

[Federal Register: May 8, 2008 (Volume 73, Number 90)]
[Rules and Regulations]
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[DOCID:fr08my08-4]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-28383; Directorate Identifier 2006-NM-180-AD; Amendment 39-15515; AD 2008-10-09]

RIN 2120-AA64

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

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. This AD requires revising the FAA-approved maintenance program to incorporate new airworthiness limitations (AWLs) for fuel tank systems to satisfy Special Federal Aviation Regulation No. 88 requirements. This AD also requires the initial inspection of a certain repetitive AWL inspection to phase in that inspection, and repair if necessary. This AD results from a design review of the fuel tank system. We are issuing this AD to prevent the potential for ignition sources inside fuel tanks caused by latent failures, alterations, repairs, or maintenance actions, which, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

DATES: This AD is effective June 12, 2008.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of June 12, 2008.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207.

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 (telephone 800-647-5527) is the 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: Sue Lucier, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6438; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to all Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. That NPRM was published in the Federal Register on July 6, 2007 (72 FR 36907). That NPRM proposed to require revising the FAA-approved maintenance program to incorporate new airworthiness limitations (AWLs) for fuel tank systems to satisfy Special Federal Aviation Regulation No. 88 requirements. That NPRM also proposed to require the initial inspection of a certain repetitive AWL inspection to phase in that inspection, and repair if necessary.

Actions Since NPRM Was Issued

Since we issued the NPRM, Boeing has issued Revision March 2008 of the 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR (hereafter referred to as "Revision March 2008 of Document D6-38278-CMR"). The NPRM referred to Revision May 2006 of Document D6-38278-CMR as the appropriate source of service information for accomplishing the proposed actions. Revision March 2008 of Document D6-38278-CMR, among other actions, includes the following changes:

- Removes the repetitive task interval of 36,000 flight cycles from AWLs No. 28-AWL-01 and No. 28-AWL-03.
- Revises the task description for AWL No. 28-AWL-01 to harmonize it with AWL No. 28-AWL-02 by removing references to certain station numbers.
- Revises AWL No. 28-AWL-03 to reflect the new maximum loop resistance values associated with the lightning protection of the unpressurized fuel quantity indicating system (FQIS) wire bundle installations.

Accordingly, we have revised paragraphs (f), (g), and (h) of this AD to refer to Revision March 2008 of Document D6-38278-CMR. We also have added a new paragraph (j) to this AD specifying that actions done before the effective date of this AD in accordance with Revisions May 2006 through November 2007 of Document D6-38278-CMR are acceptable for compliance with the corresponding requirements of paragraphs (g) and (h) of this AD.

We also have removed reference to 36,000 total flight hours from paragraph (h)(1) of this AD and revised the initial threshold for accomplishing AWL No. 28-AWL-03 to within 120 months since the date of issuance of the original standard airworthiness certificate or the date of issuance of the original export certificate of airworthiness.

Operators should note that paragraph (g) of this AD requires only incorporating AWLs No. 28-AWL-01 through No. 28-AWL-20 inclusive for Model 737-100, -200, and -200C series airplanes, and AWLs No. 28-AWL-01 through No. 28-AWL-19 inclusive for Model 737-300, -400, and -500 series airplanes. Revision September 2006 of Document D6-38278-CMR added AWL inspections of the fuel boost pump auto shutoff system for the center and auxiliary fuel tanks (specified as AWLs No. 28-AWL-20 and No. 28-AWL-21 for Model 737-300, -400, and -500 series airplanes, and AWLs No. 28-AWL-21 and No. 28-AWL-22 for Model 737-100, -200, and -200C series airplanes). Revision November 2007 of Document D6-38278-CMR added an AWL inspection of the boost pump ground fault interrupter (specified as AWL No. 28-AWL-22 for Model 737-300, -400, and

-500 series airplanes, and AWL No. 28-AWL-23 for Model 737-100, -200, and -200C series airplanes). We might issue additional rulemaking to require the incorporation of those AWLs. However, as an optional action, operators may incorporate those AWLs as specified in paragraph (g) of this AD.

