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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0652; Directorate Identifier 2010-NM-045-AD; Amendment 39-17240; AD 2012-22-04]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all The Boeing Company Model MD-90-30 airplanes. This AD was prompted by reports of cracks of the wing rear spar lower cap at the outboard flap, inboard drive hinge at station Xrs=164.000. This AD requires repetitive eddy current high frequency (ETHF) inspections for cracking on the aft side of the left and right wing rear spar lower caps at station Xrs=164.000, further ETHF inspections if cracks are found, and repair if necessary; and repetitive post-repair inspections, and repair if necessary. We are issuing this AD to detect and correct cracking of the left and right rear spar lower caps, which could result in fuel leaks and damage to the wing skin or other structure, and consequent loss of the structural integrity of the wing.

DATES: This AD is effective December 5, 2012.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of December 5, 2012.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, CA 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal

holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Roger Durbin, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, California 90712-4137; phone: (562) 627-5233; Fax: (562) 627-5210; email: roger.durbin@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to the specified products. That SNPRM published in the Federal Register on July 24, 2012 (77 FR 43178). The original NPRM (76 FR 40288, July 8, 2011) proposed to require repetitive eddy current high frequency (ETHF) inspections for cracking on the aft side of the left and right wing rear spar lower caps at station Xrs=164.000, further ETHF inspections if cracks are found, and repair if necessary. The original NPRM also proposed to require repetitive post-repair inspections and repair if necessary. The SNPRM proposed to continue to have the same requirements as the original NPRM, but also added new repetitive post-repair inspections, and corrective action if necessary.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the SNPRM (77 FR 43178, July 24, 2012) or on the determination of the cost to the public.

Conclusion

We reviewed the relevant data and determined that air safety and the public interest require adopting the AD as proposed—except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the SNPRM (77 FR 43178, July 24, 2012) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the SNPRM (77 FR 43178, July 24, 2012).

Costs of Compliance

We estimate that this AD affects 51 airplanes of U.S. registry.
We estimate the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	4 work-hours × \$85 per hour = \$340 per inspection cycle.	N/A	\$340 per inspection cycle	\$17,340 per inspection cycle.

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this AD.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will 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.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):



2012-22-04 The Boeing Company: Amendment 39-17240; Docket No. FAA-2011-0652; Directorate Identifier 2010-NM-045-AD.

(a) Effective Date

This AD is effective December 5, 2012.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all The Boeing Company Model MD-90-30 airplanes, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 57, Wings.

(e) Unsafe Condition

This AD was prompted by reports of cracks of the wing rear spar lower cap at the outboard flap, inboard drive hinge at station Xrs=164.000. We are issuing this AD to detect and correct cracking of the left and right rear spar lower caps, which could result in fuel leaks and damage to the wing skin or other structure, and consequent loss of the structural integrity of the wing.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Repetitive Inspections

Before the accumulation of 30,000 total flight cycles, or within 10,000 flight cycles after the effective date of this AD, whichever occurs later, do an eddy current high frequency (ETHF) inspection for cracking on the aft side of the left and right wing rear spar lower caps at station Xrs=164.000, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. If no cracking is found on the left or right wing rear spar lower cap, repeat the inspection on the affected wing rear spar lower cap thereafter at intervals not to exceed 2,550 flight cycles. Doing a repair of the left or right wing rear spar lower cap required by this AD terminates the repetitive inspections required by this paragraph for that side only.

(h) Further Inspections if Cracking of Two Inches or Less Is Found and Is Not in the Rear Spar Lower Cap, Repair, and Repetitive Post-Repair Inspections

If, during any inspection required by paragraph (g) of this AD, any crack is found that is two inches or less and is not in the rear spar lower cap forward horizontal leg radius: Before further flight, do an ETHF inspection for cracking on the affected wing rear spar upper cap at station Xrs=164.000, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011.

(1) If no crack is found in the rear spar upper cap during the inspection required in paragraph (h) of this AD, do the actions specified in paragraph (h)(1)(i) or (h)(1)(ii) of this AD.

