

service bulletin describes procedures for a one-time detailed inspection for cracking of the web, upper chord, and strap of certain upper deck floor beams; and an open-hole high frequency eddy current (HFEC) inspection for cracking of the fastener holes of the web and upper chord. The service bulletin also describes procedures for modifying the upper chord of the upper deck floor beams, if no cracking is found, and for installing a permanent repair if cracking is found. The service bulletin recommends new repetitive open-hole HFEC or surface HFEC inspections of the upper deck floor beams following such modification or permanent repair. However, the service bulletin does not contain instructions for such inspections.

We also have reviewed and approved Boeing Service Bulletin 747–53A2420, Revision 1, dated January 7, 1999. (AD 98–09–17 refers to Boeing Alert Service Bulletin 747–53A2420, dated March 26, 1998, as the appropriate source of service information for the inspections required by that AD.) In addition to procedures for inspections of the entire area subject to inspections per AD 98–09–17, Boeing Service Bulletin 747–53A2420, Revision 1, describes procedures for time-limited repairs of certain crack configurations in the upper deck floor beams. These time-limited repairs involve removing the existing strap; performing HFEC inspections of the chord, web, and angle, as applicable; stop-drilling cracks; trimming the angle and machining the vertical leg of the chord, if necessary; and installing a new strap.

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 98–09–17 to continue to require repetitive detailed inspections or a one-time open-hole HFEC inspection to detect cracking of certain areas of the upper deck floor beams, and corrective actions if necessary. The proposed AD would add a requirement for new one-time detailed and open-hole HFEC inspections for cracking of the web, upper chord, and strap of upper deck floor beams. The proposed AD also would require modification or permanent repair of the upper deck floor beams, as applicable, which would eventually necessitate new repetitive open-hole HFEC or surface HFEC inspections for cracking of the upper deck floor beams. The actions would be required to be accomplished in accordance with Boeing Alert Service

Bulletin 747–53A2429 and Boeing Service Bulletin 747–53A2420, Revision 1, except as discussed below.

Differences Between Proposed AD and Service Bulletins

Operators should note that, although Boeing Service Bulletin 747–53A2420, Revision 1, specifies that the manufacturer may be contacted for disposition of certain repair conditions, this proposed AD would require the repair of those conditions to be accomplished in accordance with a method that we have approved, or in accordance with data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative (DER) who we have authorized to make such findings.

Operators should note that, although Boeing Alert Service Bulletin 747–53A2429 provides specific instructions for modifying the upper chord of the upper deck floor beams or installing a permanent repair, this proposed AD would require a modification or permanent repair be accomplished in accordance with a method that we have approved, or in accordance with data meeting the type certification basis of the airplane approved by a Boeing Company DER who we have authorized to make such findings. We have determined that the modification and permanent repair procedures specified in Boeing Alert Service Bulletin 747–53A2429 do not provide an adequate level of safety. This determination is based on two reports that we recently received, which indicate that cracks have been found on airplanes that had a modification similar to that specified in Boeing Alert Service Bulletin 747–53A2429. Boeing concurs with our determination and intends to revise that service bulletin in the future to include new modification and permanent repair procedures. Once we have reviewed the revised service bulletin, we may consider approving it as an alternative method of compliance to allow the modification or permanent repair to be accomplished per that service bulletin.

Explanation of Change Made To Existing Requirements

We have changed all references to a “detailed visual inspection” in the existing AD to “detailed inspection” in this action. Note 3 of this proposed AD defines such an inspection.

Cost Impact

There are approximately 81 airplanes of the affected design in the worldwide fleet. We estimate that 23 airplanes of

U.S. registry would be affected by this proposed AD.

For airplanes on which the repetitive detailed inspection that is currently required by AD 98–09–17 is accomplished, that inspection takes approximately 1 work hour per airplane, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the currently required detailed inspection is estimated to be \$60 per airplane, per inspection cycle.

The HFEC inspection that is currently required by AD 98–09–17 takes approximately 6 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 currently required actions on U.S. operators is estimated to be \$8,280, or \$360 per airplane.

The new one-time detailed and HFEC inspections that are proposed in this AD action would take approximately 7 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 proposed inspection on U.S. operators is estimated to be \$9,660, or \$420 per airplane.

For airplanes subject to the modification that is proposed in this AD action, it would take approximately 172 work hours per airplane to accomplish, at an average labor rate of \$60 per work hour. Required parts would cost approximately \$4,959 per airplane. Based on these figures, the cost impact of the proposed modification is estimated to be \$15,279 per airplane.

For airplanes subject to the repair that is proposed in this AD action, it would take approximately 172 work hours per airplane to accomplish, at an average labor rate of \$60 per work hour. Required parts would cost approximately \$21,646 to \$21,857 per airplane. Based on these figures, the cost impact of the proposed repair is estimated to be \$31,966 to \$32,177 per airplane.

The follow-on repetitive inspections that are proposed in this AD action would take approximately 6 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 proposed follow-on inspections on U.S. operators is estimated to be \$8,280, or \$360 per airplane, per inspection cycle.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the proposed requirements of this AD action, and that no operator would accomplish those actions in the future if this proposed AD were not adopted. The cost impact figures discussed in AD