

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [64 FR 10213 No. 41 03/03/99]

[Docket No. 98-NM-375-AD; Amendment 39-11060; AD 99-05-12]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 737-100, -200, -300, -400, and -500 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to certain Boeing Model 737-100, -200, -300, -400, and -500 series airplanes. This action requires removal of the float switch and wiring and inspection of the float switch wiring in the center fuel tank to detect discrepancies, and either reinstallation of existing float switch and wiring, or replacement of the float switch and wiring with a new float switch and wiring. This action also requires installation of Teflon sleeving over the wiring of the float switch. In lieu of the above mentioned requirements, this AD requires deactivation of the float switch, accomplishment of specific fueling procedures, and installation of Caution signs. This amendment is prompted by a report indicating that chafing of the direct current (DC) powered float switch wiring insulation in the center fuel tank has occurred on several airplanes. The actions specified in this AD are intended to detect and correct such chafing and the resultant arcing from the wiring to the in-tank conduit, which could present an ignition source inside the fuel tank and consequent fire/explosion.

DATES: Effective March 18, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of March 18, 1999.

Comments for inclusion in the Rules Docket must be received on or before May 3, 1999.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 98-NM-375-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056.

The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Dorr M. Anderson, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2684; fax (425) 227-1181.

SUPPLEMENTARY INFORMATION: The FAA has received a report indicating that chafing of the direct current (DC) powered float switch wiring insulation in the center fuel tank has occurred on eight Boeing Model 737-200 series airplanes. These airplanes had accumulated between 32,000 and 85,000 total flight hours. Such chafing may be attributed to vibrational contact between the conduit and float switch wiring. Chafing of the float switch wiring insulation in the center fuel tank, if not corrected, could result in arcing from the wiring to the in-tank conduit, which could present an ignition source inside the fuel tank and consequent fire/explosion.

Similar Airplanes

The center fuel tank float switch installation on certain Boeing Model 737-100, - 300, -400, and -500 series airplanes is similar to that on the affected Boeing Model 737-200 series airplanes. Therefore, the FAA has determined that all of these models may be subject to the unsafe condition identified in this AD.

Explanation of Relevant Service Information

The FAA has reviewed and approved Boeing Alert Service Bulletin 737-28A1132, dated December 2, 1998, and Revision 1, dated January 15, 1999. The alert service bulletin describes the following procedures:

1. Removing the float switch and wiring from the center fuel tank, performing a visual inspection of the float switch wiring to detect discrepancies (i.e., evidence of electrical arcing, exposure of the copper conductor, presence or scent of fuel on the electrical wires, or worn insulation), and performing corrective actions. (The major corrective actions include measuring the resistance between the wires and the float switch housing; reusing the existing float switch and wiring or replacing the discrepant float switch and wiring with a new float switch and wiring; installing double Teflon sleeving over the wiring of the float switch; and replacing any section of electrical conduit where arcing or leaking has occurred with a new section.)
2. Deactivating the float switch (i.e., cut the two wires for the float switch at the splices on the front spar and cap and stow the four wire ends; or cut, stow, and splice the two wires for the float switch at the splices on the front spar), painting a Caution that shows a conservative maximum fuel capacity for the center tank on the underside of the right-hand wing near the fueling station door, and installing an INOP placard on the fueling panel, as applicable.
3. Performing modified fueling procedures following deactivation of the float switch.

The FAA also has reviewed Boeing Telex M-7200-98-04486, dated December 1, 1998, which describes two manual fueling procedures for the center fuel tank after the float switch has been deactivated by either of the methods described above.

Accomplishment of the actions specified in the alert service bulletin and telex is intended to adequately address the identified unsafe condition.

Explanation of the Requirements of the Rule

Since an unsafe condition has been identified that is likely to exist or develop on other airplanes of the same type design, this AD is being issued to detect and correct chafing of the float switch wiring insulation in the center fuel tank and the resultant arcing from the wiring to the conduit, which could present an ignition source inside the fuel tank and consequent fire/explosion. This AD requires accomplishment of the actions specified in the alert service bulletin and telex described previously; except as discussed below.

This AD also includes a provision that supersedes the FAA-approved Master Minimum Equipment List (MMEL), in that it allows dispatch of the airplane with the center fuel tank float switch deactivated in accordance with Boeing Alert Service Bulletin 737-28A1132, until replacement float switches and wiring are available for installation. The FAA-approved MMEL allows dispatch of the airplane with the "Pressure Fueling System" inoperative up to 10 days. (The float switch wiring circuit is part of the "Pressure Fueling System.") The FAA has been notified by the manufacturer that it will take approximately 18 months to obtain required parts from the issuance of Boeing Alert Service Bulletin 737-28-A1132, dated December 2, 1998. The FAA finds that the 18-month period will accommodate the time necessary for affected operators to order, obtain, and install the necessary parts required for the replacement of the float switch, without adversely affecting safety. The FAA also finds that such a provision will eliminate schedule disruptions. Absence of such operational relief could create a burden for operators if required parts were not readily available at certain airports or locations.

