Operation

(h) Prior to or concurrently with installing an automatic shutoff system on any airplane in an operator's fleet, as required by paragraph (g) of this AD, install a placard adjacent to the pilot's primary flight display on all airplanes in the operator's fleet that are not equipped with an automatic shutoff system for the center tank fuel boost pumps. The placard must read as follows (unless alternative placard wording is approved by an appropriate FAA Principal Operations Inspector):

"AD 2002-24-51 fuel usage restrictions required."

Installing an automatic shutoff system, in accordance with paragraph (g) of this AD, terminates the placard installation required by this paragraph for only that airplane. Installing automatic shutoff systems on all airplanes in an operator's fleet, in accordance with paragraph (g) of this AD, terminates the placard installation required by this paragraph for all airplanes in an operator's fleet. If operation according to the fuel usage restrictions of AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003), and AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001), is maintained until automatic shutoff systems are installed on all airplanes in an operator's fleet, the placard installation specified in this paragraph is not required. Installation of a placard in accordance with paragraph (e) of AD 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002), is acceptable for compliance with the placard installation requirements of this paragraph; however, terminating action specified in paragraph (g) of AD 2002-19-52 and installation of an automatic shutoff system required by paragraph (g) of this AD must be accomplished on the airplane before the placard is removed from the airplane.

Airplane Flight Manual (AFM) Revision

(i) For airplanes on which Boeing Alert Service Bulletin 737-28A1206, Revision 2, dated May 21, 2009, has been accomplished: At the applicable time specified in paragraph (i)(1) or (i)(2) of this AD, do the actions specified in paragraphs (i)(3) and (i)(4) of this AD.

(1) For airplanes on which the terminating action specified in paragraph (g) of AD 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002), has been done: Concurrently with accomplishing the actions required by paragraph (g) of this AD.

(2) For airplanes on which the terminating action specified in paragraph (g) of AD 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002), has not been done: Concurrently with accomplishing the terminating action specified in paragraph (g) of AD 2002-19-52.

(3) Revise Section 1 of the Limitations section of the Boeing 737-600/-700/-700C/-800/-900 AFM to include the following statement. This may be done by inserting a copy of this AD into the AFM.

"Center Tank Fuel Pumps

Intentional dry running of a center tank fuel pump (low pressure light illuminated) is prohibited."

Note 3: For clarification purposes, the AFM limitations required by AD 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002), continue to be required until the optional terminating actions specified in paragraph (g) of AD 2002-19-52 have been done.

(4) Revise Section 3 of the Normal Procedures section of the Boeing 737-600/ -700/-700C/-800/-900 AFM to include the following statements. This may be done by inserting a copy of this AD into the AFM. Alternative statements that meet the intent of the following requirements may be used if approved by an appropriate FAA Principal Operations Inspector.

"CENTER TANK FUEL PUMPS

Alternative Method of Compliance (AMOC) to AD 2001-08-24 and AD 2002-24-51 for Aircraft With the Automated Center Tank Fuel Pump Shutoff

Center tank fuel pumps must not be "ON" unless personnel are available in the flight deck to monitor low pressure lights.

For ground operation, center tank fuel pump switches must not be positioned "ON" unless the center tank fuel quantity exceeds 1000 pounds (453 kilograms), except when defueling or transferring fuel. Upon positioning the center tank fuel pump switches "ON" verify momentary illumination of each center tank fuel pump low pressure light.

For ground and flight operations, the corresponding center tank fuel pump switch must be positioned "OFF" when a center tank fuel pump low pressure light illuminates [1]. Both center tank fuel pump switches must be positioned "OFF" when the first center tank fuel pump low pressure light illuminates if the center tank is empty.

[1] When established in a level flight attitude, both center tank pump switches should be positioned "ON" again if the center tank contains usable fuel.

Defueling and Fuel Transfer

When transferring fuel or defueling center or main tanks, the fuel pump low pressure lights must be monitored and the fuel pumps positioned to "OFF" at the first indication of the fuel pump low pressure [1].

Defueling the main tanks with passengers on board is prohibited if the main tank fuel pumps are powered [2].

Defueling the center tank with passengers on board is prohibited if the center tank fuel pumps are powered and the auto-shutoff system is inhibited [2].

[1] Prior to transferring fuel or defueling, conduct a lamp test of the respective fuel pump low pressure lights.

[2] Fuel may be transferred from tank to tank or the aircraft may be defueled with passengers on board, provided fuel quantity in the tank from which fuel is being taken is maintained at or above 2000 pounds (907 kilograms)."

