

[Federal Register: May 29, 2008 (Volume 73, Number 104)]
[Rules and Regulations]
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[DOCID:fr29my08-4]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-28389; Directorate Identifier 2006-NM-171-AD; Amendment 39-15536; AD 2008-11-13]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 777-200, -200LR, -300, and -300ER Series Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Boeing Model 777-200, -200LR, -300, and -300ER series airplanes. This AD requires revising the Airworthiness Limitations (AWLs) section of the Instructions for Continued Airworthiness by incorporating new limitations for fuel tank systems to satisfy Special Federal Aviation Regulation No. 88 requirements. This AD also requires the initial performance of certain repetitive inspections specified in the AWLs to phase in those inspections, and repair if necessary. 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 fuel tank explosions and consequent loss of the airplane.

DATES: This AD becomes effective July 3, 2008.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of July 3, 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: Margaret Langsted, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6500; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a supplemental notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to certain Boeing Model 777-200, -200LR, -300, and -300ER series airplanes. That supplemental NPRM was published in the Federal Register on February 28, 2008 (73 FR 10698). That supplemental NPRM proposed to require revising the Airworthiness Limitations (AWLs) section of the Instructions for Continued Airworthiness (ICA) by incorporating new limitations for fuel tank systems to satisfy Special Federal Aviation Regulation No. 88 (SFAR 88) requirements. That supplemental NPRM also proposed to require the initial performance of certain repetitive inspections specified in the AWLs to phase in those inspections, and repair if necessary.

Actions Since NPRM Was Issued

Since we issued the NPRM, Boeing has issued Temporary Revision (TR) 09-014, dated December 2007. Boeing TR 09-014 is published as Section 9 of the Boeing 777 Maintenance Planning Document (MPD) Document, D622W001-9, Revision February 2008 (hereafter referred to as "Revision February 2008 of the MPD"). The supplemental NPRM referred to Revision October 2007 of the MPD as the appropriate source of service information for accomplishing the proposed actions. Revision February 2008 of the MPD 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 February 2008 of the MPD. 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 Revision October 2007 or Revision December 2007 of the MPD are acceptable for compliance with the corresponding requirements of paragraphs (g) and (h) of this AD.

Operators should note that we have revised paragraph (g)(2) of this AD to require incorporating only AWLs No. 28-AWL-01 through No. 28-AWL-20 inclusive. AWLs No. 28-AWL-21 through No. 28-AWL-26 were added in Revision December 2007 of the MPD for Model 777-200LR series airplanes equipped with an auxiliary fuel tank. We might issue additional rulemaking to require the incorporation of those AWLs. However, as an optional action, operators may incorporate those optional AWLs as specified in paragraph (g)(2) of this AD. Operators should also note that we might issue a separate NPRM that proposes to incorporate AWL No. 28-AWL-19 and No. 28-AWL-20 into the AWLs section of the ICA and the associated design change.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

Support for the Supplemental NPRM

Boeing, American Airlines, and United Airlines (UAL) concur with the contents of the supplemental NPRM. The Air Transport Association (ATA) agrees with the intent of the supplemental NPRM.

Request for Clarification of Paragraph (g)

The ATA, on behalf of UAL, submitted a comment stating that there might be a logic error in the proposed requirement of paragraph (g) of the supplemental NPRM. UAL states that it understands that the proposed action is to revise the AWLs section of the ICA to "Incorporate the MPD into the MPD."

We infer that the commenters request that we clarify the requirements of paragraph (g) of this AD. We agree that clarification is necessary. The intent of paragraph (g) of this AD is to require the operator to incorporate Subsections D and E of Revision February 2008 of the MPD into the operator's existing MPD. We have deleted the words "into the MPD" from paragraph (g) of this AD to eliminate any confusion.

