[Federal Register: February 16, 2005 (Volume 70, Number 31)]
[Rules and Regulations]
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[DOCID:fr16fe05-3]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2004-18759; Directorate Identifier 2003-NM-280-AD; Amendment 39-13973; AD 2005-04-01]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 707-100, -100B, -300, -300B (Including -320B Variant), -300C, and -E3A (Military) Series Airplanes; Model 720 and 720B Series Airplanes; Model 737-100, -200, -200C, -300, -400, and -500 Series Airplanes; and Model 747 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 transport category airplanes. This AD requires repetitive tests of the overwing fuel fill ports for certain wing tanks; an electrical bonding resistance test between the bulkhead fittings of the engine fuel feed tube and the front spar inside the fuel tank of the wings; other specified actions; and applicable corrective actions if necessary. This AD is prompted by our determination that this AD is necessary to reduce the potential for ignition sources inside fuel tanks. We are issuing this AD to prevent arcing or sparking at the interface between the bulkhead fittings of the engine fuel feed tube and the front spar inside the fuel tank of the wings and between the overwing fuel fill ports and the airplane structure during a lightning strike. Such arcing or sparking could provide a possible ignition source for the fuel vapor inside the fuel tank and cause consequent fuel tank explosions.

DATES: This AD becomes effective March 23, 2005.

The incorporation by reference of certain publications listed in the AD is approved by the Director of the Federal Register as of March 23, 2005.

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

Docket: The AD docket contains the proposed AD, comments, and any final disposition. You can examine the AD docket on the Internet at *http://dms.dot.gov*, or in person at the Docket

Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (Telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Washington, DC. This docket number is FAA-2004-18759; the directorate identifier for this docket is 2003-NM-280-AD.

FOR FURTHER INFORMATION CONTACT:

Technical information: Sulmo Mariano, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6501; fax (425) 917-6590.

Plain language information: Marcia Walters, marcia.walters@faa.gov.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with an AD for certain Boeing Model 707-100, -100B, -300, -300B (including -320B variant), -300C, and -E3A (military) series airplanes; Model 720 and 720B series airplanes; Model 737-100, -200, -200C, -300, -400, and -500 series airplanes; and Model 747 airplanes. That action, published in the Federal Register on August 4, 2004 (69 FR 47031), proposed to require repetitive tests of the overwing fuel fill ports for certain wing tanks; an electrical bonding resistance test between the bulkhead fittings of the engine fuel feed tube and the front spar inside the fuel tank of the wings; other specified actions; and applicable corrective actions if necessary.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments that have been submitted on the proposed AD.

Support for Proposed AD

Several commenters support the intent of the proposed AD.

Request To Remove Certain Airplane Models

One commenter has no objection to doing the one-time electrical bonding resistance test in paragraph (h) of the proposed AD within the proposed 5-year compliance time. However, the commenter believes there is little or no data to substantiate that the identified unsafe condition exists on Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, other than similar design. The commenter states that the notice of proposed rulemaking (NPRM) is driven by testing done in accordance with SFAR 88 requirements, and according to the NPRM, one Model 747 series airplane was used for the basis of the NPRM. In addition, the commenter states that there is no data to validate testing requirements, since no root-cause has been differentiated between installation problems during manufacture, bonding breakdown, or in-service degradation.

From this comment, we infer that the commenter is requesting that Model 737-100, -200, -200C, -300, -400, and -500 series airplanes be removed from the applicability of this AD. We do not agree. The commenter is correct that a lightning test on a 747 wing fuel tank penetration showed a higher than expected electrical current in the fuel feed tubes inside the fuel tank, and that no tests were conducted on a 737 wing fuel tank penetration. However, the design of the wing fuel tank is identical to that of some Model 707 series airplanes and all Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. Therefore, all these airplanes are subject to the identified unsafe condition. We do not find it necessary to change the final rule in this regard.

Requests To Extend Compliance Time

Several commenters request that the proposed AD be revised to extend the 5-year compliance time specified in paragraph (h) of the proposed AD. One commenter suggests extending the compliance time to 8 years. Three commenters suggest extending the compliance time to 6 years. One commenter notes that there have not been any reported cases of arcing occurring at the interface between the bulkhead fittings of the engine fuel feed tube and the front spar inside the fuel tank of the wings and between the overwing fuel fill ports and the airplane structure on any of the affected fleet. The same commenter also notes that some of the fleets have been in service over 30 years. Given those facts, that commenter believes an equivalent level of safety can be maintained over the 6-year compliance time. The commenters contend that extending the compliance time will allow affected operators to do the required test during a regularly scheduled maintenance interval while adoption of the proposed compliance time of within 5 years would require operators to schedule special times to do the test, at additional expense.