Note 4: When statements identical to those in paragraphs (i)(3) and (i)(4) of this AD have been included in the general revisions of the Boeing 737-600/-700/-700C/-800/-900 AFM, the general revisions may be inserted into that AFM, and the copy of this AD may be removed from that AFM.

Installation of Secondary Pump Control Relays

(j) For airplanes identified in paragraph 1.A.1. of Boeing Alert Service Bulletin 737-28A1248, Revision 2, dated August 28, 2009: Within 60 months after the effective date of this AD, install one secondary control relay for the electrical control circuit of each of the two center tank fuel boost pumps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1248, Revision 2, dated August 28, 2009.

Airworthiness Limitations (AWL) Revision for AWL No. 28-AWL-23

(k) For airplanes identified in paragraph 1.A.1. of Boeing Alert Service Bulletin 737-28A1248, Revision 2, dated August 28, 2009: Concurrently with accomplishing the actions required by paragraph (j) of this AD, or within 30 days after the effective date of this AD, whichever occurs later, revise the maintenance program by incorporating AWL No. 28-AWL-23 of Subsection E, AWLs– Fuel Systems, of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance

Requirements (CMRs), of the Boeing 737-600/700/800/900 MPD Document, D626A001-CMR, Revision March 2011. The initial compliance time for the actions specified in AWL No. 28-AWL-23 is within 1 year after accomplishing the installation required by paragraph (j) of this AD, or within 1 year after the effective date of this AD, whichever occurs later.

No Alternative Inspections or Inspection Intervals

(l) After accomplishing the applicable actions specified in paragraph (k) of this AD, no alternative inspections or inspection intervals may be used unless the inspections or inspection intervals are approved as an AMOC in accordance with the procedures specified in paragraph (u) of this AD.

Terminating Action for AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001)

(m) Accomplishing the actions required by paragraphs (g), (h), and (i) of this AD, or accomplishing the actions specified in paragraph (s) of this AD, terminates the requirements of paragraph (a) of AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001), for Model 737-600, -700, -700C, -800, and -900 series airplanes that have the automatic shutoff system, or a TDG Aerospace, Inc., universal fault interrupter (UFI), installed. After accomplishing the actions required by paragraphs (g), (h), and (i) of this AD, or accomplishing the actions specified in paragraph (s) of this AD, the AFM limitation required by paragraph (a) of AD 2001-08-24 may be removed from the AFM for those airplanes.

Terminating Action for AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003)

(n) Accomplishing the actions required by paragraphs (g), (h), and (i) of this AD, or accomplishing the actions specified in paragraph (s) of this AD, terminates the requirements of paragraph (b) of AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003), for Model 737-600, -700, -700C, -800, and -900 series airplanes that have the automatic shutoff system, or a TDG Aerospace, Inc., UFI, installed. After accomplishing the actions required by paragraphs (g), (h), and (i) of this AD, or accomplishing the actions specified in paragraph (s) of this AD, the AFM limitations required by paragraph (b) of AD 2002-24-51 may be removed from the AFM for those airplanes.

Terminating Action for AWL Revision

(o) Incorporating AWL No. 28-AWL-23 into the maintenance program in accordance with paragraph (g)(3) of AD 2008-10-10 R1, Amendment 39-16164 (75 FR 1529, January 12, 2010), terminates the corresponding action required by paragraph (k) of this AD.

Terminating Action for AD 2008-24-51, Amendment 39-15781 (74 FR 8155, February 24, 2009)

(p) Accomplishing the actions required by paragraph (g) of this AD terminates the requirements of paragraph (f) of AD 2008-24-51, Amendment 39-15781 (74 FR 8155, February 24, 2009).

Credit for Actions Accomplished in Accordance With Previous Service Information

(q) Actions accomplished before the effective date of this AD in accordance with Boeing Alert Service Bulletin 737-28A1248, dated December 21, 2006; or Boeing Alert Service Bulletin 737-28A1248, Revision 1, dated January 9, 2008; are considered acceptable for compliance with the corresponding actions specified in paragraph (j) of this AD.

(r) Actions accomplished before the effective date of this AD in accordance with Boeing Alert Service Bulletin 737-28A1206, dated January 11, 2006; or Revision 1, dated January 30, 2008; are considered acceptable for compliance with the corresponding actions specified in paragraph (g) of this AD, provided one of the actions specified in paragraph (r)(1) or (r)(2) of this AD have been done.