Differences Between the AD and the Relevant Alert Service Bulletin

Operators should note that the applicability of this AD affects certain Boeing Model 737-100, -200, -300, -400, and -500 series airplanes, on which the center wing tanks are activated; excluding those airplanes equipped with center wing tank volumetric toff systems, or alternate current (AC) powered center tank float switches. This differs from the effectivity listing of the referenced alert service bulletin. While it is assumed that an operator will know the models of airplanes that it operates, there is a potential that the operator will not know or be aware of specific items that are installed on its airplanes. For this reason, it may be necessary for operators to check their records to determine if center wing tank volumetric toff systems, or alternate current (AC) powered center tank float switches have been installed on their fleet of airplanes. Such a check will identify airplanes that are subject to the unsafe condition of this AD.

Operators also should note that, although the referenced alert service bulletin contains modified fueling procedures following deactivation of the float switch, this AD requires accomplishment of the manual fueling procedures specified in Boeing Telex M-7200-98-04486, as described above. The FAA finds that the procedures specified in the telex are more detailed than those in the alert service bulletin. The procedures specified in the telex provide step-by-step fueling instructions for airplanes with a deactivated center tank float switch to minimize the possibility of fuel spills.

Prior to utilizing these fueling procedures, this AD requires operators to ensure that airplane fueling crews are properly trained in accordance with the procedures specified in the telex, or the procedures approved by the FAA. Prior to each occurrence of fueling the airplane, this AD requires a check to verify that the fueling panel center tank quantity indicator is operative, and replacement of the indicator with a serviceable indicator, if necessary. Accomplishment of such training and a check will provide the proper safeguards necessary to minimize fuel spills during airplane fueling.

Interim Action

The FAA is considering further rulemaking action to supersede this AD to require, within 18 months after accomplishment of the actions specified in paragraphs (c) and (d) of this AD, and within 15,000 flight hours after reinstalling any existing float switch having worn insulation and double Teflon sleeving, replacement of the float switch and wiring with a new float switch and wiring. However, the planned compliance time for these actions is sufficiently long so that prior notice and time for public comment will be practicable.

Determination of Rule's Effective Date

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified under the caption "ADDRESSES." All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 98-NM-375-AD." The postcard will be date stamped and returned to the commenter.

Regulatory Impact

The regulations adopted herein will not have substantial direct effects 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. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES."

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by adding the following new airworthiness directive:

SUPERSEDED

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460



U.S. Department
of Transportation
**Federal Aviation
Administration**

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference FAR Subpart 39.3).

99-05-12 BOEING: Amendment 39-11060. Docket 98-NM-375-AD.

Applicability: Model 737-100, -200, -300, -400, and -500 series airplanes, on which the center wing tanks are activated; excluding those airplanes equipped with center wing tank volumetric topoff systems, or alternate current (AC) powered center tank float switches; certificated in any category.

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (f) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To detect and correct chafing of the float switch wiring insulation in the center fuel tank and the resultant arcing from the wiring to the in-tank conduit, which could present an ignition source inside the fuel tank and consequent fire/explosion, accomplish the following:

(a) Prior to the accumulation of 30,000 total flight hours, or within 30 days after the effective date of this AD, whichever occurs later, accomplish the requirements of paragraph (b) or (c) of this AD.

(b) Remove the fueling float switch and wiring from the center fuel tank and perform a visual inspection of the float switch wiring to detect discrepancies (i.e., evidence of electrical arcing, exposure of the copper conductor, presence or scent of fuel on the electrical wires, or worn insulation), in accordance with Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1132, dated December 2, 1998, or Revision 1, dated January 15, 1999. Pay particular attention to the wire bundle where it passes through the wing pylon vapor seals and under the wire bundle clamps.

(1) If no discrepancy is detected, prior to further flight, accomplish either paragraph (b)(1)(i) or (b)(1)(ii) of this AD.

(i) Measure the resistance between the wires and the float switch housing, in accordance with the alert service bulletin.

(A) If the resistance is less than 200 megohms, prior to further flight, replace the float switch with a new float switch, and install double Teflon sleeving over the wiring of the float switch, in accordance with the alert service bulletin; except, if the replacement float switch and wiring are not available, prior to further flight, accomplish the requirements specified in paragraphs (c) and (d) of this AD.

(B) If the resistance is greater than or equal to 200 megohms, prior to further flight, blow dirt out of the conduit, install double Teflon sleeving over the wiring of the float switch, and reinstall the existing float switch, in accordance with the alert service bulletin.

(ii) Replace the float switch and wiring with a new float switch and wiring, and install double Teflon sleeving over the wiring of the float switch, in accordance with the alert service bulletin; except, if the replacement float switch and wiring are not available, prior to further flight, accomplish the requirements specified in paragraphs (c) and (d) of this AD.

