

# Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2011-1068; Directorate Identifier 2010-NM-189-AD]

RIN 2120-AA64

#### Airworthiness Directives; The Boeing Company Airplanes

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

**ACTION:** Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

**SUMMARY:** We are revising an earlier proposed airworthiness directive (AD) for all Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. The NPRM proposed to require installing an automatic shutoff system for the center and auxiliary tank fuel boost pumps, as applicable; installing a placard in the airplane flight deck if necessary; replacing the P5-2 fuel system module assembly; installing the "uncommanded ON" (UCO) protection system for the fuel boost pumps; revising the airplane flight manual to advise the flightcrew of certain operating restrictions for airplanes equipped with an automatic shutoff system; and revising the maintenance program by incorporating new airworthiness limitations for fuel tank systems to satisfy Special Federal Aviation Regulation No. 88 requirements. The NPRM was prompted by fuel system reviews conducted by the manufacturer. This action revises the NPRM by proposing to require updated or additional actions that are necessary for certain airplane configurations. We are proposing this supplemental NPRM (SNPRM) to prevent operation of the center and auxiliary tank fuel boost pumps 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 and auxiliary fuel

tanks. These conditions, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane. Since these actions impose an additional burden over that proposed in the NPRM, we are reopening the comment period to allow the public the chance to comment on these proposed changes.

**DATES:** We must receive comments on this SNPRM by May 12, 2016.

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- *Fax:* 202-493-2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- *Hand Delivery:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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

For BAE Systems service information identified in this SNPRM, contact BAE Systems, Attention: Commercial Product Support, 600 Main Street, Room S18C, Johnson City, NY 13790-1806; phone: 607-770-3084; fax: 607-770-3015; email: [CS-Customer.Service@baesystems.com](mailto:CS-Customer.Service@baesystems.com); Internet: <http://www.baesystems-ps.com/customer-support>.

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. The referenced Boeing service bulletins are also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2011-1068.

#### 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-2011-1068; 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 proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Christopher Baker, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6498; fax: 425-917-6590; email: [Christopher.R.Baker@faa.gov](mailto:Christopher.R.Baker@faa.gov).

#### SUPPLEMENTARY INFORMATION:

##### Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA-2011-1068; Directorate Identifier 2010-NM-189-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

##### Discussion

We issued an NPRM to amend 14 CFR part 39 by adding an AD that would apply to all Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. The NPRM published in the **Federal Register** on October 12, 2011 (76 FR 63229) ("the NPRM"). The NPRM proposed to require installing an automatic shutoff system for the center and auxiliary tank fuel boost pumps, as

applicable; installing a placard in the airplane flight deck if necessary; replacing the P5–2 fuel system module assembly; installing the UCO protection system for the center and auxiliary tank fuel boost pumps, as applicable; revising the airplane flight manual to advise the flightcrew of certain operating restrictions for airplanes equipped with an automatic shutoff system; and revising the maintenance program by incorporating new airworthiness limitations for fuel tank systems to satisfy Special Federal Aviation Regulation No. 88 requirements.

#### Actions Since the NPRM Was Issued

Since we issued the NPRM, we learned of certain inadequacies in the referenced service information. Boeing has since developed, and we have approved, revised service information. We have determined it is necessary to mandate the revised service information, which includes additional actions necessary for airplanes in certain configurations.

#### Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 737–28A1210, dated August 2, 2010; Revision 1, dated May 13, 2011; and Revision 2, dated October 25, 2012. The service information describes procedures for replacing the P5–2 fuel system module assembly for Model 737–100, –200, –200C, –300, –400, and –500 airplanes.

We reviewed Boeing Alert Service Bulletin 737–28A1216, dated July 29, 2010; Revision 1, dated March 26, 2012; Revision 2, dated November 12, 2012; and Revision 3, dated July 16, 2014. The service information describes procedures for installing an automatic shutoff system for the center and auxiliary fuel tank boost pumps for Model 737–300, –400, and –500 airplanes.

We reviewed Boeing Alert Service Bulletin 737–28A1227, dated August 2, 2010; Revision 1, dated July 18, 2011; and Revision 2, dated September 23, 2014. The service information describes procedures for installing a UCO protection system for the center and auxiliary fuel boost pumps for Model 737–100, –200, –200C, –300, –400, and –500 airplanes.

We reviewed Boeing Alert Service Bulletin 737–28A1228, dated August 2, 2010; and Revision 1, dated June 28, 2012. The service information describes procedures for installing an automatic shutoff system for the center and auxiliary fuel tank boost pumps for

Model 737–100, –200, and –200C airplanes.

