



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-0424; Directorate Identifier 2011-NM-004-AD; Amendment 39-17205; AD 2012-19-10]

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 certain The Boeing Company Model 777 airplanes. This AD was prompted by heat damage and cracks at the pivot joint location of the main landing gear (MLG) inner cylinder/truck beam. This AD requires repetitive lubrication of the MLG pivot joints; repetitive detailed inspections of the outer diameter chrome on the center axles of the MLG for chicken-wire cracks, corrosion, and chrome plate distress; repetitive magnetic particle inspections of the outer diameter chrome on the center axles of the MLG for cracks; and related investigative and corrective actions if necessary. We are issuing this AD to detect and correct cracking in the MLG center axle and shock strut inner cylinder lugs (pivot joint), which could result in fracture of the MLG pivot joint components and consequent collapse of the MLG.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; phone: 206-544-5000, extension 1; fax: 206-766-5680; 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, WA. 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: Melanie Violette, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6422; fax: 425-917-6590; email: Melanie.violette@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM published in the Federal Register on May 1, 2012 (77 FR 25647). That NPRM proposed to require repetitive lubrication of the MLG pivot joints; repetitive detailed inspections of the outer diameter chrome on the center axles of the MLG for chicken-wire cracks, corrosion, and

chrome plate distress; repetitive magnetic particle inspections of the outer diameter chrome on the center axles of the MLG for cracks; and related investigative and corrective actions if necessary.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (77 FR 24647, May 1, 2012), and the FAA's response to each comment.

Support for the NPRM (77 FR 25647, May 1, 2012)

United Airlines agrees with the intent of the NPRM (77 FR 24647, May 1, 2012).

Requests to Extend Compliance Time

FedEx and Air France requested that we revise the compliance time for the inspection specified in paragraph (g) of the NPRM (77 FR 25647, May 1, 2012) to coincide with the time between overhaul (TBO) of the MLG for their respective fleets. The applicable compliance time specified in the NPRM for the FedEx fleet would be 3,000 days; the TBO for the FedEx fleet is 3,650 days. The applicable compliance time specified in the NPRM for the Air France fleet would be 3,750 days; the TBO for the Air France fleet is 4,015 days. FedEx noted that, of the 28 cracked axles found during overhaul, none was fractured.

We disagree to revise the compliance time. In developing an appropriate compliance time for this AD, we considered not only the safety implications, but the manufacturer's recommendations and the practical aspect of accomplishing the required actions within an interval of time that corresponds to typical scheduled maintenance for affected operators. Under the provisions of paragraph (l) of this final rule, however, we might consider requests for adjustments to the compliance time if data is submitted to substantiate that such an adjustment would provide an acceptable level of safety. We have not changed the final rule regarding this issue.

Requests for Alternative Provisions

Boeing, FedEx, and All Nippon Airways requested that we revise paragraph (i) of the NPRM (77 FR 25647, May 1, 2012) to include an additional exception to the service information. The commenters requested that we allow the use of MIL-PRF-32014 grease as an alternative to the Royco 11MS grease for the lubrications specified in paragraph (g) of the NPRM. Boeing Alert Service Bulletin 777-32-0082, dated December 9, 2010 (referenced in the NPRM as the appropriate source of service information for this lubrication), replaces the Royco 11MS grease with MIL-PRF-32014 grease for lubricating and installing the MLG pivot joint components.

Boeing asserted that MIL-PRF-32014 grease provides the same lubricating properties as Royco 11MS grease. Boeing and FedEx noted that use of MIL-PRF-32014 grease across the fleet will avoid intermixing grease types and prevent the need to track which grease has been applied on each airplane. FedEx reported it has already standardized to MIL-PRF-32014 grease to ensure that there is no intermixing of greases. Boeing reported that Boeing Alert Service Bulletin 777-32A0082, dated December 9, 2010, will be revised to allow use of MIL-PRF-32014 grease as an optional grease type, but this revision will not be available when the AD is issued.

We agree with the request. Both greases have the same lubricating properties and will work with the original and new bushing materials. We have added new paragraph (i)(2) in this final rule (and redesignated paragraph (i) of the NPRM (77 FR 25647, May 1, 2012) as paragraph (i)(1) of this final rule) to allow the use of either MIL-PRF-32014 or Royco 11MS grease for the lubrications required by paragraph (g) of this AD.

