

Boeing 747 Series Aeroplanes

AD/B747/160 Fuselage Skin Above Main Entry Doors - 2 8/96

Applicability: B747 aircraft, line numbers 207 to 1088.

Note. AD/B747/149 refers to a similar problem for line numbers 1 to 206.

- Requirement: 1. Remove stringers S-15, S-14E, S-14 between STA 460 and 480, and move STA 460 frame aft to gain internal access to the skin and doublers above main entry door 1. Perform an internal visual inspection for cracking of doublers along fastener holes up to stringer S-14E. Perform open-hole High Frequency Eddy Current (HFEC) inspections of skin and doublers up to stringer S-14 for cracking. Gain access and conduct inspections in accordance with Boeing Service Bulletin (SB) 747-53A2396, Revision 1.
2. If cracks are found, repair and reinforce the skin joint in accordance with the Structural Repair Manual, or if no cracks are found, install an external doubler in accordance with Boeing SB 747-53A2396, Revision 1.
3. After modification or repair in accordance with Requirement 2, reinspect the affected area using internal High Frequency Eddy Current (HFEC) or external Low Frequency Eddy Current (LFEC) inspections, in accordance with Boeing Service Bulletin 747-53A2396, Revision 1.

Note: For the purposes of this AD, a flight-cycle may be taken as only those flights which achieve a cabin pressure differential of 2.0 psi or greater.

Compliance: Inspect, and reinforce the skin joint by repair or modification, before 10000 flight cycles or within 3000 flight cycles after 18 July 1996, whichever occurs last.

Initially reinspect within 15000 flight cycles after modification or repair, and thereafter reinspect at intervals not to exceed 6000 flight cycles if using internal HFEC, or at intervals not to exceed 3000 flight cycles if using external LFEC inspectors.

Background: An operator has reported numerous skin cracks found in internal skin doublers under the outer flange of STA 460 frame above main entry door 1. Boeing's subsequent inspection of 747-100SR fuselage and 747-400 section 41 and 42 fatigue test articles also revealed multiple cracking. Further inspection of 5 in-service aircraft revealed 4 aircraft with multiple cracking at times as low as 15,000 flights. Skin cracks that are not found and reinforced may lead to sudden loss of cabin pressurisation.