We also reviewed Section C, “Fuel Systems Airworthiness Limitations,” of Section 9 of the Boeing 737–100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6–38278–CMR, Revision June 2014, contains AWLs 28–AWL–21, 28–AWL–22, 28–AWL–24, and 28–AWL–25 for Model 737–100, –200, and –200C airplanes, and AWLs 28–AWL–20, 28–AWL–21, 28–AWL–23, and 28–AWL–24 for Model 737–300, –400, and –500 airplanes, which are airworthiness limitation instructions for an operational check of the installed automatic shutoff system.

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.

#### Comments

We gave the public the opportunity to comment on the NPRM. The following presents the comments received on the NPRM and the FAA’s response to each comment. The Air Line Pilots Association, International, submitted its support for the NPRM.

#### Request To Match Compliance Times

Japan Transocean Air requested that we revise paragraphs (g) and (h) of the proposed AD to extend the compliance time from 36 months to 60 months to match the compliance time specified in paragraph (m) of the proposed AD (in the NPRM). The commenter noted that the service information specified in paragraph (m) of the proposed AD (in the NPRM) recommends the concurrent accomplishment of the actions specified in paragraph (g)(3) of the proposed AD. The commenter asserted that requiring the same compliance time (60 months) for paragraphs (g), (h), and (m) of the proposed AD (in the NPRM) would prevent complications associated with different configurations.

We disagree that it is necessary to revise the compliance time as requested. We infer that the commenter has assumed that all of those actions must be done at the same maintenance visit. As the commenter stated, the “concurrent” actions (in paragraph (g)(3) of this proposed AD) are to be done “before or at the same time as” the actions required by paragraph (m) of this proposed AD. We have determined that the compliance time for the actions specified in paragraphs (g) and (h) of this proposed AD is necessary to ensure an adequate level of safety. We have further determined that doing the

actions required by paragraph (m) of this proposed AD later than the actions specified in paragraphs (g)(3) of this proposed AD would not affect safety, and would not affect the airplane configuration in a way that would complicate accomplishment of the proposed AD requirements for the fleet. In light of the identified unsafe condition, the proposed requirements, and the manufacturer’s recommendations, we have determined that no change to this proposed AD is warranted regarding this issue.

#### Request To Require Two Placards

Japan Transocean Air requested that we revise paragraph (i) of the proposed AD (in the NPRM) to require the installation of two placards, instead of one, adjacent to the primary flight displays. The commenter stated that both pilots operate the fuel pumps, and placards are therefore necessary for both pilots’ primary flight displays.

We partially agree with the request. The intent of this SNPRM is to ensure that the placard is visible to both pilots. Although we have determined that two placards are not necessary to achieve that goal, operators may choose to install an additional placard or use a different location, if approved by an appropriate FAA principal operations inspector. We have revised paragraph (i) of this proposed AD to specify these options.

#### Request To Correct Service Information Specifications

Boeing requested certain corrections to the referenced service information. Since that comment was submitted, Boeing has included these corrections in the revised service information that is referenced in this SNPRM. Therefore, no additional change to this SNPRM is necessary.

#### FAA’s Determination

We are proposing this SNPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. Certain changes described above expand the scope of the NPRM. As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this SNPRM.

#### Proposed Requirements of This SNPRM

This SNPRM would require accomplishing the actions specified in the service information described previously, except as discussed under

“Differences Between this AD and the Service Information.”

**Differences Between This Proposed AD and the Service Information**

Where service information referenced in this proposed AD specifies that certain operators may contact the manufacturer for modification instructions, this proposed AD would require those operators to do the modification in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

Boeing Alert Service Bulletin 737–28A1216, Revision 3, dated July 16, 2014, specifies a 24-month compliance time to accomplish the actions specified in that service information. However,

paragraph (g) of this proposed AD would require accomplishing the actions specified in that service information within 36 months. We have determined this compliance time will provide an acceptable level of safety. We have coordinated this difference with Boeing.