Requests to Include Terminating Action

FedEx, Air France, United Airlines, and All Nippon Airways requested that we revise paragraph (j) of the NPRM (77 FR 25647, May 1, 2012) to provide terminating

action for the repetitive inspections specified in paragraph (g) of the NPRM. FedEx stated that airplanes after incorporation of Boeing Service Bulletin 777-32-0085, dated April 14, 2011, have the same configuration as new production airplanes. Air France stated that incorporation of Boeing Service Bulletin 777-32-0085, dated April 14, 2011, and the incorporation of Item 32-CMR-01 of Section 9, Airworthiness Limitations of the Boeing 777 Maintenance Planning Document (MPD) into the airplane maintenance program terminates the repetitive inspections specified in paragraph (g) of the NPRM by modifying the MLG and including the repetitive lubrication in the airplane maintenance program.

We agree that accomplishment of the actions specified in Boeing Service Bulletin 777-32-0085, dated April 14, 2011, involves a final inspection, modification to the MLG, and modification of the airplane maintenance program to terminate the repetitive inspections of paragraph (g) of this AD. Paragraph (j)(2) of this AD provides the optional terminating action. It is, therefore, unnecessary to revise that paragraph. We have made no changes to the AD in this regard.

Request to Clarify Specific Terminating Actions

Air France noted that the optional terminating action specified in paragraph (j)(2) of the NPRM (77 FR 25647, May 1, 2012) does not specify the inner cylinder assembly upgrade with bushing replacement, as specified in Part 2, Option 2, of the Accomplishment Instructions of Boeing Service Bulletin 777-32-0085, dated April 14, 2011.

We agree to revise the AD. Instead of identifying every action, however, we have revised paragraph (j)(2) in this final rule to require all applicable actions specified in the Accomplishment Instructions of Boeing Service Bulletin 777-32-0085, dated April 14, 2011.

Request for Warranty Support

Air France expressed concern regarding the cost of the inspection and modification program, with no industry support from Boeing. Air France noted that an unsafe condition due to normal operation would be considered a major design defect. Air France requested that Boeing propose industry support to cover the maintenance burden of the design defect.

Air France did not request any change to the AD. Further, we do not control warranty coverage for affected individuals. We have, therefore, not changed the AD regarding the estimated costs.

Request to Extend Compliance Time for On-condition Action

Air France reported that it found the service information instructions to be complex, with a high risk of grounding airplanes due to on-condition findings and a lack of Boeing support regarding the inner cylinder assembly. Air France requested that Boeing add service extension limits in case of on-condition findings.

Air France did not specifically request a change to the AD. We cannot allow continued operation if cracking is detected, due to the safety implications and consequences of such cracking. We have not changed the final rule regarding this issue.

Request to Clarify On-condition Actions

Boeing requested that we revise the NPRM (77 FR 25647, May 1, 2012) to clarify the related investigative and corrective actions for the inner cylinder. Boeing noted minor differences between the wording of the NPRM and the wording of Boeing Alert Service Bulletin 777-32A0082, dated December 9, 2010. Boeing requested that we revise the NPRM to more closely align with the Accomplishment Instructions of that service bulletin.

We partially agree. We agree that Boeing's proposed changes are consistent with the procedures provided in the service information specified in the preamble of the

NPRM (77 FR 24647, May 1, 2012). But this level of detail is not provided in the regulatory language of this AD. Instead, the AD refers to the service information for the required procedures. It is not necessary to revise the final rule to account for this request.

Request to Correct Service Bulletin Reference

Boeing noted an incorrect reference to service information specified in the NPRM (77 FR 25647, May 1, 2012). Where the NPRM referred to “Boeing Service Bulletin 777-32A0085,” the correct service bulletin number is “777-32-0085.” We have revised paragraph (j)(2) of this AD accordingly.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (77 FR 25647, May 1, 2012) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (77 FR 25647, May 1, 2012).

We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Costs of Compliance

We estimate that this AD affects 160 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
Lubrication of MLG pivot joints	4 work-hours X \$85 per hour = \$340 per lubrication cycle	\$0	\$340 per lubrication cycle	\$54,400 per lubrication cycle
Detailed and magnetic particle inspections	39 work-hours X \$85 per hour = \$3,315 per inspection cycle	\$0	\$3,315 per inspection cycle	\$530,400 per inspection cycle
Inner cylinder lug bore inspection	6 work-hours X \$85 per hour = \$510 per inspection cycle	\$0	\$510 per inspection cycle	\$81,600 per inspection cycle

We estimate the following costs to do any necessary repairs or replacements that would be required based on the results of the inspections. We have no way of determining the number of aircraft that might need these repairs or replacements.