We do not agree with the request to extend the compliance time specified in paragraph (h) of the final rule. The commenters provide no technical justification for revising the compliance time. The manufacturer has done a risk assessment analysis related to lightning strikes on the Model 707, 737, and 747 fleets and determined that an acceptable level of safety would be provided by a compliance time of five years for accomplishing the actions in the service bulletins (specified as the appropriate source of service information for the final rule). We agree with the manufacturer's assessment. We have determined that the initial compliance time of within five years after the effective date of the AD, as specified in paragraph (h) of the final rule, is appropriate. We do not find it necessary to change the final rule in this regard. However, if anyone wishes to provide technical justification, they may request an approval of an alternative method of compliance (AMOC) from us, in accordance with paragraph (k) of the final rule.

Requests To Allow Operator Equivalent Procedures for Draining and Access to the Fuel Tanks

Two commenters request that operator equivalent procedures (OEP) be allowed for draining and gaining access to the fuel tanks. One commenter states that it has established procedures for draining and accessing the fuel tank in accordance with 29 Code of Federal Regulations (CFR) part 1910.146, "Permit Required Confined Space Entry," and has maintained personnel proficiency by using these procedures.

We agree that OEPs may be allowed for draining and gaining access to the fuel tanks provided those procedures are FAA-accepted procedures. The use of OEPs for draining and gaining access to the fuel tank does not directly affect the means of correcting the unsafe condition. The use of OEPs may also reduce the costs of implementing the AD. Therefore, we have added a new paragraph (j) to the final rule stating: "Operators may use their own FAA-accepted equivalent procedures for draining the fuel tanks and gaining access to the fuel tanks." We also revised paragraphs (h) and (i) of the final rule by adding "except as provided by paragraph (j) of this AD" and we revised the paragraph numbering following paragraph (j) of the final rule.

Request To Remove Identification of Rear Spar With Service Bulletin Number

One commenter requests to remove the requirement to identify the forward surface of the front spar with the service bulletin number or equivalent as specified in Figures 1 and 2, step 18, of Boeing Alert Service Bulletin 737-28A1174 (cited as an appropriate source of service information in the NPRM). The commenter believes there is no real benefit to this action and that it creates additional exterior markings that must be maintained. The commenter contends that tracking accomplishment of the service bulletin via aircraft records should be sufficient.

We agree with the request to remove the requirement to identify the front spar with the service bulletin number or equivalent. We have determined that it is not necessary to identify the front spar in order to show compliance with this AD, because operators are required to record compliance with ADs in their airplane records. Therefore, we have added a new paragraph (k) in the final rule to explain this difference from the service bulletin.

Requests To Allow Equivalent Consumable Parts

Two commenters request to revise the proposed AD to allow operators to use equivalent consumable parts instead of the parts specified in Boeing Alert Service Bulletin 737-28A1174. The commenters believe that this provision would reduce the number of AMOC requests.

We do not agree with the requests to allow the use of equivalent consumable parts. No technical justification was provided nor any specifics of what these "equivalent consumable parts" are. We do not find it necessary to change the final rule in this regard. However, if anyone wishes to provide technical justification, they may request an approval of an AMOC from us, in accordance with paragraph (k) of the final rule.

Requests To Ensure That Parts are Available

Two commenters requests that we ensure that required parts are available within the 5-year compliance time. No justification was provided.

We do not agree. Most parts for doing the required actions are standard materials, like emery paper, coatings, paints, sealant, etc. The airplane maintenance facilities should have a ready supply of those materials. We have determined that the lead time for obtaining the required parts will not exceed the 5-year compliance time, and that operators should have enough time to coordinate the purchasing of any part or material not on the shelves when they schedule the work associated with the requirements of this AD. Therefore, we do not find it necessary to change the final rule in this regard.

