

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 39**

[Docket No. FAA-2007-28349; Directorate Identifier 2007-NM-025-AD]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, and 747SP Series Airplanes**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).**ACTION:** Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Boeing Model 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, and 747SP series airplanes. This proposed AD would require reconfiguring the clamps of certain wire bundles and applying insulating sealant to certain fasteners inside the fuel tanks. This proposed AD results from fuel system reviews conducted by the manufacturer. We are proposing this AD to prevent arcing inside the fuel tanks in the event of a lightning strike or high-powered short circuit, which could result in a fuel tank explosion or fire.

DATES: We must receive comments on this proposed AD by July 20, 2007.**ADDRESSES:** Use one of the following addresses to submit comments on this proposed AD.

- *DOT Docket Web site:* Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.

- *Government-wide rulemaking Web site:* Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.

- *Mail:* Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590.

- *Fax:* (202) 493-2251.

- *Hand Delivery:* Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for the service information identified in this proposed AD.

FOR FURTHER INFORMATION CONTACT: Sulmo Mariano, Aerospace Engineer,

Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6501; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:**Comments Invited**

We invite you to submit any relevant written data, views, or arguments regarding this proposed AD. Send your comments to an address listed in the **ADDRESSES** section. Include the docket number "FAA-2007-28349; Directorate Identifier 2007-NM-025-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments received by the closing date and may amend the proposed AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD. Using the search function of that Web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477-78), or you may visit <http://dms.dot.gov>.

Examining the Docket

You may 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 DOT street address stated in the **ADDRESSES** section. Comments will be available in the AD docket shortly after the Docket Management System receives them.

Discussion

The FAA has examined the underlying safety issues involved in fuel tank explosions on several large transport airplanes, including the adequacy of existing regulations, the service history of airplanes subject to those regulations, and existing maintenance practices for fuel tank systems. As a result of those findings, we issued a regulation titled "Transport

Airplane Fuel Tank System Design Review, Flammability Reduction and Maintenance and Inspection Requirements" (66 FR 23086, May 7, 2001). In addition to new airworthiness standards for transport airplanes and new maintenance requirements, this rule included Special Federal Aviation Regulation No. 88 ("SFAR 88," Amendment 21-78, and subsequent Amendments 21-82 and 21-83).

Among other actions, SFAR 88 requires certain type design (*i.e.*, type certificate (TC) and supplemental type certificate (STC)) holders to substantiate that their fuel tank systems can prevent ignition sources in the fuel tanks. This requirement applies to type design holders for large turbine-powered transport airplanes and for subsequent modifications to those airplanes. It requires them to perform design reviews and to develop design changes and maintenance procedures if their designs do not meet the new fuel tank safety standards. As explained in the preamble to the rule, we intended to adopt airworthiness directives to mandate any changes found necessary to address unsafe conditions identified as a result of these reviews.

In evaluating these design reviews, we have established four criteria intended to define the unsafe conditions associated with fuel tank systems that require corrective actions. The percentage of operating time during which fuel tanks are exposed to flammable conditions is one of these criteria. The other three criteria address the failure types under evaluation: single failures, single failures in combination with a latent condition(s), and in-service failure experience. For all four criteria, the evaluations included consideration of previous actions taken that may mitigate the need for further action.

We have determined that the actions identified in this AD are necessary to reduce the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

We have received a report indicating that a certain type of fastener used in the fuel tank walls of Model 747 airplanes is insufficiently bonded to the airplane structure. Further, these fasteners do not have sufficient electrical insulation applied inside the fuel tanks to prevent arcing in the event of a lightning strike or high-powered short circuit. This condition, if not corrected, could result in a fuel tank explosion or fire.

Relevant Service Information

We have reviewed Boeing Special Attention Service Bulletin 747-57-2326, dated January 4, 2007, which describes procedures for applying insulating sealant to certain fasteners inside the main fuel tanks.

We have reviewed Boeing Special Attention Service Bulletin 747-57-2327, Revision 1, dated July 10, 2006, which describes procedures for reconfiguring the clamps of certain wire bundles by wrapping additional Teflon sleeving around the wire bundles, installing new, larger clamps, and sealing the ends of certain fasteners inside the auxiliary fuel tank, main fuel tanks, and surge tanks.

Accomplishing the actions specified in the service information is intended to adequately address the unsafe condition.

FAA's Determination and Requirements of the Proposed AD

We have evaluated all pertinent information and identified an unsafe condition that is likely to exist or develop on other airplanes of this same type design. For this reason, we are proposing this AD, which would require accomplishing the actions specified in the service information described previously.

Costs of Compliance

There are about 707 airplanes of the affected design in the worldwide fleet. This proposed AD would affect about 107 airplanes of U.S. registry. Depending on airplane configuration, the proposed actions would take between 106 and 448 work hours per airplane, at an average labor rate of \$80 per work hour. Required parts would cost between \$430 and \$2,074 per airplane. Based on these figures, the estimated cost of the proposed AD for U.S. operators is between \$8,910 and \$37,914 per airplane, or up to \$4,056,798 for all airplanes.

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 proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); 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 proposed 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, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

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

Boeing: Docket No. FAA-2007-28349; Directorate Identifier 2007-NM-025-AD.

Comments Due Date

- (a) The FAA must receive comments on this AD action by July 20, 2007.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Boeing Model 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, and 747SP series airplanes, certificated in any category; as identified in Boeing Special Attention Service Bulletin 747-57-2327, Revision 1, dated July 10, 2006; and Boeing Special Attention Service Bulletin 747-57-2326, dated January 4, 2007.

Unsafe Condition

(d) This AD results from fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent arcing inside the fuel tanks in the event of a lightning strike or high-powered short circuit, which could result in a fuel tank explosion or fire.

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.

Change and Seal

(f) Within 60 months after the effective date of this AD, do the actions required by paragraphs (f)(1) and (f)(2) of this AD.

(1) Reconfigure the wire bundle clamps and seal the ends of certain fasteners inside the auxiliary fuel tank, main fuel tanks, and surge fuel tanks; in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-57-2327, Revision 1, dated July 10, 2006.

(2) Seal the ends of certain fasteners inside the main fuel tanks, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-57-2326, dated January 4, 2007.

Alternative Methods of Compliance (AMOCs)

(g)(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, 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.

Issued in Renton, Washington, on May 25, 2007.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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