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

The ATA, on behalf of Continental Airlines (CAL), submitted a request to revise the loop resistance values for AWL No. 28-AWL-03 of Revision October 2007 of the MPD to reflect the appropriate limits for in-service airplanes. CAL states that the limits in AWL No. 28-AWL-03 reflect factory limits, and that mandating those limits would result in non-compliance and ground the Model 777 fleet. CAL states that the limits in AWL No. 28-AWL-03 should be harmonized with the limits in Tables 601 and 602 of Task 05-55-54-200-801 of the Boeing 777 Airplane Maintenance Manual (AMM), which contain bonding resistance values for in-service airplanes. CAL further requests that the new limits be published before May 2008, so that operators have adequate time to develop the necessary task cards before the required compliance time of paragraph (g) of this AD.

We agree that the loop resistance values for AWL No. 28-AWL-03 of Revision October 2007 of the MPD needed to be revised. Boeing published Revision February 2008 of the MPD to specify the appropriate values, which agree with the AMM. As stated previously, we have revised this AD accordingly.

Request To Clarify Paragraph (i)

The ATA, on behalf of UAL, requests that we clarify paragraph (i) of the supplemental NPRM. UAL interprets paragraph (i) to mean that, prior to the accomplishment of paragraphs (g) and (h) of the supplemental NPRM, an operator is allowed to use alternative inspections, inspection intervals, or critical design configuration control limitations (CDCCLs), which are not part of subsequent revisions of Revision October 2007 of the MPD. UAL states that, if this interpretation is true, then paragraph (i) might be in conflict with section 121.1113 ("Fuel tank system maintenance program") of the Federal Aviation Regulations (14 CFR 121.1113). UAL asks us to clarify whether paragraph (i) suspends the intent of 14 CFR 121.1113 and allows deviations until paragraphs (g) and (h) are complied with.

We disagree with UAL's interpretation that this AD conflicts with 14 CFR 121.1113. The two requirements are entirely compatible. That section requires that, no later than December 16, 2008, operators must incorporate applicable inspections, procedures, and limitations for fuel tank systems that have been approved under SFAR 88. The AWLs required by this AD are a portion of the SFAR 88 documents approved for these airplanes. Since the compliance date for this AD was chosen to coincide with the compliance date for 14 CFR 121.1113, compliance with this AD by that date will also be partial compliance with 14 CFR 121.1113, and neither that section nor this AD impose requirements before that date. Paragraph (i) of this AD is also consistent with 14 CFR 121.1113 in that both prohibit changing the requirements unless the changes are approved by the Seattle Aircraft Certification Office (ACO), which is the oversight office for this airplane model. No change to this AD is necessary in this regard.

Request To Clarify Use of Equivalent Tools and Chemicals

JAL requests that we provide guidelines for using equivalent tools and chemical materials according to the component maintenance manuals (CMMs). JAL states that normally operators can use equivalents without FAA approval when the CMM specifies that equivalents may be used. JAL also states that it has received further clarification from Boeing specifying that unless a CDCCL refers to a certain tool by part number or certain chemicals by name, an operator can continue to use equivalent tools or materials according to the CMMs.

We acknowledge the commenter's request and are working with Boeing to provide appropriate flexibility while still ensuring that items critical for maintaining safety continue to be specifically identified in the CMMs. However, to delay issuance of this AD would be inappropriate.

We agree that when the CMMs allow use of equivalent tools or chemical materials, operators and repair stations may use equivalents. We have already approved the use of the CMMs at the revision levels specified in Revision February 2008 of the MPD, including the use of equivalent tools or chemicals where the CMMs state equivalents are allowed. If the CMM does not allow use of an equivalent, none may be used. No change to this AD is necessary in this regard.