Other Changes Made to This AD

For standardization purposes, we have revised this AD in the following ways:

- We have added a new paragraph (i) to this AD to specify that no alternative inspections, inspection intervals, or critical design configuration control limitations (CDCCLs) may be used unless they are part of a later approved revision of Revision March 2008 of Document D6-38278-CMR, or unless they are approved as an alternative method of compliance (AMOC). Inclusion of this paragraph in the AD is intended to ensure that the AD-mandated airworthiness limitations changes are treated the same as the airworthiness limitations issued with the original type certificate.
- We have revised Note 1 of this AD to clarify that an operator must request approval for an AMOC if the operator cannot accomplish the required inspections because an airplane has been previously modified, altered, or repaired in the areas addressed by the required inspections.
- We have revised paragraph (h) of this AD to specify that accomplishing AWL No. 28-AWL-03 as part of an FAA-approved maintenance program before the applicable compliance time constitutes compliance with the applicable requirements of that paragraph.
- We have deleted Appendix 1 and Appendix 2 from this AD, since Revision March 2008 of Document D6-38278-CMR already contains most of the updated information that is listed in those appendices of the NPRM.

Comments

We gave the public the opportunity to participate in developing this AD. We considered the comments received from the five commenters.

Request To Revise the Loop Resistance Values for AWL No. 28-AWL-03

Boeing, KLM Royal Dutch Airlines (KLM), and Lufthansa state that the loop resistance values for AWL No. 28-AWL-03 specified in Revision May 2006 of Document D6-38278-CMR are going to be revised, since those values are relevant for production airplanes. The commenters also state that the revised values will be more representative of the expected values for in-service airplanes. Boeing points out that, according to paragraph (h) of the NPRM, the revised values should be able to be used in accordance with a later revision of the CMR if the revision is approved by the Seattle Aircraft Certification Office (ACO), FAA.

We agree that operators may use the revised loop resistance values for AWL No. 28-AWL-03 in accordance with Revision March 2008 of Document D6-38278-CMR. As stated previously, we have revised this AD accordingly.

Request To Revise Intervals for Certain AWL Inspections

KLM, on behalf of several operators, requests that we review a 45-page proposal to align certain airworthiness limitation item (ALI) intervals with the applicable maintenance significant item (MSI) and enhanced zonal analysis procedure (EZAP) intervals for Model 737, 747, 757, 767, and 777 airplanes. The recommendations in that proposal ensure that the ALI intervals align with the maintenance schedules of the operators. Among other changes, the proposal recommends extending certain AWL inspection intervals from 10 years/36,000 flight cycles to 12 years for Model 737-100, -200, -300, -400, and -500 series airplanes.

Lufthansa and the Air Transport Association (ATA), on behalf of its member U.S. Airways, both note an inconsistency between the inspection interval specified in Revision May 2006 of Document D6-38278-CMR and the compliance threshold specified in paragraph (h)(1) of the NPRM. The NPRM specifies accomplishing the initial inspection within 36,000 total flight hours or 120 months since the date of issuance of the original standard airworthiness certificate or the date of issuance of the original export certificate of airworthiness, whichever occurs first. However, Revision May 2006 of Document D6-38278-CMR specifies a repetitive interval of 36,000 total flight cycles or 120 months, whichever occurs first. U.S. Airways requests we verify whether the initial inspection interval should be in units of flight cycles or flight hours.

We disagree with KLM's request to extend certain AWL inspection intervals to 12 years. However, as stated previously, we have deleted the 36,000-total-flight-hour parameter from paragraph (h)(1) of this AD to correspond with the task interval for AWL No. 28-AWL-03 as specified in Revision March 2008 of Document D6-38278-CMR. In developing an appropriate compliance time for this action, we considered the urgency associated with the subject unsafe condition and the practical aspect of accomplishing the required actions within a period of time that corresponds to the normal scheduled maintenance for most affected operators. However, according to the provisions of paragraph (k) of this AD, we might approve requests to adjust the compliance time if the request includes data that prove that the new compliance time would provide an acceptable level of safety.

Request To Revise Note 1

Boeing requests that we revise Note 1 of the NPRM to clarify the need for an AMOC. Boeing states that the current wording is difficult to follow, and that the note is meant to inform operators that an AMOC to the required AWLs might be required if an operator has previously modified, altered, or repaired the areas addressed by the limitations. Boeing requests that we revise Note 1 as follows:

- Add the words "according to paragraph (g)" at the end of the first sentence.
- Replace the words "revision to" with "deviation from" in the last sentence.
- Delete the words "(g) or" and "as applicable" from the last sentence.

As stated previously, we have clarified the language in Note 1 of this AD for standardization with other similar ADs. The language the commenter requests that we change does not appear in the revised note. Therefore, no additional change to this AD is necessary in this regard.

Request To Extend the Grace Period for AWL No. 28-AWL-03

KLM expects to have problems accomplishing the initial inspection of AWL No. 28-AWL-03 within the 24-month grace period. The commenter states that if it does the check and does not reach the specified values, then tank entry outside of heavy maintenance would be necessary. The commenter also states that it would be helpful to plan to do this inspection during an overhaul.