**Costs of Compliance**

We estimate that this proposed AD will affect 499 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

**ESTIMATED COSTS**

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Install auto shutoff protection for Model 737–100, –200, –200C airplanes (82 airplanes).	Between 92 and 155 work-hours × \$85 per hours = Between \$7,820 and \$13,175 <sup>1</sup> .	Between \$10,792 and \$15,548 <sup>1</sup> .	Between \$18,612 and \$28,723 <sup>1</sup> .	Between \$1,526,184 and \$2,355,286. <sup>1</sup>
Install auto shutoff protection for Model 737–300, –400, and –500 airplanes (417 airplanes).	Between 92 and 152 work-hours × \$85 per hours = Between \$7,820 and \$12,920 <sup>1</sup> .	Between \$9,869 and \$16,236 <sup>1</sup> .	Between \$17,689 and \$29,156 <sup>1</sup> .	Between \$7,376,313 and \$12,158,052. <sup>1</sup>
Install P5–2 module .....	1 work-hour × \$85 per hour = \$85.	\$0 .....	\$85 .....	\$42,415.
Install UCO protection (499 airplanes).	Between 38 and 67 work-hours × \$85 per hours = Between \$3,230 and \$5,695 <sup>1</sup> .	Between \$3,742 and \$4,861 <sup>1</sup> .	Between \$6,972 and \$10,556 <sup>1</sup> .	Between \$3,479,028 and \$5,267,444. <sup>1</sup>
Revise aircraft flight manual .....	1 work-hour × \$85 per hour = \$85.	\$0 .....	\$85 .....	\$42,415.
Revise Maintenance Program ...	1 work-hour × \$85 per hour = \$85.	\$0 .....	\$85 .....	\$42,415.

<sup>1</sup> Depending on group.

**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 determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the 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.

**The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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):

**The Boeing Company:** Docket No. FAA–2011–1068; Directorate Identifier 2010–NM–189–AD.

**(a) Comments Due Date**

We must receive comments by May 12, 2016.

**(b) Affected ADs**

Certain requirements of this AD terminate certain requirements of AD 2001–08–24, Amendment 39–12201 (66 FR 20733, April 25, 2001).

**(c) Applicability**

This AD affects all The Boeing Company Model 737–100, –200, –200C, –300, –400, and –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 fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent operation of the center and auxiliary tank fuel boost pumps 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 and auxiliary fuel tanks. These conditions, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

**(f) Compliance**

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

**(g) Installation of Automatic Shutoff System for the Center and Auxiliary Tank Fuel Boost Pumps**

Within 36 months after the effective date of this AD, do the applicable actions specified in paragraph (g)(1), (g)(2), or (g)(3) of this AD. If a placard has been previously installed on an airplane, in accordance with the requirements of paragraph (i) of this AD, the placard may be removed from the flight deck of only that airplane after the automatic shutoff system has been installed, as specified in paragraph (g)(1), (g)(2), or (g)(3) of this AD, as applicable.

(1) For Model 737-100, -200, and -200C series airplanes, in Groups 2 through 19, as identified in Boeing Alert Service Bulletin 737-28A1228, Revision 1, dated June 28, 2012: Install the automatic shutoff system for the center and auxiliary fuel tank boost pumps, as applicable, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1228, Revision 1, dated June 28, 2012. For airplanes that do not have airstairs, accomplishment of the actions specified in Boeing Alert Service Bulletin 737-28A1228, dated August 2, 2010, is acceptable for compliance with the requirements of this paragraph, provided markers are installed on the J2802 Box for "POS 1" and "POS 2" within 90 days after the effective date of this AD, in accordance

with Boeing Alert Service Bulletin 737-28A1228, Revision 1, dated June 28, 2012.

(2) For Model 737-100, -200, and -200C series airplanes in Group 1, as identified in Boeing Alert Service Bulletin 737-28A1228, Revision 1, dated June 28, 2012: Install the automatic shutoff system for the center and auxiliary fuel tank boost pumps, as applicable, using a method approved in accordance with the procedures specified in paragraph (r) of this AD.

(3) For Model 737-300, -400, and -500 series airplanes in Groups 1 through 31, as identified in Boeing Alert Service Bulletin 737-28A1216, Revision 3, dated July 16, 2014: Install the automatic shutoff system for the center and auxiliary fuel tank boost pumps, as applicable, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1216, Revision 3, dated July 16, 2014. For airplanes that do not have airstairs: Accomplishment of the actions specified in Boeing Service Bulletin 737-28A1216, dated July 29, 2010, is acceptable for compliance with the requirements of this paragraph, provided markers are installed on the J2802 Box for "POS 1" and "POS 2" within 90 days after the effective date of this AD, in accordance with Boeing Alert Service Bulletin 737-28A1216, Revision 1, dated March 26, 2012; or Boeing Alert Service Bulletin 737-28A1216, Revision 2, dated November 12, 2012.