(i) Option 1: Before further flight, do a doubler repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 13,500 flight cycles after doing the doubler repair, do an ETHF inspection for any cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspection thereafter at intervals not to exceed 8,500 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(ii) Option 2: Before further flight, do a splice repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an eddy current low frequency (ETLF) inspection and an ultrasonic (UT) inspection for cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(2) If any crack that is two inches or less is found in the rear spar upper cap during the inspection required by paragraph (h) of this AD, do the actions specified in paragraph (h)(2)(i) or (h)(2)(ii) of this AD.

(i) Option 1: Before further flight, do a doubler repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 13,500 flight cycles after doing the doubler repair, do an ETHF inspection for any cracking in the repaired area of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspection thereafter at intervals not to exceed 8,500 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(ii) Option 2: Before further flight, do a splice repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an ETLF inspection and a UT inspection for any cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(3) If any crack that is greater than two inches is found in the rear spar upper cap during the inspection required by paragraph (h) of this AD, do the actions specified in paragraph (h)(3)(i) or (h)(3)(ii) of this AD.

(i) Option 1: Before further flight, do a splice repair of the rear spar upper cap and a doubler repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 13,500 flight cycles after doing the doubler repair, do an ETHF inspection for any cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspection thereafter at intervals not to exceed 8,500 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(ii) Option 2: Before further flight, do a splice repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an ETLF inspection and a UT inspection for any cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(i) Further Inspections If Cracking That Is Greater Than Two Inches Is Found or Is in the Rear Spar Lower Cap, Repair, and Repetitive Post-Repair Inspections

If, during any inspection required by paragraph (g) of this AD, any crack is found that is greater than two inches or is in the rear spar lower cap forward horizontal leg radius, before further flight, do an ETHF inspection for cracking on the affected wing rear spar upper cap at station Xrs=164.000, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011.

(1) If no crack is found in the rear spar upper cap, before further flight, do a splice repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an ETLF inspection and a UT inspection for any cracking of the repaired area of the lower rear spar cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(2) If any crack that is two inches or less is found in the rear spar upper cap, do the actions specified in paragraph (i)(2)(i) or (i)(2)(ii) of this AD.

(i) Option 1: Do the actions specified in paragraphs (i)(2)(i)(A), (i)(2)(i)(B), and (i)(2)(i)(C) of this AD.

(A) Before further flight, do a doubler repair of the rear spar upper cap and a splice repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011.

(B) Within 13,500 flight cycles after doing the doubler repair required by paragraph (i)(2)(i)(A) of this AD, do an ETHF inspection for any cracking in the repaired area of the rear spar upper cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspection thereafter at intervals not to exceed 8,500 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(C) Within 20,000 flight cycles after doing the splice repair required by paragraph (i)(2)(i)(A) of this AD, do an ETLF inspection and a UT inspection for cracking in the repaired area of the rear spar

lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(ii) Option 2: Before further flight, do a splice repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an ETLF inspection and a UT inspection for cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(3) If any crack that is greater than two inches is found in the rear spar upper cap, before further flight, do a splice repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an ETLF inspection and a UT inspection for cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(j) Repeat ETHE Inspection

For airplanes on which any splice repair was required by this AD: Within 30,000 flight cycles after the splice repair, repeat the inspection required by paragraph (g) of this AD for the repaired wing. If no cracking is found on the on the rear spar lower cap of the repaired wing, repeat the inspection on the affected wing rear spar lower cap thereafter at intervals not to exceed 2,550 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(k) Credit for Previous Actions

This paragraph provides credit for the actions required by paragraphs (g), (h), and (i) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin MD90-57A026, dated February 11, 2010, which is not incorporated by reference in this AD.

(l) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation

Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane and 14 CFR 25.571, Amendment 45, and the approval must specifically refer to this AD.

(m) Related Information

(1) For more information about this AD, contact Roger Durbin, Airframe Branch, ANM-120L, FAA, Los Angeles ACO, 3960 Paramount Boulevard, Lakewood, California 90712-4137; phone: (562) 627-5233; fax: (562) 627-5210; email: roger.durbin@faa.gov.

(2) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, CA 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; Internet <https://www.myboeingfleet.com>.

(n) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011.

(ii) Reserved.

(3) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, CA 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; Internet <https://www.myboeingfleet.com>.

(4) You may view this service information at FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on October 19, 2012.

Kalene C. Yanamura,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.