

Related AD

On May 3, 1999, the FAA issued AD 99-10-09, amendment 39-11162 (64 FR 25194, May 11, 1999), applicable to certain Boeing Model 747-100, -200, and 747-SP series airplanes and military type E-4B airplanes. That AD requires repetitive inspections to detect cracking of the wing front spar web, and repair of cracked structure. That AD provides for optional terminating action (modification) for the repetitive inspection requirements. This proposed AD would require post-modification inspections of that modification, if accomplished.

Explanation of Relevant Service Information

The FAA has reviewed and approved Boeing Alert Service Bulletin 747-57A2311, Revision 1, including Appendices A and B, dated June 14, 2001; and Boeing Service Bulletin 747-57A2311, Revision 2, dated February 21, 2002; both including Evaluation Form. The service bulletins describe procedures for various repetitive inspections (detailed, ultrasonic, high frequency eddy current (HFEC)) of the front spar web between the fixed leading edge seal ribs at FSSI 628 through 711 inclusive, to find cracking of the front spar web of the wing, and corrective action, if necessary. The inspections include:

- For Group 1 through Group 8 airplanes on which the optional modification specified in AD 99-10-09, amendment 39-11162, has not been done, the affected area is divided into 2 zones. Part 1 of the service bulletin describes procedures for inspecting to find cracking of the front spar web between the seal rib at FSSI 628 and the rib post at FSSI 684 (Zone A); and between FSSI 684 and FSSI 711 inclusive (Zone B).

- For Group 1 through Group 8 airplanes on which the optional modification specified in AD 99-10-09, amendment 39-11162, has been done, the affected area is divided into 3 zones. Part 1 of the service bulletin describes procedures for inspecting to find cracking of the front spar web between the seal rib at FSSI 628 and the rib post at FSSI 668 (Zone A); between FSSI 693 and FSSI 711 inclusive (Zone B); and between FSSI 668 and FSSI 693 inclusive (Zone C).

- For Group 9 through Group 31 airplanes, the affected area is divided into two zones. Part 1 of the service bulletin describes procedures for inspecting to find cracking of the front spar web between the seal rib at FSSI 628 and the rib post at FSSI 684 (Zone

A); and between FSSI 684 and FSSI 711 inclusive (Zone B).

- For Group 1 through Group 8 airplanes, the inspections in this service bulletin do not replace the inspections required by AD 99-10-09.

The service bulletins also describe procedures for optional modification of the front spar web. The procedures include removing the existing fasteners and doing an open hole, rotating probe HFEC inspection of the holes for web cracks. If no cracks are found, the service bulletin describes procedures for oversizing the holes, and installing tension type fasteners. The service bulletin also describes procedures for an operational test after doing the modification. Accomplishment of the actions specified in the service bulletin is intended to adequately address the identified unsafe condition.

In addition, the service bulletin specifies that repair instructions for cracking should be obtained from the manufacturer.

Explanation of Requirements of Proposed Rule

Since an unsafe condition has been identified that is likely to exist or develop on other products of this same type design, the proposed AD would supersede AD 2000-25-12, to continue to require inspections to detect cracking of the front spar web of the wing, and corrective action, if necessary. This new action would add one airplane to the applicability, change certain compliance times, add certain new requirements, and provide an optional modification. The actions would be required to be accomplished in accordance with the service bulletin described previously, except as discussed below.

Differences Between Service Information and This Proposed AD

The service bulletin specifies that the manufacturer may be contacted for disposition of certain repair conditions, but this proposed AD would require the repair of those conditions to be accomplished in accordance with a method approved by the FAA, or in accordance with data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative who has been authorized by the FAA to make such findings.

Cost Impact

There are approximately 479 Model 747 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 97 airplanes of U.S. registry would be affected by this proposed AD.

The external inspections that are required by AD 2000-25-12 take approximately 48 work hours per airplane (not including access and close-up), at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the external inspections is estimated to be \$2,880 per airplane, per inspection cycle.

The new inspections that are proposed in this AD action would take approximately 74 work hours per airplane to accomplish, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the new inspections is estimated to be \$4,440 per airplane, per inspection cycle.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the current or proposed requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Should an operator elect to accomplish the optional modification that would be provided by this AD action, it would take approximately 40 work hours to accomplish, at an average labor rate of \$60 per work hour. The cost of required parts would be between \$8,606 and \$28,036 per airplane. Based on these figures, the cost impact of the optional modification would be between \$11,006 and \$30,436 per airplane.

Regulatory Impact

The regulations proposed herein 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. Therefore, it is determined that this proposal would not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this 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) if promulgated, 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. A copy of the draft