**(h) Concurrent Installation of P5-2 Fuel System Module Assembly**

Before or concurrently with accomplishment of the actions required by paragraph (g) of this AD, do the actions specified in paragraph (h)(1) or (h)(2) of this AD, as applicable. Accomplishment of the actions specified in Boeing Alert Service Bulletin 737-28A1210, dated August 2, 2010, or Boeing Service Bulletin 737-28A1210, Revision 1, dated May 13, 2011, is acceptable for compliance with the requirements of paragraph (h)(1) of this AD, provided that for any original P5-2 Fuel System Module P/N 69-37335-129 installed that has been reworked as specified in BAE Systems Service Bulletin 69-37335-28-04, Revision

2, dated February 10, 2010, the P/N marking is etched/scribed or labeled as P/N 69-37335-2129, within 90 days after the effective date of this AD.

(1) For airplanes in Group 2, as identified in Boeing Service Bulletin 737-28A1210, Revision 2, dated October 25, 2012: Replace the P5-2 fuel system module assembly with a modified or new P5-2 fuel system module assembly having a new part number, in accordance with Boeing Service Bulletin 737-28A1210, Revision 2, dated October 25, 2012.

**Note 1 to paragraph (h)(1) of this AD:** Boeing Service Bulletin 737-28A1210, Revision 2, dated October 25, 2012, refers to BAE Systems Service Bulletin 69-37335-28-04 as an additional source of guidance for modifying and updating the existing P5-2 fuel system module assembly part numbers.

(2) For airplanes in Group 1, as identified in Boeing Service Bulletin 737-28A1210, Revision 2, dated October 25, 2012, replace the P5-2 fuel system module assembly, as applicable, using a method approved in accordance with the procedures specified in paragraph (r) of this AD.

**(i) Concurrent Installation of a Placard for Mixed Fleet Operation**

Concurrently with accomplishment of the actions 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 not equipped with an automatic shutoff system for the center and auxiliary tank fuel boost pumps, as applicable. The placard must include the statement in figure 1 to paragraph (i) of this AD. Optionally, the placard may include alternative text or be installed in a different location, or an additional placard may be installed, if approved by an appropriate FAA principal operations inspector. Installing an automatic shutoff system on an airplane, in accordance with the requirements of paragraph (g) of this AD, terminates the placard installation required by this paragraph for only that airplane.

**Figure 1 to paragraph (i) of this AD**

AD 2001-08-24 fuel usage restrictions required.

**(j) Airplane Flight Manual (AFM) Revisions for Airplanes Without Boeing Auxiliary Fuel Tanks**

For airplanes without Boeing auxiliary fuel tanks: Concurrently with accomplishment of the actions required by paragraph (g) of this

AD, do the actions specified in paragraphs (j)(1) and (j)(2) of this AD.

(1) Revise Section 1 of the Limitations section of the applicable Boeing 737 AFM to include the statement in figure 2 to paragraph (j)(1) of this AD. This may be done by inserting a copy of this AD into the AFM.

When a statement identical to that in figure 2 to paragraph (j)(1) of this AD has been included in the general revisions of the applicable Boeing 737 AFM, the general revisions may be inserted into the AFM, and the copy of this AD may be removed from the AFM.

**Figure 2 to paragraph (j)(1) of this AD**

CENTER TANK FUEL PUMPS

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

(2) Revise Section 3 of the Normal Procedures section of the applicable Boeing 737 AFM to include to include the text specified in figure 3 to paragraph (j)(2) of this

AD. 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.

**BILLING CODE 4910-13-P**

**Figure 3 to paragraph (j)(2) of this AD****NORMAL FUEL USAGE**

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 1,000 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 fuel 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 2,000 pounds (907 kilograms).

**(k) AFM Revisions for Airplanes With Boeing Auxiliary Fuel Tanks**

For airplanes with Boeing auxiliary fuel tanks: Concurrently with accomplishment of the actions required by paragraph (g) of this

AD, do the actions specified in paragraphs (k)(1) and (k)(2) of this AD.

(1) Revise Section 1 of the Limitations section of the applicable Boeing 737 AFM to include the text specified in figure 4 to paragraph (k)(1) of this AD. This may be done by inserting a copy of this AD into the AFM.