(2) If any worn insulation is detected, and if no copper conductor is exposed, and if no evidence of arcing is detected; accomplish the requirements specified in either paragraph (b)(1)(i) or (b)(1)(ii) of this AD.

(3) If any electrical arcing or exposed copper conductor is detected, prior to further flight, accomplish either paragraph (b)(3)(i) or (b)(3)(ii) of this AD.

(i) Replace any section of the electrical conduit where the arcing occurred with a new section, in accordance with the alert service bulletin, and accomplish the requirements specified in paragraph (b)(1)(ii) of this AD.

(ii) Perform a visual inspection to detect fuel leaks of the electrical conduit, in accordance with the alert service bulletin.

(A) If no fuel leak is detected, prior to further flight, accomplish the requirements specified in paragraph (b)(1)(ii) of this AD. Repeat the inspection required by paragraph (b)(3)(ii) of this AD thereafter at intervals not to exceed 1,500 flight hours, until the replacement required by paragraph (b)(3)(ii)(B) of this AD is accomplished.

(B) If any fuel leak is detected, prior to further flight, replace any section of the electrical conduit where the leak is with a new section, in accordance with the alert service bulletin. Prior to further flight after accomplishment of the replacement, accomplish the requirements specified in paragraph (b)(1)(ii) of this AD. Accomplishment of electrical conduit replacement constitutes terminating action for the repetitive inspection requirements of paragraph (b)(3)(ii)(A) of this AD.

(4) If any presence or scent of fuel on the electrical wires is detected, prior to further flight, locate the source of the leak and replace the damaged conduit with a new conduit, in accordance with the alert service bulletin; and accomplish the requirements specified in either paragraph (b)(1)(i) or (b)(1)(ii) of this AD, unless accomplished previously in accordance with paragraph (b)(1), (b)(2), or (b)(3) of this AD.

(c) Accomplish the requirements specified in either paragraph (c)(1) or (c)(2) of this AD, in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1132, dated December 2, 1998, or Revision 1 dated January 15, 1999.

(1) Deactivate the center tank float switch (i.e., cut the two wires for the float switch at the splices on the front spar and cap and stow the four wire ends); paint a Caution that shows a conservative maximum fuel capacity for the center tank on the underside of the right-hand wing near the fueling station door; and install an INOP placard on the fueling panel.

(2) Deactivate the center tank float switch (i.e., cut, stow, and splice the two wires for the float switch at the splices on the front spar), and paint a Caution that shows a conservative maximum fuel capacity for the center tank on the underside of the right-hand wing near the fueling station door.

(d) For airplanes on which the requirements specified in paragraph (c) of this AD have been accomplished: Accomplish the requirements specified in paragraph (d)(1), (d)(2), and (d)(3) of this AD.

(1) Operators must ensure that airplane fueling crews are properly trained in accordance with the procedures specified in Boeing Telex M-7200-98-04486, dated December 1, 1998, or procedures approved by the FAA. This one-time training must be accomplished prior to utilizing the procedures specified in paragraph (d)(3) of this AD.

(2) Prior to fueling the airplane, perform a check to verify that the fueling panel center tank quantity indicator is operative. Repeat this check thereafter prior to fueling the airplane. If the fueling panel center tank quantity indicator is not operative, prior to further flight, replace the fueling panel center tank quantity indicator with a serviceable part.

(3) One of the two manual fueling procedures for the center fuel tank must be used for each fueling occurrence, in accordance with Boeing Telex M-7200-98-04486, dated December 1, 1998, or a method approved by the FAA.

NOTE 2: For the purposes of this AD, the term "the FAA," is defined in paragraph (d) of this AD as "the cognizant Principal Maintenance Inspector (PMI)."

NOTE 3: Where there are differences between the Boeing Alert Service Bulletin 737-28A1132 and this AD, the AD prevails.

(e) Dispatch with the center fuel tank float switch deactivated, in accordance with Boeing Alert Service Bulletin 737-28A1132, dated December 2, 1998, or Revision 1, dated January 15, 1999, is allowed until replacement float switches and wiring are available for installation. Where there are differences between the Master Minimum Equipment List (MMEL) and the AD, the AD prevails.

(f) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA PMI, who may add comments and then send it to the Manager, Seattle ACO.

NOTE 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

(g) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

(h) Except as provided by paragraphs (d)(1) and (d)(2) of this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 737-28A1132, dated December 2, 1998; Boeing Alert

Service Bulletin 737-28A1132, Revision 1, dated January 15, 1999; and Boeing Telex M-7200-98-04486, dated December 1, 1998, as applicable. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

- (i) This amendment becomes effective on March 18, 1999.

FOR FURTHER INFORMATION CONTACT:

Dorr M. Anderson, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2684; fax (425) 227-1181.

SUPERSEDED