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EXHIBIT NO. 11J

**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.**

AIRWORTHINESS DIRECTIVE (AD) 96-26-06

(PAGES J-1 THRU J-7)

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [62 FR 304 NO. 2 01/03/97]

[Docket No. 96-NM-277-AD; Amendment 39-9870; AD 96-26-06]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to certain Boeing Model 747 series airplanes. This action requires a one-time inspection to detect damage of the sleeving and wire bundles of the boost pumps of the numbers 1 and 4 main fuel tanks, and of the auxiliary tank jettison pumps (if installed); replacement of any damaged sleeving with new sleeving; and repair or replacement of any damaged wires with new wires. For airplanes on which any burned wires are found, this action also requires an inspection to detect damage of the conduit, and replacement of any damaged conduit with a serviceable conduit. This amendment is prompted by an FAA determination that an environment conducive to vibration exists in the conduit and wire bundles of the boost pumps and of the auxiliary tank jettison pumps, which can cause abrasion of the Teflon sleeving and subsequent abrasion of the wires in the bundles. The actions specified in this AD are intended to detect and correct such abrasion, which could result in electrical arcing between the wires and the aluminum conduit and subsequent fire or explosion of the fuel tank.

DATES: Effective January 21, 1997.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of January 21, 1997.

Comments for inclusion in the Rules Docket must be received on or before March 4, 1997.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-103, Attention: Rules Docket No. 96-NM-277-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056.

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

FOR FURTHER INFORMATION CONTACT: G. Michael Collins, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (206) 227-2689; fax (206) 227-1181.

SUPPLEMENTARY INFORMATION: On July 17, 1996, a Boeing Model 747 series airplane broke up during climb over the Atlantic Ocean after takeoff from John F. Kennedy International Airport, Jamaica, New York. Although the National Transportation Safety Board (NTSB) has not determined the cause of the accident, it has identified mechanical failure

as one possible cause. The NTSB also stated that the center fuel tank exploded at some time during the accident. However, the NTSB has not determined if that explosion was the cause of the accident or the result of some other event. Following the accident, the FAA began investigating potential failures that could result in ignition sources in the fuel tanks installed on Model 747 series airplanes.

Other Relevant Rulemaking and Survey

As part of its investigation, the FAA reviewed the actions required by certain existing AD's, and the results of a survey conducted on in-service Model 747 series airplanes, as discussed below.

In 1979, the FAA issued AD 79-05-04, amendment 39-3431 (44 FR 12636, March 8, 1979). That AD was prompted by a report indicating that the fuel pump wires in an aluminum conduit in an auxiliary fuel tank on a Model 747 series airplane chafed through the insulation. Electrical arcing from the chafed wire to the aluminum conduit caused a hole in the conduit; however, the arcing did not cause a fire or explosion. The hole in the conduit was discovered because fuel leaked through the hole and out of the conduit at the rear spar.

AD 79-05-04 required discontinuing the use of the auxiliary fuel tanks, draining fuel from those tanks, and opening and collaring the circuit breakers for the auxiliary tank/jettison pumps. Those actions were required to be accomplished prior to further flight. The actions required by that AD affected 10 Model 747-200 series airplanes, unless Teflon sleeving had been installed on the wire bundles in accordance with Boeing Alert Service Bulletin 747-28A2091, Revision 1, dated February 5, 1979, or unless the pumps had been deactivated previously in accordance with Boeing Service Bulletin 747-28-2067, dated November 11, 1977. The FAA has been advised that use of the fuel tanks has been discontinued on eight of the affected airplanes, and that Teflon sleeving has been installed on the wire bundles of two of the affected airplanes.

Following the issuance of AD 79-05-04, a survey involving an inspection of the wires in the conduits for the numbers 1 and 4 fuel tank pumps was conducted on approximately 26 in-service Model 747 series airplanes. The results of that survey revealed that numerous wires in these conduits were chafing against the conduit. Although none of the wires inspected at that time had worn completely through the insulation, chafing through up to 80 percent of the total insulation thickness was found on numerous wires.