We infer that KLM requests that we extend the grace period for AWL No. 28-AWL-03 in paragraph (h) of this AD to allow accomplishing the initial inspection during a regularly scheduled "D" check (about 6 years). We disagree with extending the grace period to 6 years. In developing an appropriate compliance time for this action, we considered the safety implications, the rate of lightning strikes in the fleet, and the average age of the fleet. In consideration of these items, we have determined that an initial compliance time of 120 months (as discussed previously) with a grace period of 24 months will ensure an acceptable level of safety. We have not changed the grace period for AWL No. 28-AWL-03 in this regard.

Request To Add Applicability to Paragraph (g)

Lufthansa states that the applicability of the AWL tasks should be included in the AWL table of the AD.

We infer the commenter requests that we include the applicability for AWL No. 28-AWL-03 in paragraph (g) of this AD. (The commenter made the same request for a similar NPRM, which contained an "AWL table.") We agree to add the airplane applicability to paragraph (g) of this AD because AWL No. 28-AWL-03 only applies to airplanes on which certain design changes have been incorporated. We have revised paragraph (g) of this AD accordingly.

Request To Clarify Need for AMOCs

The ATA, on behalf of its member U.S. Airways, requests that we clarify whether operators must obtain AMOCs for AWLs that are not applicable to their airplanes. U.S. Airways also requests that we clarify that some of the items identified in Appendix 2 of the NPRM might not be applicable to all Model 737-300, -400, and -500 series airplanes. U.S. Airways states that it will not be able to comply with certain AWL inspections or CDCCLs because it has not incorporated the relevant service bulletins identified in Revision May 2006 of Document D6-38278-CMR on several of its airplanes.

Document D6-38278-CMR contains an applicability column that identifies the airplane configuration to which the AWL applies. The AWL is required only for those airplanes that have that configuration. If the applicability column identifies a service bulletin, then the operator would not need to adhere to the AWL until the airplane is modified in accordance with that service bulletin. There is no need to obtain an AMOC for airplanes that have not been modified. We agree that some of the items identified in Appendix 2 of the NPRM might not be applicable to all Model 737-300, -400, and -500 series airplanes. However, no change to this AD is necessary in this regard, since we have deleted Appendix 2 from this AD.

Request To Clarify if Latest Revision of Document D6-38278-CMR is Required

The ATA, on behalf of its member U.S. Airways, requests that we clarify whether the latest revision of Document D6-38278-CMR will be incorporated into the final rule. The commenters note that Boeing has published a later revision of Document D6-38278-CMR than the one referenced in the NPRM.

We have revised this AD to refer to the latest revision of Document D6-38278-CMR because paragraphs (g) and (h) of this AD allow the use of later approved revisions of that document. That document has been revised since then to include additional AWLs associated with the incorporation of certain design changes. As stated previously, we might require those design changes and associated AWLs with separate rulemaking actions, but operators may choose to incorporate the new AWLs before then.

Request To Clarify Revision Date of Document D6-38278-CMR

The ATA, on behalf of its member U.S. Airways, notes that the "Changes to Fuel Tank System AWLs" and "Exceptional Short-Term Extensions" sections of the NPRM refer to Revision March 2006 of Document D6-38278-CMR. U.S. Airways believes that the correct revision date should be May 2006 to match the rest of the NPRM.

We infer the commenters request that we change the revision date to May 2006. We agree that the NPRM should have referred to Revision May 2006 of Document D6-38278-CMR because that revision, and other later approved revisions, are the subject of this AD. Revision March 2006 of Document D6-38278-CMR was originally included in the NPRM because the AWLs for fuel tank

systems were first incorporated in that document. However, we have not changed this AD since the paragraphs that the commenters refer to are not retained in the final rule.

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. 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

There are about 2,337 airplanes of the affected design in the worldwide fleet. The following table provides the estimated costs, at an average labor rate of \$80 per work hour, for U.S. operators to comply with this AD.

Estimated Costs					
Action	Work hours	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Maintenance program revision	8	None	\$640	672	\$430,080
Inspection	8	None	\$640	672	\$430,080

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), and
- (3) 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.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

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 AD:



2008-10-09 Boeing: Amendment 39-15515. Docket No. FAA-2007-28383; Directorate Identifier 2006-NM-180-AD.

Effective Date

(a) This airworthiness directive (AD) is effective June 12, 2008.

Affected ADs

(b) None.

Applicability

(c) This AD applies to all Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category.