(1) The procedures specified in paragraph (f) of AD 2008-24-51, Amendment 39-15781 (74 FR 8155, February 24, 2009), have been accomplished.

(2) The actions specified in Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1206, Revision 2, dated May 21, 2009, have been accomplished.

Optional Terminating Action

(s) Installing TDG Aerospace, Inc., UFI, in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA, within 36 months after the effective date of this AD, terminates the actions required by paragraphs (g) through (k) of this AD; provided that, concurrently with installing a UFI on any airplane in an operator's fleet, a placard is installed adjacent to the pilot's primary flight display on all airplanes in the operator's fleet not equipped with a UFI or an automatic shutoff system. The placard must read as follows (unless alternative placard wording is approved by an appropriate FAA Principal Operations Inspector):

"AD 2002-24-51 fuel usage restrictions required."

Installation of a placard in accordance with paragraph (h) of this AD is acceptable for compliance with the placard installation required by this paragraph. Installing a TDG Aerospace, Inc., UFI in accordance with this paragraph on an airplane terminates the placard installation required by this paragraph for only that airplane. Installing TDG Aerospace, Inc., UFIs in accordance with this paragraph, or automatic shutoff systems in accordance with paragraph (g) of this AD, on all airplanes in an operator's fleet terminates the placard installation required by this paragraph for all airplanes in an operator's fleet. If operation according to the fuel usage restrictions of AD 2002-24-51, Amendment 39-12992 (68 FR 10, January 2, 2003), and AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001), is maintained until UFIs or automatic shutoff systems are installed on all airplanes in an operator's fleet, the placard installation specified in this paragraph is not required. Installation of a placard in accordance with paragraph (e) of AD 2002-19-52, Amendment 39-12900 (67 FR 61253, September 30, 2002), is acceptable for compliance with the placard installation requirements of this paragraph; however, terminating action specified in paragraph (g) of AD 2002-19-52 and installation of a UFI specified by this paragraph must be accomplished on the airplane before the placard is removed from the airplane.

Note 5: Guidance on installing a TDG Aerospace, Inc., UFI can be found in TDG Aerospace, Inc., Supplemental Type Certificate (STC) ST02076LA.

Credit for Actions Accomplished in Accordance With Previous Service Information

(t) Revising the maintenance program by incorporating AWL No. 28-AWL-23 of a revision specified in paragraphs (t)(1) through (t)(12) of this AD of Subsection G, Airworthiness Limitations–Fuel System AWLs, of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of the Boeing 737-600/700/800/900 MPD Document, D626A001-CMR; or Subsection E, AWLs–Fuel Systems, of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of the Boeing 737-600/700/800/900 MPD Document, D626A001-CMR, Revision February 2011; before the effective date of this AD is considered acceptable for compliance with the corresponding actions specified in paragraph (k) of this AD.

- (1) Revision March 2008.
- (2) Revision April 2008.
- (3) Revision June 2008.
- (4) Revision February 2009.
- (5) Revision March 2009.
- (6) Revision August 2009.
- (7) Revision September 2009.
- (8) Revision November 2009.
- (9) Revision January 2010.
- (10) Revision May 2010.
- (11) Revision July 2010.
- (12) Revision August 2010.

Alternative Methods of Compliance (AMOCs)

(u)(1) The Manager, Seattle 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 the Related Information section of this AD. Information may be e-mailed 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.

Related Information

(v) For more information about this AD, contact Tak Kobayashi, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Ave., SW., Renton, Washington 98057-3356; phone: (425) 917-6499; fax (425) 917-6590; e-mail: Takahisa.Kobayashi@faa.gov.

Material Incorporated by Reference

(w) You must use the service information contained in table 1 of this AD, as applicable, to do the actions required by this AD, unless the AD specifies otherwise.

Table 1–All Material Incorporated by Reference

Document	Revision	Date
Boeing Alert Service Bulletin 737-28A1206	2	May 21, 2009
Boeing Alert Service Bulletin 737-28A1248	2	August 28, 2009
AWL No. 28-AWL-23 of Subsection E, AWLs – Fuel Systems of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of the Boeing 737-600/700/800/900 Maintenance Planning Data Document, D626A001-CMR	March 2011	March 2011

(1) The Director of the Federal Register approved the incorporation by reference of the service information contained in table 1 of this AD under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at an NARA facility, call 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on August 12, 2011.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.