

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

Airworthiness Directive

94-12-09 BOEING: Amendment 39-8937. Docket 93-NM-139-AD.

Applicability: Model 747 series airplanes, line positions 001 through 200 inclusive, certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To prevent rapid decompression of the airplane and the inability to carry fail-safe loads, accomplish the following:

(a) Within 1,000 flight cycles after the effective date of this AD, and thereafter at the intervals specified in paragraphs (a)(1), (a)(2), and (a)(3) of this AD, perform inspections at the upper lobe skin panel lap joints in accordance with Boeing Service Bulletin 747-53-2307, Revision 2, dated October 14, 1993:

(1) Perform a detailed external visual inspection to detect cracks and evidence of corrosion (bulging skin between fasteners, blistered paint, dished fasteners, popped rivet heads, or loose fasteners) in accordance with the service bulletin. Repeat that inspection thereafter at intervals not to exceed 2,000 flight cycles until the modification required by paragraph (e) of this AD is accomplished.

(2) Perform a high frequency eddy current inspection (HFEC) to detect cracks in the skin at the upper row of fasteners of the skin panel lap joints forward of body station (BS) 1000 in accordance with the service bulletin. Repeat that inspection thereafter at intervals not to exceed 4,000 flight cycles until the modification required by paragraph (e) of this AD is accomplished.

(3) Perform a HFEC inspection to detect cracks in the skin at the upper row of fastener holes of the skin panel lap joints aft of BS 1480 to 2360 in accordance with the service bulletin. Repeat that inspection thereafter at intervals not to exceed 6,000 flight cycles until the modification required by paragraph (e) of this AD is accomplished.

(b) If any crack is found during any inspection required by this AD, or if any corrosion is found for which material loss exceeds 10 percent of the material thickness, accomplish paragraphs (b)(1) and (b)(2) of this AD in accordance with Boeing Service Bulletin 747-53-2307, Revision 2, dated October 14, 1993.

(1) Prior to further flight, repair any crack or corrosion found, in accordance with the service bulletin.

(2) Within 18 months after accomplishing the repair, accomplish the "full" modification described in the service bulletin for the remainder of any skin panel lap joint in which a crack is found, or in which corrosion is found that exceeds 10 percent of the material thickness.

(c) If no crack is found during any inspection required by this AD, but corrosion is found for which the material loss does not exceed 10 percent of the material thickness: Accomplish paragraph (c)(1) and (c)(2) of this AD for the entire affected skin panel lap joint in accordance with Boeing Service Bulletin 747-53-2307, Revision 2, dated October 14, 1993.

(1) Within 500 flight cycles after accomplishing the inspection during which the corrosion was found, and thereafter at intervals not to exceed 500 flight cycles until the "full" modification required by paragraph (c)(2) of this AD is accomplished: Perform a HFEC inspection to detect cracks of the corroded skin panel lap joint, in accordance with the service bulletin.

(2) Within 36 months after accomplishing the inspection during which the corrosion was found: Accomplish the "full" modification in accordance with the service bulletin.

(d) The inspections required by this AD shall be performed by removing the paint and using an approved chemical stripper; or by ensuring that each fastener head is clearly visible.

(e) Except as provided in paragraph (g) of this AD, prior to the accumulation of 20,000 total flight cycles, or within the next 1,000 flight cycles after the effective date of this AD, whichever occurs later: Accomplish the modification described in the service bulletin as a "full" modification of the skin panel lap joints at the locations specified in paragraphs (e)(1) and (e)(2) of this AD, as applicable, in accordance with Boeing Service Bulletin 747-53-2307, Revision 2, dated October 14, 1993. Accomplishment of this modification terminates the repetitive inspection requirements of paragraph (a) of this AD.

(1) For airplane line numbers 001 through 058, inclusive: Modify the skin panel lap joints at Stringer 12 (left and right), station 520 to 1,000; and Stringer 19 (left and right), station 520 to 740.

(2) For airplane line numbers 59 through 200, inclusive: Modify the skin panel lap joints at Stringer 12 (left and right), station 740 to 1,000; and Stringer 19 (left and right), station 520 to 740.

(f) Perform an external HFEC inspection to detect skin cracks of any modified skin panel lap joints at the times specified in paragraphs (f)(1), (f)(2), and (f)(3) of this AD, as applicable, in accordance with Boeing Service Bulletin 747-53-2307, Revision 2, dated October 14, 1993. Repeat that inspection thereafter at intervals not to exceed 3,000 flight cycles.

(1) For skin panel lap joints on which the "full" modification has been accomplished: Within 10,000 flight cycles after accomplishment of that modification.

(2) For skin panel lap joints on which the "optional" (partial) modification has been accomplished: Within 7,000 flight cycles after accomplishment of that modification.

(3) For skin panel lap joints having deep countersink fasteners located at Section 42 on which the "full" modification, as described in the original issue of the service bulletin, has been accomplished: Within 5,000 flight cycles after accomplishment of that modification.

(g) In lieu of the "full" modification required by paragraph (e) of this AD, the "optional" (partial) modification described in Boeing Service Bulletin 747-53-2307, Revision 2, dated October 14, 1993, may be accomplished for skin panels that have an outer thickness of 0.090 inches or less, and that do not have any cracks, corrosion, or an existing structural repair on the skin panel lap joint. The "optional" (partial) modification shall not be accomplished at deep countersink fastener locations.

(h) Accomplishment of the requirements of this AD terminates the requirements of AD 90-15-06, amendment 39-6653.

(i) 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 Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate. 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: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

(j) 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.

(k) The actions shall be done in accordance with Boeing Service Bulletin 747-53-2307, Revision 2, dated October 14, 1993. 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.

- (1) This amendment becomes effective on July 13, 1994.

SUPERSEDED