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 (k) 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.

Unsafe Condition

(d) This AD results from a design review of the fuel tank systems. We are issuing this AD to prevent the potential for ignition sources inside fuel tanks caused by latent failures, alterations, repairs, or maintenance actions, which, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

Service Information Reference

(f) The term "Revision March 2008 of Document D6-38278-CMR," as used in this AD, means Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, Revision March 2008.

Maintenance Program Revision

(g) Before December 16, 2008, revise the FAA-approved maintenance program to incorporate the information specified in paragraph (g)(1) or (g)(2) of this AD, as applicable; except that the initial inspection required by paragraph (h) of this AD must be done at the applicable compliance time specified in that paragraph. Accomplishing the revision in accordance with a later revision of Document D6-38278-CMR is an acceptable method of compliance if the revision is approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA.

(1) For Model 737-100, -200, and -200C series airplanes: Section C, "FUEL SYSTEMS AIRWORTHINESS LIMITATIONS," including AWLs No. 28-AWL-01 through No. 28-AWL-20 inclusive, of Revision March 2008 of Document D6-38278-CMR. As an optional action, AWLs No. 28-AWL-21 through No. 28-AWL-23 inclusive, as identified in Section C of Revision March 2008 of Document D6-38278-CMR, also may be incorporated into the FAA-approved maintenance program.

(2) For Model 737-300, -400, and -500 series airplanes: Section C, "FUEL SYSTEMS AIRWORTHINESS LIMITATIONS," including AWLs No. 28-AWL-01 through No. 28-AWL-19 inclusive, Revision March 2008 of Document D6-38278-CMR. As an optional action, AWLs No. 28-AWL-20 through No. 28-AWL-22 inclusive, as identified in Section C of Revision March 2008 of Document D6-38278-CMR, also may be incorporated into the FAA-approved maintenance program.

Initial Inspection and Repair if Necessary

(h) For the airplanes identified in the "Applicability" column of AWL No. 28-AWL-03 of Section C of Revision March 2008 of Document D6-38278-CMR: At the later of the compliance times specified in paragraphs (h)(1) and (h)(2) of this AD, do a special detailed inspection of the lightning shield to ground termination on the out-of-tank fuel quantity indication system (FQIS) wiring to verify functional integrity, in accordance with AWL No. 28-AWL-03 of Section C of Revision March 2008 of Document D6-38278-CMR. If any discrepancy is found during the inspection, repair the discrepancy before further flight in accordance with AWL No. 28-AWL-03 of Section C of Revision March 2008 of Document D6-38278-CMR. Accomplishing the actions required by this paragraph in accordance with a later revision of Document D6-38278-CMR is an acceptable method of compliance if the revision is approved by the Manager, Seattle ACO. Accomplishing AWL No. 28-AWL-03 as part of an FAA-approved maintenance program before the applicable compliance time specified in paragraph (h)(1) or (h)(2) of this AD constitutes compliance with the requirements of this paragraph.

Note 2: For the purposes of this AD, a special detailed inspection is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. The examination is likely to make extensive use of specialized inspection techniques and/or equipment. Intricate cleaning and substantial access or disassembly procedure may be required."

(1) Within 120 months since the date of issuance of the original standard airworthiness certification or the date of issuance of the original export certificate of airworthiness.

(2) Within 24 months after the effective date of this AD.

No Alternative Inspections, Inspection Intervals, or Critical Design Configuration Control Limitations (CDCCLs)

(i) After accomplishing the actions specified in paragraphs (g) and (h) of this AD, no alternative inspections, inspection intervals, or CDCCLs may be used unless the inspections, intervals, or CDCCLs are part of a later revision of Revision March 2008 of Document D6-38278-CMR that is

approved by the Manager, Seattle ACO; or unless the inspections, intervals, or CDCCLs are approved as an AMOC in accordance with the procedures specified in paragraph (k) of this AD.

Credit for Actions Done According to Previous Revisions of the Service Information

(j) Actions done before the effective date of this AD in accordance with the Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, Revision May 2006; Revision September 2006; or Revision November 2007; are acceptable for compliance with the corresponding requirements of paragraphs (g) and (h) of this AD.

Alternative Methods of Compliance (AMOCs)

(k)(1) The Manager, Seattle ACO, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Material Incorporated by Reference

(1) You must use Boeing 737-100/200/200C/300/400/500 Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D6-38278-CMR, Revision March 2008, to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207.

(3) You may review copies of the service information incorporated by reference at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on April 29, 2008.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E8-9922 Filed 5-7-08; 8:45 am]