Request To Delete Reference to Task Cards

All Nippon Airways (ANA) requests that we delete the words "and task card," unless the task card references are listed in Subsection D of the MPD or Appendix 1 of the AD. Those words are located in the following sentence in the "Ensuring Compliance with Fuel Tank System AWLs" section of the original NPRM: "Operators that do not use Boeing's revision service should revise their maintenance manuals and task cards to highlight actions tied to CDCCLs to ensure that maintenance personnel are complying with the CDCCLs." ANA believes that if a task card refers to the AMM, which includes the CDCCL note, then highlighting the CDCCL items is not necessary because they are already highlighted in the AMM and maintenance personnel always refer to the AMM. ANA further states that the applicable task card references are not listed in Subsection D of the MPD, or in Appendix 1 of the original NPRM; they refer only to the AMM. ANA, therefore, states that it is difficult to find out or distinguish the affected task card.

JAL believes that the proposed requirement regarding the CDCCLs is to incorporate the manufacturer's maintenance manuals into an operator's maintenance manual. If the description of a CDCCL is missing from the manufacturer's AMM, then JAL believes that operators are not responsible for the requirements of the AD.

We agree that the task cards might not need to be revised because an operator might find that the AMM notes are sufficient. However, we disagree with deleting the reference to the task cards since some operators might need to add notes to their task cards. This AD does not require any changes to the maintenance manuals or task cards. The AD requires incorporating new AWLs into the operator's maintenance program. It is up to the operator to determine how best to ensure compliance with the new AWLs. In the "Ensuring Compliance with Fuel Tank System AWLs" section of the original NPRM, we were only suggesting, not requiring, ways that an operator could implement CDCCLs into its maintenance program. We have not changed this AD in this regard.

Request To Clarify Meaning of Task Cards

JAL requests that we clarify whether "task cards," as found in the "Recording Compliance with Fuel Tank System AWLs" section of the original NPRM, means Boeing task cards only or if they also include an operator's unique task cards.

We intended that "task cards" mean both Boeing and an operator's unique task cards, as applicable. The intent is to address whatever type of task cards are used by mechanics for maintenance. This AD would not require any changes to the AMMs or task cards relative to the

CDCCLs. We are only suggesting ways an operator might implement CDCCLs into its maintenance program. No change to this AD is necessary in this regard.

Request To Revise Intervals for Certain AWL Inspections

KLM Royal Dutch Airlines (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 revising certain AWL inspection intervals from 16,000 flight cycles/3,000 days to only 6,000 days for Model 777 airplanes.

We infer that KLM requests we revise paragraph (h) of this AD to extend the compliance time to 6,000 days for AWLs No. 28-AWL-01 and No. 28-AWL-03. We disagree because we have determined that it would be inappropriate to extend the inspection intervals. Given the safety implications for these inspections, 6,000 days (approximately over 16 years) is too long, especially since these areas are accessed more frequently than every 16 years for maintenance. Also, KLM did not include any reliability information showing that the systems can continue to safely operate between the proposed inspection periods. 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. No change to this AD is necessary in this regard.

Request To Require Latest Revision of the AMM

JAL requests that we revise the original NPRM to require incorporation of the latest revision of the manufacturer's AMM. JAL asserts that we have allowed Boeing to include statements in the Boeing AMM allowing operators to use certain CMM revision levels or later revisions. JAL states that, with the exception of the CMM, operators cannot find what revision level of the AMM needs to be incorporated into the operator's AMM in order to comply with the proposed requirements of the original NPRM. JAL also states that it could take several weeks to incorporate the manufacturer's AMM.

JAL further requests that we clarify whether it is acceptable to change the procedures in the AMM with Boeing's acceptance. JAL states that the MPD notes that any use of parts, methods, techniques, or practices not contained in the applicable CDCCL and AWL inspection must be approved by the FAA office that is responsible for the airplane model type certificate, or applicable regulatory agency. JAL also states that the Boeing AMM or CMM notes to obey the manufacturer's procedures when doing maintenance that affects a CDCCL or AWL inspection. However, JAL believes that according to the original NPRM it is acceptable to change the AMM procedures with Boeing's acceptance.