When a statement identical to that in figure 4 to paragraph (k)(1) of this AD has been included in the general revisions of the applicable Boeing 737 AFM, the general revisions may be inserted into the AFM, and the copy of this AD may be removed from the AFM.

**Figure 4 to paragraph (k)(1) of this AD****CENTER WING (AND BOEING AUXILIARY) TANK FUEL PUMPS**

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

(2) Revise Section 3 of the Normal Procedures section of the applicable Boeing 737 AFM to include the text specified in

figure 5 to paragraph (k)(2) of this AD. 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.

**Figure 5 to paragraph (k)(2) of this AD****CENTER WING (AND BOEING AUXILIARY) TANK FUEL PUMPS**

Center wing or auxiliary tank fuel pumps must not be “ON” unless personnel are available in the flight deck to monitor low pressure lights.

For ground operation, center wing (or auxiliary) tank fuel pump switches must not be positioned “ON” unless the center wing (or auxiliary) tank fuel quantity exceeds 1,000 pounds (453 kilograms), except when defueling or transferring fuel. Upon positioning the center wing (or auxiliary) tank fuel pump switches “ON,” verify momentary illumination of each center wing (or auxiliary) tank fuel pump low pressure light.

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

[1] When established in a level flight attitude, both center wing (or auxiliary) tank fuel pump switches should be positioned “ON” again if the center wing (or auxiliary) tank contains usable fuel.

**DEFUELING AND FUEL TRANSFER**

When transferring fuel or defueling center wing, auxiliary 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 wing (or auxiliary) tank with passengers on board is prohibited if the center wing (or auxiliary) 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 2,000 pounds (907 kilograms).

**BILLING CODE 4910-13-C****(l) Airworthiness Limitations (AWLs)  
Revision for Automatic Shutoff System**

Concurrently with accomplishment of the actions required by paragraph (g) of this AD, or within 30 days after the effective date of this AD, whichever occurs later: Revise the maintenance program by incorporating the AWLs specified in paragraphs (l)(1), (l)(2), (l)(3), and (l)(4) of this AD, as applicable. The initial compliance time for the actions specified in the applicable AWLs is within 1 year after accomplishment of the installation

required by paragraph (g) of this AD, or within 1 year after the effective date of this AD, whichever occurs later.

(1) For Model 737-100, -200, and -200C series airplanes without Boeing auxiliary fuel tanks installed: Incorporate AWL No. 28-AWL-21 of Section C, “Fuel Systems Airworthiness Limitations,” of Section 9 of the Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-38278-CMR, Revision June 2014.

(2) For Model 737-100, -200, and -200C series airplanes with Boeing auxiliary fuel tanks installed: Incorporate AWL No. 28-AWL-21 and AWL No. 28-AWL-22 of Section C, “Fuel Systems Airworthiness Limitations,” of Section 9 of the Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-38278-CMR, Revision June 2014.

(3) For Model 737-300, -400, and -500 series airplanes without Boeing auxiliary fuel tanks installed: Incorporate AWL No. 28-



AWL-20 of Section C, "Fuel Systems Airworthiness Limitations," of Section 9 of the Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-38278-CMR, Revision June 2014.

(4) For Model 737-300, -400, and -500 series airplanes with Boeing auxiliary fuel tanks installed: Incorporate AWL No. 28-AWL-20 and AWL No. 28-AWL-21 of Section C, "Fuel Systems Airworthiness Limitations," of Section 9 of the Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-38278-CMR, Revision June 2014.

#### **(m) Installation of Un-Commanded ON (UCO) Protection System**

Within 60 months after the effective date of this AD, do the actions required by paragraph (m)(1) or (m)(2) of this AD, as applicable.

(1) For airplanes in Groups 2 through 13, as identified in Boeing Alert Service Bulletin 737-28A1227, Revision 2, dated September 23, 2014: Install the UCO protection system for the center and auxiliary tank fuel boost pumps, as applicable, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1227, Revision 2, dated September 23, 2014. For airplanes with enlarged J2802 box assembly relay cutouts to fit the body of relays R3334, R3336, R3338, or R3340, with BACS12HN08-10 screws for the installation of the relays as specified in Information Notice 737-28A1227 IN 05: Accomplishment of the actions specified in Boeing Alert Service Bulletin 737-28A1227, dated August 2, 2010, or Revision 1, dated July 18, 2011, is acceptable for compliance with the requirements of this paragraph, provided markers are installed that identify the function of the switches installed on the J2802 box within 90 days after the effective date of this AD, in accordance with figure 1 or figure 5, as applicable, of Boeing Alert Service Bulletin 737-28A1227, Revision 2, dated September 23, 2014.

