

Explanation of Relevant Service Information

We have reviewed and approved Boeing Service Bulletin MD90-32-012, Revision 03, dated June 29, 2001. (AD 2000-03-08 refers to Boeing Service Bulletin MD90-32-012, Revision 01, dated June 2, 1998, as the acceptable source of service information for the actions required by that AD. Also, the applicability statement of AD 2000-03-08 states that the AD applies to Model MD-90-30 airplanes as listed in Boeing Service Bulletin MD90-32-012, Revision 01). Revision 03 of the service bulletin is also effective for additional airplanes and MLG piston part numbers that were not included in Revision 01 of the service bulletin. Revision 03 describes procedures for initial fluorescent penetrant and magnetic particle inspections to detect cracking of the MLG torque link lugs; follow-on repetitive visual, fluorescent penetrant, and magnetic particle inspections for cracking of the MLG torque link lugs; and repetitive visual inspections for evidence of cracking in the paint topcoat, and, if any evidence of cracking in the paint topcoat is found, a follow-on NDT inspection of the MLG piston to determine if any cracking is present. Revision 03 of the service bulletin specifies to contact Boeing for repair instructions if any crack is found.

As explained previously in the preamble of the notice of proposed rulemaking (NPRM) for AD 2002-10-03, the FAA has reviewed and approved Boeing Service Bulletin MD90-32-031, Revision 01. That service bulletin describes procedures for replacement of the MLG shock strut piston assemblies, left and right-hand side, with new or serviceable, improved assemblies, which would eliminate the need for the repetitive inspections described above.

Accomplishment of the actions specified in the service bulletins is intended to adequately address the identified unsafe condition.

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 2000-03-08 to continue to require repetitive fluorescent penetrant and magnetic particle inspections to detect fatigue cracking of the MLG piston, and repair if necessary. The proposed AD would expand the applicability of the existing AD to include additional airplanes and MLG piston part numbers. These actions would be required to be accomplished

per Boeing Service Bulletin MD90-32-012, Revision 03, which was described previously, except as discussed below under the heading "Differences Between Proposed AD and Service Bulletin." The proposed AD also would require replacement of certain MLG shock strut piston assemblies with new or serviceable improved assemblies, which would terminate the existing requirements of this proposed AD. This action would be required to be accomplished per Boeing Service Bulletin MD90-32-031, Revision 01.

Operators may note that, consistent with the provisions of Boeing Service Bulletin MD90-32-012, Revision 03, if any evidence of cracking in the paint topcoat of the MLG piston is found, the proposed AD would allow deferral, for the earlier of 7 days or 50 landings, of the follow-on NDT inspection to detect any cracking of the MLG piston. We have determined that, for this proposed AD, such a deferral would not adversely affect the continued operating safety of an affected airplane. Accomplishment of the NDT inspection for cracking of the MLG piston, and any necessary repair, within 7 days or 50 landings after evidence of cracking in the topcoat paint is found, would adequately ensure that any cracking of the MLG piston would be detected before it represents a hazard to the airplane.

Differences Between Proposed AD and Service Bulletin

Although Boeing Service Bulletin MD90-32-012, Revision 03, describes procedures for fluorescent penetrant and magnetic particle inspections, that service bulletin does not emphasize the sequence of these inspections. We find that, in each inspection cycle, it is necessary for the fluorescent penetrant inspection to precede the magnetic particle inspection. This sequencing is important because we are aware of cases in which accomplishment of a magnetic particle inspection before a fluorescent penetrant inspection interfered with the results of the fluorescent penetrant inspection. Therefore, paragraph (e) has been included in this proposed AD to clarify that, for inspections performed after the effective date of this AD, accomplishment of the fluorescent penetrant inspection must precede accomplishment of the magnetic particle inspection.

Operators should note that, although Boeing Service Bulletin MD90-32-012, Revision 03, specifies that the manufacturer may be contacted for disposition of repair conditions, this proposed AD would require repairs to be accomplished per a method approved by the FAA.

Cost Impact

There are approximately 114 Model MD-90-30 airplanes of the affected design in the worldwide fleet.

In AD 2000-03-08, we estimated that the actions in that AD applied to 15 airplanes of U.S. registry. The actions that are currently required by AD 2000-03-08 take approximately 2 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the currently required actions on U.S. operators is estimated to be \$1,950, or \$130 per airplane, per inspection cycle.

The FAA estimates that 21 airplanes of U.S. registry would be affected by this new proposed AD.

The new inspections that are proposed in this AD action would take approximately 2 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the proposed requirements of this AD on U.S. operators is estimated to be \$2,730, or \$130 per airplane.

As explained previously, the replacement of MLG pistons that is included in this proposed AD is already required by AD 2002-10-03. Therefore, this proposed AD would add no new costs associated with that action. We restate the cost impact estimate in its entirety in this proposed AD for the convenience of affected operators:

The replacement that is included in this AD action and currently required by AD 2002-10-03 takes approximately 28 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Required parts cost approximately \$263,438 per airplane. Based on these figures, the cost impact of this requirement on U.S. operators of airplanes subject to this proposed AD is estimated to be \$5,570,418, or \$265,258 per airplane.

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. The manufacturer may cover the cost of replacement parts associated with this proposed AD, subject to warranty conditions. As a result, the costs