Clarification of Affected Models

Boeing Alert Service Bulletin A3505, dated November 1, 2001, affects, among other airplane models, Model "707-320B" series airplanes, which are a variant of Model 707-300B series airplanes. This service bulletin does not affect other Model 707-300B series airplanes. Whereas, Boeing Service Bulletin 3513, dated November 6, 2003, affects, among other airplane models, Model "707-300B" series airplanes, including Model 707-320B variant. For clarification purposes, we have revised the final rule to refer to both models as Model "707-300B (-320 variant)" or "707-300B (including -320 variant)," as applicable.

Clarification of Cost Impact

We have revised the Cost Impact section of the final rule by adding the applicable service bulletin for the listed airplane models.

Conclusion

We have carefully reviewed the available data, including the comments that have been submitted, 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

This AD will affect about 4,303 airplanes worldwide. The average labor rate per hour is $65. The following table provides the estimated costs for U.S. operators to comply with this AD.

For model—	Work hours	Cost per airplane	Number of U.S.-airplane registered airplanes	Fleet cost
707–E3A (military), –100, –100B, –300, –300B (–320B variant), and –300C series airplanes; and 720 series airplanes; as listed in Boeing Alert Service Bulletin A3505, dated November 1, 2001.	16	$1,040	41	$42,640.
707–100, –100B, –300, –300B (incluidng –320 variant), and –300C series airplanes; and 720 and 720B series airplanes; as listed in Boeing Service Bulletin 3513, dated November 6, 2003.	Between 4 and 6	Between $260 and $390.	73	Between $18,980 and $28,470.
737–100, –200, –200C, –300, –400, and –500 series airplanes; as listed in Boeing Service Bulletin 737–28A1174, Revision 1, dated July 18, 2002.	8	$520	1,095	$569,400.
747–100, –100B, –100B SUD, –200B, –200C, –200F, –300, –400, –400D, and –400F series airplanes; and 747SP and 747SR series airplanes; as listed in Boeing Alert Service Bulletin 747–28A2239, Revision 1, dated October 17, 2002.	70.	$4,550	257	$1,169,350.
747–400 and –400F series airplanes, as listed in Boeing Alert Service Bulletin 747–28A2245, Revision 1, dated August 21, 2003.	18	$1,170	1	$1,170.

Authority for This Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. 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.

This rulemaking is promulgated under the authority described in subtitle VII, part A, subpart III, section 44701, "General requirements." Under that section, the FAA is charged 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 AD.

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. 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 FAA amends § 39.13 by adding the following new airworthiness directive (AD):

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

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

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) 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 14 CFR part 39, subpart 39.3).

2005-04-01 Boeing: Amendment 39-13973. Docket No. FAA-2004-18759; Directorate Identifier 2003-NM-280-AD.

Effective Date

(a) This AD becomes effective March 23, 2005.

Affected ADs

(b) None.

Applicability

(c) This AD applies to the airplanes listed in Table 1 of this AD, certificated in any category.

TABLE 1.—APPLICABILITY

Model—	As listed in—
(1) 707–E3A (military), –100, –100B, –300, –300B (–320B variant), and –300C series airplanes; and 720 series airplanes.	Boeing Alert Service Bulletin A3505, dated November 1, 2001.
(2) 707–100, –100B, –300, –300B (including –320B variant), and –300C series airplanes; and 720 and 720B series airplanes.	Boeing Service Bulletin 3513, dated November 6, 2003.
(3) 737–100, –200, –200C, –300, –400, and –500 series airplanes.	Boeing Service Bulletin 737–28A1174, Revision 1, dated July 18, 2002.
(4) 747–100, –100B, –100B SUD, –200B, –200C, –200F, –300, –400, –400D, and –400F series airplanes; and 747SP and 747SR series airplanes.	Boeing Alert Service Bulletin 747–28A2239, Revision 1, dated October 17, 2002.
(5) 747–400 and –400F series airplanes.	Boeing Alert Service Bulletin 747–28A2245, Revision 1, dated August 21, 2003.

Unsafe Condition

(d) This AD was prompted by our determination that this AD is necessary to reduce the potential for ignition sources inside fuel tanks. We are issuing this AD to prevent arcing or sparking at the interface between the bulkhead fittings of the engine fuel feed tube and the front spar inside the fuel tank of the wings and between the overwing fuel fill ports and the airplane structure during a

lightning strike. Such arcing or sparking could provide a possible ignition source for the fuel vapor inside the fuel tank and cause consequent fuel tank explosions.