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacing center axle	25 work-hours X \$85 per hour = \$2,125	\$54,030	\$56,155
Refinishing the lug bore and faces, and installing new bushings	12 work-hours X \$85 per hour = \$1,020	Up to \$3,526	Up to \$4,546
Replacing the inner cylinder assembly	46 work-hours X \$85 per hour = \$3,910	Up to \$254,847	Up to \$258,757

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):

2012-19-10 **The Boeing Company**: Amendment 39-17205; Docket No. FAA-2012-0424; Directorate Identifier 2011-NM-004-AD.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 777-200, -200LR, -300, -300ER, and 777F series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 777-32A0082, dated December 9, 2010.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 32, Landing Gear.

(e) Unsafe Condition

This AD was prompted by heat damage and cracks at the pivot joint location of the main landing gear (MLG) cylinder/truck beam. We are issuing this AD to detect and correct cracking in the MLG center axle and shock strut inner cylinder lugs (pivot joint), which could result in fracture of the MLG pivot joint components and consequent collapse of the MLG.

(f) Compliance

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

(g) Repetitive Lubrication and Inspections

At the applicable compliance times specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 777-32A0082, dated December 9, 2010, except as provided by paragraph (i) of this AD: Lubricate the MLG pivot joints; do a detailed inspection of the outer diameter chrome on the center axles of the MLG for chicken-wire cracks, corrosion, and chrome plate distress; do a magnetic particle inspection of the outer diameter chrome on the center axles of the MLG for cracks; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-32A0082, dated December 9, 2010, except as provided by paragraph (i)(2) of this AD. Repeat the lubrication and inspections thereafter at the applicable interval specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 777-32A0082, dated December 9, 2010. Do all applicable related investigative and corrective actions before further flight.

(h) Definition

For the purposes of this AD, chicken-wire cracks are defined as cracks that occur when stress created in the chrome deposit during plating are relieved. The cracks are evident in the deposited chrome when viewed from a perpendicular plane as a pattern similar to chicken wire. Crack size can vary with plating conditions.

(i) Exceptions to Service Information

(1) Where Boeing Alert Service Bulletin 777-32A0082, dated December 9, 2010, specifies a compliance time after the original issue date of that service bulletin, this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing Alert Service Bulletin 777-32A0082, dated December 9, 2010, specifies use of Royco 11MS grease for the lubrication required by paragraph (g) of this AD, this AD also allows use of MIL-PRF-32014 grease.

(j) Optional Actions for Compliance with Paragraph (g) of this AD

(1) Doing the detailed and magnetic particle inspections in accordance with Part 2 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-32-0080, dated July 10, 2008; or Boeing Special Attention Service Bulletin 777-32-0080, Revision 1, dated April 16, 2009; is considered acceptable for compliance with the inspections of the center axle of the MLG required by paragraph (g) of this AD.

(2) Accomplishment of all applicable actions specified in and in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-32-0085, dated April 14, 2011, is considered acceptable for compliance with the requirements of paragraph (g) of this AD.

(k) Special Flight Permit

Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the airplane can be modified (if the operator elects to do so), if the flight is operated as a non-revenue flight.

(l) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle 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. Information may be e-mailed to:

9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(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, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane and the approval must specifically refer to this AD.

(m) Related Information

For more information about this AD, contact Melanie Violette, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6422; fax: 425-917-6590; email: Melanie.violette@faa.gov.

(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 the following service information to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Service Bulletin 777-32A0082, dated December 9, 2010.

(ii) Boeing Service Bulletin 777-32-0085, dated April 14, 2011.

(iii) Boeing Special Attention Service Bulletin 777-32-0080, dated July 10, 2008.

(iv) Boeing Special Attention Service Bulletin 777-32-0080, Revision 1, dated April 16, 2009.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; phone: 206-544-5000, extension 1; fax: 206-766-5680; Internet <https://www.myboeingfleet.com>.

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

(5) You may also review copies of the 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 September 19, 2012.

Ali Bahrami,
Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

[FR Doc. 2012-23790 Filed 10/02/2012 at 8:45 am; Publication Date: 10/03/2012]