Based on these survey results, the FAA issued AD 79-06-02, amendment 39-3439 (44 FR 16362, March 19, 1979). That AD requires an inspection, repair, and modification of the outboard main fuel tanks (numbers 1 and 4) boost pump wires in the conduits located in the inboard main fuel tanks (numbers 2 and 3) on Model 747 series airplanes. Any chafed wires are required to be replaced, and Teflon sleeving is to be installed to prevent chafing or abrasion of the wires against the conduit. Those actions were required to be accomplished within 750 hours time-in-service or 2 months, whichever occurred first, after the airplane had accumulated either 6,000 or 30,000 total hours time-in-service, depending upon the type of wires installed. The modification required by AD 79-06-02 involves tying the wires together every six inches and installing two concentric Teflon sleeves over the wire bundle. The requirements of that AD were intended to prevent abrasion of the electrical wires of the fuel tank boost pumps.

Background Information

The numbers 1 and 4 main fuel tanks (outboard main tanks) on Model 747 series airplanes each have two boost pumps that are located in dry bays ("dog houses") inside the numbers 2 and 3 main fuel tanks (inboard main tanks). The

electrical power for these boost pumps is supplied by wiring routed through aluminum conduits inside the inboard main tanks. These conduits begin at the wing rear spar and end at the boost pump dog houses. The wires are separated from the conduit by two concentric Teflon sleeves that are installed over the wire bundles.

The auxiliary tank jettison pumps, if installed, are located in the auxiliary fuel tanks. These pumps are mounted in dog houses inside the auxiliary fuel tanks. The electrical power for these pumps is routed through aluminum conduit inside the auxiliary fuel tanks, similar to the conduit of the boost pumps for the numbers 1 and 4 main fuel tanks.

Vibration of the conduit and wire bundles can cause abrasion of the Teflon sleeving, which could lead to abrasion of the wires in the bundles. Such abrasion, if not corrected, could result in electrical arcing between the wires and the aluminum conduit and subsequent fire or explosion of the fuel tank.

FAA's Determinations

The FAA finds that an environment conducive to vibration still exists in the conduit and wire bundles of the fuel boost pumps and the auxiliary tank jettison pumps (if installed). The FAA has determined that wire chafing has occurred on Model 747 series airplanes inside other conduits located outside the main fuel tanks in the vicinity of the conduits addressed in AD 79-06-02. In some cases, chafing through both the Teflon sleeving and the wire insulation has occurred on these airplanes [reference AD 96-03-14, amendment 39-9511 (61 FR 6500, February 21, 1996), and AD 89-14-04, amendment 39-6246 (54 FR 27157, June 28, 1989)]. The FAA concludes that follow-on inspections of the Teflon sleeving must be accomplished to determine if the sleeving continues to provide a protective barrier after extended time in service.

Explanation of Relevant Service Information

The FAA reviewed and approved Boeing Alert Service Bulletin 747-28A2204, dated December 19, 1996, which describes procedures for a one-time inspection to detect damage of the sleeving and wire bundles of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks, and of the wire bundles of the auxiliary tank jettison pumps (if installed); and repair or replacement of damaged parts with new parts. For airplanes on which any burned wires are found, the alert service bulletin describes procedures for an inspection to detect damage of the conduit, and replacement of any damaged conduit with a serviceable conduit.

Explanation of the Requirements of the Rule

Since an unsafe condition has been identified that is likely to exist or develop on other Boeing Model 747 series airplanes of the same type design, this AD is being issued to detect and correct abrasion of the Teflon sleeving and wires in the bundles of the fuel boost pumps for the numbers 1 and 4 main fuel tanks, which could result in electrical arcing between the wires and the aluminum conduit and subsequent fire or explosion of the fuel tank. This AD requires a one-time inspection to detect damage of the sleeving and wire bundles of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks, and of the auxiliary tank jettison pumps (if installed); replacement of any damaged sleeving with new sleeving; and repair or replacement of any damaged wires with new wires. For airplanes on which any burned wires are found, this AD requires an inspection to detect damage of the conduit, and replacement of any damaged conduit with a serviceable conduit. The actions are required to be accomplished in accordance with the alert service bulletin described previously.

This AD also requires that operators submit a report of inspection results to the FAA. In addition, this AD requires that operators submit damaged Teflon sleeving, wires, and conduits to the FAA.