We disagree with the changes proposed by the commenter. This AD does not require revising the AMM. This AD does require revising your maintenance program to incorporate the AWLs identified in Revision February 2008 of the MPD. However, complying with the AWL inspections or CDCCLs will require other actions by operators including AMM revisions. In the U.S., operators are not required to use original equipment manufacturer (OEM) maintenance manuals. Operators may develop their own manuals, which are reviewed and accepted by the FAA Flight Standards Service. In order to maintain that flexibility for operators, all of the AWLs contain all of the critical information, such as maximum bonding resistances and minimum separation requirements. The FAA Flight Standards Service will only accept operator manuals that contain all of the information specified in the AWLs, so there is no need to require operators to use the OEM maintenance manuals.

Regarding JAL's request for clarification of approval of AWL changes, we infer JAL is referring to the following sentence located in the "Changes to AMMs Referenced in Fuel Tank System AWLs"

section of the original NPRM: "A maintenance manual change to these tasks may be made without approval by the Manager, Seattle ACO, through an appropriate FAA principal maintenance inspector (PMI) or principal avionics inspector (PAI), by the governing regulatory authority, or by using the operator's standard process for revising maintenance manuals." If changes need to be made to tasks associated with an AWL, they may be made using an operator's normal process without approval of the Seattle ACO, as long as the change maintains the information specified in the AWL. For some CDCCLs, it was beneficial to not put all the critical information into the MPD. This avoids duplication of a large amount of information. In these cases, the CDCCL refers to a specific revision of the CMM. U.S. operators are required to use those CMMs. Any changes to the CMMs must be approved by the Seattle ACO.

Request To Revise AMM Task 28-11-00

The ATA, on behalf of CAL, submitted a comment regarding AWL No. 28-AWL-01, which specifies doing repetitive detailed inspections of the wire bundles routed over the center fuel tank and under the main deck floor boards to detect damaged clamps, wire chafing, and any wire bundle that is in contact with the surface of the center fuel tank. The AWL specifies doing the inspection in accordance with Task 28-11-00 of the Boeing 777 AMM. CAL states that, according to the definition for a detailed inspection in the Enhanced Airworthiness Program for Airplane Systems (EAPAS) Participant Guide, dated August 2007, a detailed inspection may include a tactile assessment in which a component or assembly is checked for tightness and security (to ensure continued integrity of installations such as bonding jumpers and terminal connectors). CAL states that the inspection for tightness and security might require the disassembly of the wire installation, but that there are no re-installation procedures in the current routine manuals. CAL also states that maintenance personnel have to disassemble the entire wire bundle installation to accomplish the detailed inspection in Task 28-11-00-210-801 of the Boeing 777 AMM. According to CAL, this action, in the past, has created more discrepancies with wire bundle installations.

We infer the commenters request that Boeing revise Task 28-11-00 of the Boeing 777 AMM to include procedures for re-installation of the wire bundles. We do not agree that the Boeing 777 AMM needs to be revised. This inspection does not require any disassembly of wire bundle installations because, as CAL points out, disassembly might create an unsafe condition. The guidance for a detailed inspection provided by the Maintenance Steering Group 3 (MSG-3) and EAPAS includes a tactile assessment of bundle security, which uses the mechanic's hands to pull on the bundle. A visual inspection is not sufficient. The tactile assessment is intended to be a non-intrusive inspection. No change to this AD is necessary in this regard.

Request To Revise AMM Task 28-11-00-210-801

The ATA, on behalf of CAL, submitted a comment regarding Task 28-11-00-210-801 of the Boeing 777 AMM for accomplishing a detailed inspection of the wire bundles between the main deck and the top surface of the center fuel tank. (Task 28-11-00 is referenced in AWL No. 28-AWL-01 of Revision February 2008 of the MPD.) CAL states that the task procedures do not provide specific details or information for the wire bundle installation to ensure that maintenance personnel can comply with the design requirements. CAL also states that the wire bundle installation has been modified according to Boeing Alert Service Bulletin 777-57A0050, dated January 26, 2006; and Boeing Alert Service Bulletin 777-57A0051, dated May 15, 2006. CAL states that it provided comments to the NPRM that propose to mandate the accomplishment of those service bulletins. (That NPRM (Docket No. FAA-2007-27042) was published in the Federal Register on January 29, 2007 (72 FR 3956).)