(2) For airplanes in Group 1, as identified in Boeing Alert Service Bulletin 737-28A1227, Revision 2, dated September 23, 2014: Install the UCO protection system for the center and auxiliary tank fuel boost pumps, as applicable, using a method approved in accordance with the procedures specified in paragraph (r) of this AD.

#### **(n) AWLs Revision for UCO Protection System**

Concurrently with accomplishment of the actions required by paragraph (m) of this AD, or within 30 days after the effective date of this AD, whichever occurs later: Revise the maintenance program by incorporating the AWLs specified in paragraphs (n)(1), (n)(2), (n)(3), and (n)(4) of this AD, as applicable. The initial compliance time for the actions specified in applicable AWLs is within 1 year after accomplishment of the installation required by paragraph (m) of this AD, or within 1 year after the effective date of this AD, whichever occurs later.

(1) For Model 737-100, -200, and -200C series airplanes without Boeing auxiliary fuel

tanks: Incorporate AWL No. 28-AWL-24 of Section C, "Fuel Systems Airworthiness Limitations," of Section 9 of the Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-38278-CMR, Revision June 2014.

(2) For Model 737-100, -200, and -200C series airplanes with Boeing auxiliary fuel tanks: Incorporate AWL No. 28-AWL-24 and AWL No. 28-AWL-25 of Section C, "Fuel Systems Airworthiness Limitations," of Section 9 of the Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-38278-CMR, Revision June 2014.

(3) For Model 737-300, -400, and -500 series airplanes without Boeing auxiliary fuel tanks: Incorporate AWL No. 28-AWL-23 of Section C, "Fuel Systems Airworthiness Limitations," of Section 9 of the Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-38278-CMR, Revision June 2014.

(4) For Model 737-300, -400, and -500 series airplanes with Boeing auxiliary fuel tanks: Incorporate AWL No. 28-AWL-23 and AWL No. 28-AWL-24 of Section C, "Fuel Systems Airworthiness Limitations," of Section 9 of the Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), Document D6-38278-CMR, Revision June 2014.

#### **(o) No Alternative Inspections or Inspection Intervals**

After accomplishment of the applicable actions specified in paragraphs (l) and (n) of this AD, no alternative inspections or inspection intervals may be used unless the inspections or inspection intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (r) of this AD.

#### **(p) Method of Compliance for Paragraph (l) of This AD**

Incorporating AWLs No. 28-AWL-21 and No. 28-AWL-22 for Model 737-100, -200, and -200C series airplanes; and AWLs No. 28-AWL-20 and No. 28-AWL-21 for Model 737-300, -400, and -500 series airplanes; in accordance with paragraphs (g)(1) and (g)(2) of AD 2008-10-09 R1, Amendment 39-16148 (74 FR 69264, December 31, 2009), is acceptable for compliance with the corresponding AWL incorporation required by paragraph (l) of this AD.

#### **(q) Method of Compliance for Paragraph (a) of AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001)**

Accomplishment of the actions required by paragraphs (g), (h), (i), and (l) of this AD, and paragraph (j) or (k) of this AD as applicable, is an acceptable method of compliance with the requirements of paragraph (a) of AD 2001-08-24, Amendment 39-12201 (66 FR 20733, April 25, 2001).

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

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (s)(1) of this AD. Information may be emailed to [9-ANM-Seattle-ACO-AMOC-Requests@faa.gov](mailto:9-ANM-Seattle-ACO-AMOC-Requests@faa.gov).

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

#### **(s) Related Information**

(1) For more information about this AD, contact Christopher Baker, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6498; fax: 425-917-6590; email: [Christopher.R.Baker@faa.gov](mailto:Christopher.R.Baker@faa.gov).

(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, WA 98124-2207; telephone: 206-544-5000, extension 1; fax: 206-766-5680; Internet <https://www.myboeingfleet.com>. For BAE Systems service information identified in this AD, contact BAE Systems, Attention: Commercial Product Support, 600 Main Street, Room S18C, Johnson City, NY 13790-1806; phone: 607-770-3084; fax: 607-770-3015; email: [CS-Customer.Service@baesystems.com](mailto:CS-Customer.Service@baesystems.com); Internet: <http://www.baesystems-ps.com/customer-support>. 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.

Issued in Renton, Washington, on February 25, 2016.

#### **Dionne Palermo,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*

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