Boeing Model 747 series airplanes having line numbers 433 and subsequent are equipped with fuel pump wire conduits made from corrosion-resistant steel (stainless steel). Arcing from the fuel pump wires to the stainless steel conduit will result in opening the fuel pump circuit breaker before sufficient heat is generated to penetrate the stainless steel conduit. The FAA is considering additional rulemaking to require replacing the aluminum conduits located in the fuel tanks with stainless steel conduits following accomplishment of the one-time inspection required by this AD. The details of the requirement to replace the aluminum conduits with stainless steel conduits will be finalized after reviewing the reports of inspection results required by this AD.

Additionally, the FAA recognizes that the degree of wear or damage to the parts may be difficult to describe in a written report of inspection results. Consequently, the FAA finds it necessary to require that any damaged parts be submitted to the FAA for examination. Examination of these parts will enable the FAA to determine whether a need exists to require future replacement of aluminum conduits with stainless steel conduits, and to develop appropriate compliance times based on the extent of wear or damage found.

Justification of Compliance Time

The required compliance time of 120 days is usually sufficient to allow for a brief comment period before adoption of a final rule. In this AD, however, that compliance time was selected in order to allow the requirements of the AD to be performed at a maintenance base where special equipment and trained maintenance personnel will be available without significant disruption of normal operations. Nevertheless, the FAA has determined that immediate adoption is necessary in this case because of the importance of initiating the required one-time inspection as soon as possible.

Determination of Rule's Effective Date

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

Comments Invited

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

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

AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 96-NM-277-AD." The postcard will be date stamped and returned to the commenter.

Regulatory Impact

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.
Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

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

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

§ 39.13 - [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

96-26-06 BOEING: Amendment 39-9870. Docket 96-NM-277-AD.

Applicability: Model 747 series airplanes having line numbers up through 432, certificated in any category.

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

Compliance: Required as indicated, unless accomplished previously.

To detect and correct abrasion of the Teflon sleeving and wires in the bundles of the fuel boost pumps for the numbers 1 and 4 main fuel tanks and of the auxiliary tank jettison pumps (if installed), which could result in electrical arcing between the wires and the aluminum conduit and subsequent fire or explosion of the fuel tank,

accomplish the following:

(a) Within 120 days after the effective date of this AD, perform a one-time inspection to detect damage of the sleeving and wire bundles of the forward and aft boost pumps of the numbers 1 and 4 main fuel tanks, and of the wire bundles of the auxiliary tank jettison pumps (if installed), in accordance with Boeing Alert Service Bulletin 747-28A2204, dated December 19, 1996.

(1) If any damaged sleeving is found, prior to further flight, replace the sleeving with new sleeving in accordance with the alert service bulletin.

(2) If any damaged wire is found, prior to further flight, repair or replace the wire with new wire in accordance with the alert service bulletin.

(3) If any burned wire is found, prior to further flight, perform an inspection to detect damage of the conduit, in accordance with the alert service bulletin. If any damage is found, prior to further flight, replace the conduit with a serviceable conduit in accordance with the alert service bulletin.

(b) Within 14 days after accomplishing the requirements of paragraph (a) of this AD, submit a report of inspection results to the Manager, Seattle Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, WA 98055-4056; fax (206) 227-1181. The report shall include the information specified in paragraphs (b)(1), (b)(2), (b)(3), (b)(4), and (b)(5) of this AD. Information collection requirements contained in this regulation have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(1) The airplane serial number.

(2) The total hours time-in-service accumulated on the airplane.

(3) The total number of flight cycles accumulated on the airplane.

(4) A description of any damage found.

(5) The location where the damaged part was installed.

(c) If any damaged sleeving, wire, or conduit is found during any inspection required by this AD, within 14 days after accomplishing the inspection, submit the damaged part to the Manager, Seattle ACO, along with the report of inspection results required by paragraph (b) of this AD.

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle ACO. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

NOTE 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

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

(f) The actions shall be done in accordance with Boeing Alert Service Bulletin 747-28A2204, dated December 19, 1996. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700,

Washington, DC.

(g) This amendment becomes effective on January 21,

1997;

FOR FURTHER INFORMATION CONTACT:

G. Michael Collins, Aerospace Engineer, Propulsion Branch,
ANM-140S, FAA, Transport Airplane Directorate, Seattle
Aircraft Certification Office, 1601 Lind Avenue, SW.,
Renton, Washington 98055-4056; telephone (206) 227-2689; fax
(206) 227-1181.