We infer the commenters request that Boeing revise Task 28-11-00-210-801 of the Boeing 777 AMM to provide specific details for the wire bundle installation. We do not agree that the Boeing 777 AMM needs to be revised because specific design information is not needed for accomplishing

this inspection. The type and location of the wiring over the center fuel tank can vary among airplanes, and these details are not necessary to complete the inspection. AWL No. 28-AWL-01 is concerned with wire installation failures that will eventually lead to arcing through the top surface of the tank. That AWL and the referenced AMM provide for the type of failures that might progress to arcing, and any wire bundle in that area needs to be inspected. No change to this AD is necessary in this regard.

Request To Revise AMM by Including Warning Statements

The ATA, on behalf of CAL, submitted a comment regarding Tasks 28-11-00-210-801 and 05-55-54-200-801 of the Boeing 777 AMM. CAL states that these tasks do not contain CDCCL warning statements to alert maintenance personnel of their importance to regulatory compliance requirements.

We infer the commenters request that Boeing revise the Boeing 777 AMM to include warning statements as stated by CAL. We do not agree that the Boeing 777 AMM needs to be revised because Step A.(1) of the relevant AMM sections contains notes about the CDCCLs. The FAA and Boeing chose to use notes, not warning statements, because we did not want to undermine other sections of the AMM, which are not tied to AWLs but are still necessary for maintaining the airplane. If CAL determines that a different approach would work better for its maintenance program, it can develop a different system with the help of its PMI or PAI. No change to this AD is necessary in this regard.

Request To Publish Manuals for Maintenance Personnel

The ATA, on behalf of CAL, submitted a comment stating that CAL is concerned that not enough attention has been given to ensure that specific detailed inspections are preserved for the long-term operation of its Model 777 fleet. CAL states that, other than some generic information found in Revision October 2007 of the MPD, there are no published maintenance documents for continuous airworthiness available to show each specific requirement as detailed in the airplane production drawings, such as Task 05-55-54-200-801 of the Boeing 777 AMM. CAL further states that information detailed by the airplane production drawing must be available in manuals that are routinely used by the maintenance personnel. CAL asserts that making this information available will prevent the inadvertent reversal of the designated configuration, which could lead to violation of the supplemental NPRM, in addition to compromising the higher level of safety intended for the Model 777 fleet.

CAL believes the current program, as provided by AWLs No. 28-AWL-01 and No. 28-AWL-03 of Revision October 2007 of the MPD, is not ready to be implemented. CAL states that, if those AWLs are mandated as proposed, CAL would not be able to incorporate those AWLs in its Model 777 fleet, and a high risk of future de-modification of the wire bundles would exist for airplanes on which those AWLs could be implemented. CAL recommends that we coordinate with Boeing regarding the changes it requests in the previous comments.

We infer the commenters request that we delay issuance of the final rule until Boeing publishes manual(s) containing detailed information for maintenance personnel to accomplish the required AWL inspections. We disagree. To delay this action would be inappropriate, since we have determined that an unsafe condition exists and that the actions required by this AD must be mandated to ensure continued safety.

The amount of detail within the Boeing 777 AMM needs to be balanced, and it might not be the same for every operator. The FAA and Boeing have worked together to define what design requirements need to be included in the AMMs for fuel tank ignition prevention features. If the AMMs are overly specific, they might be too voluminous to be used effectively and would be prone to errors, since wiring installations vary among airplanes. The amount of information needed to be included in the AMMs will also vary among operators, depending on the processes and training for a given operator. If CAL determines more detailed design information needs to be included in its

AMMs, CAL can work with its PMI or PAI and Boeing to add that information. No change to this AD is necessary in this regard.