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 Bulletins

(f) The term "service bulletin," as used in this AD, means the Work Instructions of the applicable service bulletins specified in the "As Listed In" column of Table 1 of this AD.

(g) Actions specified in paragraphs (h) through (i) of this AD that were done before the effective date of this AD in accordance with the applicable service information listed in Table 2 of this AD are acceptable for compliance with the applicable requirements of this AD.

TABLE 2.—ACCEPTABLE ORIGINAL ISSUES OF SERVICE BULLETINS

For model—	Boeing Alert Service Bulletin—
(1) 737–100, –200, –200C, –300, –400, and –500 series airplanes.	737–28A1174, dated December 20, 2001.
(2) 747–100, –100B, –100B SUD, –200B, –200C, –200F, –300, –400, –400D, and –400F series airplanes; and 747SP and 747SR series airplanes.	747–28A2239, dated November 29, 2001.
(3) 747–400 and –400F series airplanes.	747–28A2245, dated November 26, 2002.

Resistance Test, Other Specified Actions, and Corrective Actions

(h) For the airplanes identified in paragraphs (h)(1) through (h)(4) of this AD: Within 5 years after the effective date of this AD, do an electrical bonding resistance test between the bulkhead fittings of the engine fuel feed tube and the front spar inside the fuel tank of the wings to determine the resistance, and do other specified actions and applicable corrective actions, by accomplishing all the actions specified in paragraph 3.B. of the applicable service bulletin. Do the actions in accordance with the service bulletin, except as provided by paragraphs (j) and (k) of this AD. Do the applicable corrective actions before further flight.

(1) Model 707-E3A (military), -100, -100B, -300, -300B (-320B variant), and -300C series airplanes; and Model 720 series airplanes.

(2) Model 737-100, -200, -200C, -300, -400, and -500 series airplanes.

(3) Model 747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, -400, -400D, and -400F series airplanes; and Model 747SP and 747SR series airplanes.

(4) Model 747-400 and -400F series airplanes.

(i) For Model 707-100, -100B, -300, -300B (including -320B variant), and -300C series airplanes; and Model 720 and 720B series airplanes: Within 5 years after the effective date of this AD, do an electrical bonding resistance test of the over-wing fuel fill ports for the wing tanks No. 1 and No. 4 and the center wing tank to determine the resistance, and do applicable corrective actions, by accomplishing all the actions specified in paragraph 3.B. of the applicable service bulletin. Do the actions in accordance with the service bulletin, except as provided by paragraphs (j) and (k) of this AD. Do the applicable corrective actions before further flight. Repeat the electrical bonding resistance test thereafter at intervals not to exceed 14,000 flight hours.

FAA-Accepted Equivalent Procedures

(j) Operators may use their own FAA-accepted equivalent procedures for draining the fuel tanks and gaining access to the fuel tanks.

No Identification of Front Spar

(k) Although the service bulletin referenced in this AD specifies to identify the front spar on the visible forward surface with the service bulletin number or equivalent, this AD does not include that requirement.

Alternative Methods of Compliance (AMOCs)

(l) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

Material Incorporated by Reference

(m) You must use the service information that is specified in Table 3 of this AD to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approves the incorporation by reference of those documents in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. For copies of the service information, contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207. For information on the availability of this material at the National Archives and Records Administration (NARA), call (202) 741-6030, or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*. You may view the AD docket at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Nassif Building, Washington, DC.

TABLE 3.—MATERIAL INCORPORATED BY REFERENCE

Boeing—	Revision level	Date
(1) Alert Service Bulletin A3505	Original	November 1, 2001.
(2) Service Bulletin 3513	Original	November 6, 2003.
(3) Service Bulletin 737–28A1174	Revision 1	July 18, 2002.
(4) Alert Service Bulletin 747–28A2239	Revision 1	October 17, 2002.
(5) Alert Service Bulletin 747–28A2245	Revision 1	August 21, 2003.

Issued in Renton, Washington, on January 26, 2005.
Ali Bahrami,
Manager, Transport Airplane Directorate, Aircraft Certification Service.
[FR Doc. 05-2831 Filed 2-15-05; 8:45 am]
BILLING CODE 4910-13-P