Request To Delete Reference to Parts Manufacturer Approval (PMA) Parts

ANA requests that we delete the words "Any use of parts (including the use of parts manufacturer approval (PMA) approved parts)," unless a continuous supply of CMM-specified parts is warranted or the FAA is open 24 hours to approve alternative parts for in-house repair by the operator. Those words are located in the following sentence in the "Changes to CMMs Cited in Fuel Tank System AWLs" section of the original NPRM: "Any use of parts (including the use of parts manufacturer approval (PMA) approved parts), methods, techniques, and practices not contained in the CMMs needs to be approved by the Manager, Seattle ACO, or governing regulatory authority."

ANA states that in some cases the parts specified in the CMMs cannot be obtained from the parts market or directly from the component vendor, so an operator is forced into using alternative parts to keep its schedule. ANA requests that we direct the component vendor to ensure a continuous supply of CMM parts and to direct the component vendor to remedy a lack of parts if parts are not promptly supplied. ANA further requests that we direct the component vendor to promptly review the standard parts and allow use of alternative fasteners and washers listed in Boeing D590. ANA asserts that, in some cases, a component vendor specifies the uncommon part to preserve its monopoly.

We disagree with revising the "Changes to CMMs Cited in Fuel Tank System AWLs" section of the original NPRM. We make every effort to identify potential problems with the parts supply, and we are not aware of any problems at this time. The impetus to declare overhaul and repair of certain fuel tank system components as CDCCLs arose from in-service pump failures that resulted from repairs not done according to OEM procedures. We have approved the use of the CMMs—including parts, methods, techniques, and practices—at the revision levels specified in Revision February 2008 of the MPD. Third-party spare parts, such as parts approved by PMA, have not been reviewed. We expect that such parts might be found to be acceptable alternatives.

An operator may submit a request to the Seattle ACO, or governing regulatory authority, for approval of an AMOC if sufficient data are submitted to substantiate that use of an alternative part would provide an acceptable level of safety. The CDCCLs do not restrict where repairs can be performed, so an operator may do the work in-house as long as the approved CMMs are followed. If operators would like to change those procedures, they can request approval of the changes. The FAA makes every effort to respond to operators' requests in a timely manner. If there is a potential for disrupting the flight schedule, the operator should include that information in its request. Operators should request approval for the use of PMA parts and alternative procedures from the FAA or the governing regulatory authority in advance in order to limit schedule disruptions. We have not changed this AD in this regard.

Request To Identify Other Test Equipment

JAL states that certain test equipment is designated in the MPD and that additional equipment should also be designated. For example, AWL No. 28-AWL-03 would require using loop resistance tester, part number (P/N) 906-10246-2 or -3. Therefore, JAL requests that we also identify alternative test equipment, so that operators do not need to seek an AMOC to use other equipment.

We disagree with identifying other test equipment. We cannot identify every possible piece of test equipment. We ensure that some are listed as recommended by the manufacturer. With substantiating data, operators can request approval of an alternative tester from the Seattle ACO, or the governing regulatory agency. We have not changed this AD in this regard.

Request To Clarify AWL No. 28-AWL-02

JAL requests that we clarify the intent of AWL No. 28-AWL-02. JAL states that Chapters 53-01 and 53-21 of the Boeing 777 AMM specify doing an inspection of the external wires over the center fuel tank according to AMM 28-11-00 before installing the floor panel over the center wing tank based on AWL No. 28-AWL-02. JAL also states that, according to Revision March 2006 of the MPD, AWL No. 28-AWL-02 contains two limitations: Maintaining the existing wire bundle routing and clamping, and installing any new wire bundle per the Boeing standard wiring practices manual (SWPM). Therefore, JAL believes it is not necessary to inspect the external wires over the center fuel tank according to AMM 28-11-00 before installing the floor panel over the center wing tank, unless that wire bundle routing and clamping are changed.

We point out that AWL No. 28-AWL-02 also contains a third limitation: Verifying that all wire bundles over the center fuel tank are inspected according to AWL No. 28-AWL-01, which refers to AMM 28-11-00 for accomplishing the inspection. We do not agree that the inspection should be required only if the wire bundle routing and clamping are changed while maintenance is accomplished in the area. If any of the other bundles have a clamp or routing failure, it must be detected and corrected. After accomplishing the inspection required by AWL No. 28-AWL-01, an operator would not need to repeat the inspection for another 16,000 flight cycles or 3,000 days, whichever is first. No change to this AD is necessary in this regard.

Request for Clarification for Recording Compliance With CDCCLs

JAL requests that we clarify the following sentence: "An entry into an operator's existing maintenance record system for corrective action is sufficient for recording compliance with CDCCLs, as long as the applicable maintenance manual and task cards identify actions that are CDCCLs." That sentence is located in the "Recording Compliance with Fuel Tank System AWLs" section of the original NPRM. Specifically, JAL asks whether an operator must indicate the CDCCL in their recording documents or whether it is sufficient for the recording document to call out the applicable AMMs that are tied to the CDCCLs.

We have coordinated with the FAA Flight Standards Service and it agrees that, for U.S.-registered airplanes, if the applicable AMMs and task cards identify the CDCCL, then the entry into the recording documents does not need to identify the CDCCL. However, if the applicable AMMs and tasks cards do not identify the CDCCL, then they must be identified. Other methods may be accepted by the appropriate FAA PMI or PAI, or governing regulatory authority. No change to this AD is necessary in this regard.

Request To Clarify Approval of CMM Changes

JAL requests that we clarify whether FAA approval is required for changes to the CMM. JAL states that, when it finds incorrect instructions, typographical errors, or vague instructions in the CMM, it usually contacts the component manufacturer about those issues and revises the instructions in its own manuals. JAL states that those changes are not reflected in the CMM until the component manufacturer revises the CMM. JAL requests that we provide guidelines for CMM errors that do not require FAA approval.

Changes to the CMMs must be approved by the FAA, or governing regulatory authority, before the revised CMMs can be used. No change to this AD is necessary in this regard.

Conclusion

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously.

We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

We estimate that this AD affects 127 airplanes of U.S. registry. 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
AWLs revision	8	None	\$640	127	\$81,280
Inspection	8	None	\$640	127	\$81,280

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 have determined that 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

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 Federal Aviation Administration (FAA) amends § 39.13 by adding the following new airworthiness directive (AD):



2008-11-13 Boeing: Amendment 39-15536. Docket No. FAA-2007-28389; Directorate Identifier 2006-NM-171-AD.

Effective Date

- (a) This AD becomes effective July 3, 2008.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Boeing Model 777-200, -200LR, -300, and -300ER series airplanes; certificated in any category; with an original standard airworthiness certificate or original export certificate of airworthiness issued before December 5, 2007.

Note 1: Airplanes with an original standard airworthiness certificate or original export certificate of airworthiness issued on or after December 5, 2007, must be already in compliance with the airworthiness limitations (AWLs) specified in this AD because those limitations were applicable as part of the airworthiness certification of those airplanes.

Note 2: 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 fuel tank explosions and consequent loss of the airplane.

Compliance

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

Service Information

(f) The term "Revision February 2008 of the MPD," as used in this AD, means Boeing Temporary Revision (TR) 09-014, dated December 2007. Boeing TR 09-014 is published as Section

Revision of Airworthiness Limitations (AWLs) Section

(g) Before December 16, 2008, revise the AWLs section of the Instructions for Continued Airworthiness (ICA) by incorporating the information in the subsections specified in paragraphs (g)(1) and (g)(2) of this AD; except that the initial inspections specified in paragraph (h) of this AD must be done at the compliance times specified in paragraph (h) of this AD.

(1) Subsection D, "AIRWORTHINESS LIMITATIONS—SYSTEMS," of Revision February 2008 of the MPD.

(2) Subsection E, "PAGE FORMAT: FUEL SYSTEMS AIRWORTHINESS LIMITATIONS," AWLs No. 28-AWL-01 through No. 28-AWL-20 inclusive, of Revision February 2008 of the MPD. As an optional action, AWLs No. 28-AWL-21 through No. 28-AWL-26 inclusive, as identified in Subsection E of Revision February 2008 of the MPD, also may be incorporated into the AWLs section of the ICA.

Initial Inspections and Repair

(h) Do the inspections required by paragraphs (h)(1) and (h)(2) of this AD at the compliance times specified in paragraphs (h)(1) and (h)(2), in accordance with the applicable AWLs described in Subsection E of Revision February 2008 of the MPD. If any discrepancy is found during these inspections, repair the discrepancy before further flight in accordance with Revision February 2008 of the MPD.

(1) At the later of the times specified in paragraphs (h)(1)(i) and (h)(1)(ii) of this AD, do a detailed inspection of external wires over the center fuel tank for damaged clamps, wire chafing, and wire bundles in contact with the surface of the center fuel tank, and repair any discrepancy, in accordance with AWL No. 28-AWL-01. Accomplishing AWL No. 28-AWL-01 as part of an FAA-approved maintenance program before the applicable compliance time specified in paragraph (h)(1)(i) or (h)(1)(ii) of this AD constitutes compliance with the requirements of this paragraph.

(i) Before the accumulation of 16,000 total flight cycles, or within 3,000 days 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.

(ii) Within 72 months after the effective date of this AD.

Note 3: For the purposes of this AD, a detailed inspection is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required."

(2) At the later of the times specified in paragraphs (h)(2)(i) and (h)(2)(ii) of this AD, do a special detailed inspection (resistance test) of the lightning shield-to-ground termination of the out tank wiring of the fuel quantity indicating system (FQIS) and, as applicable, repair (restore) the bond to ensure the shield-to-ground termination meets specified resistance values, in accordance with AWL No. 28-AWL-03. Accomplishing AWL No. 28-AWL-03 as part of an FAA-approved maintenance program before the applicable compliance time specified in paragraph (h)(2)(i) or (h)(2)(ii) of this AD constitutes compliance with the requirements of this paragraph.

(i) Before the accumulation of 16,000 total flight cycles, or within 3,000 days 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.

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

Note 4: 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."

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 February 2008 of the MPD that is approved by the Manager, Seattle Aircraft Certification Office (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 MPD

(j) Actions done before the effective date of this AD in accordance with Section 9 of the Boeing 777 MPD Document, D622W001-9, Revision October 2007; or Revision December 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, FAA, ATTN: Margaret Langsted, Aerospace Engineer, Propulsion Branch, ANM-140S, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6500; fax (425) 917-6590; has the authority to approve AMOCs for this AD, if requested using 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 Temporary Revision (TR) 09-014, dated December 2007, to the Boeing 777 Maintenance Planning Document (MPD) Document, D622W001-9, to do the actions required by this AD, unless the AD specifies otherwise. Boeing TR 09-014 is published as Section 9 of the Boeing 777 Maintenance Planning Document (MPD) Document, D622W001-9, Revision February 2008. (The List of Effective Pages for Section 9 of Boeing 777 Maintenance Planning Document (MPD) Document, D622W001-9, Revision February 2008, contains numerous errors. However, the revision/date identified on the individual pages of the document are correct.)

(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 May 14, 2008.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E8-11467 Filed 5-28-08; 8:45 am]