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[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-8133; Directorate Identifier 2015-NM-101-AD; Amendment 39-18631; AD 2016-18-01]

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 737-600, -700, -700C, -800, -900, and -900ER series airplanes. This AD was prompted by reports of heavy corrosion and chrome damage on the forward and aft trunnion pin assemblies of the right and left main landing gears (MLGs). This AD requires repetitive lubrication of the forward and aft trunnion pin assemblies of the right and left MLGs; repetitive inspections of these assemblies for corrosion and chrome damage, and related investigative and corrective actions if necessary; and installation of new or modified trunnion pin assembly components, which will terminate the repetitive lubrication and repetitive inspections. We are issuing this AD to detect and correct heavy corrosion and chrome damage on the forward and aft trunnion pin assemblies of the right and left MLGs, which could result in cracking of these assemblies and collapse of the MLGs.

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 a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet https://www.myboeingfleet.com. You may view this 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. It is also available on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2015-8133.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2015-8133; 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 Docket 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: Alan Pohl, Aerospace Engineer, Airframe Branch, ANM-120S, FAA Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6450; fax: 425-917-6590; email: alan.pohl@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes. The NPRM published in the Federal Register on December 31, 2015 (80 FR 81795) ("the NPRM"). The NPRM was prompted by reports of heavy corrosion and chrome damage on the forward and aft trunnion pin assemblies of the right and left MLGs. The NPRM proposed to require repetitive lubrication of the forward and aft trunnion pin assemblies of the right and left MLGs; repetitive inspections of these assemblies for corrosion and chrome damage, and related investigative and corrective actions if necessary; and installation of new or modified trunnion pin assembly components, which would terminate the repetitive lubrication and repetitive inspections. We are issuing this AD to detect and correct heavy corrosion and chrome damage on the forward and aft trunnion pin assemblies of the right and left MLGs, which could result in cracking of these assemblies and collapse of the MLGs.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

Support for the NPRM

Boeing stated that it concurs with the contents of the NPRM.

Effect of Winglets on Accomplishment of the Proposed Actions

Aviation Partners Boeing stated that accomplishing Supplemental Type Certificate (STC) ST00830SE does not affect the accomplishment of the actions specified in the NPRM.

We concur with the commenter. We have redesignated paragraph (c) of the proposed AD as paragraph (c)(1) and added new paragraph (c)(2) in this AD to state that installation of STC ST00830SE does not affect the ability to accomplish the actions required by this final rule. Therefore, for airplanes on which STC ST00830SE is installed, a "change in product" alternative method of compliance (AMOC) approval request is not necessary to comply with the requirements of 14 CFR 39.17.

Request for Clarification of Requirements

Delta Airlines (DAL) requested an explanation of how the requirements are different between AD 2014-08-11, Amendment 39-17835 (79 FR 23903, April 29, 2014) ("AD 2014-08-11") and the NPRM. DAL noted that the requirements of AD 2014-08-11 include an inspection for discrepancies of the transition radius of the MLG forward trunnion pins, and corrective actions if necessary. DAL elaborated that this inspection is for finish damage (scrapes through primer), signs of corrosion, pitting, and scratches in the base metal of that area. DAL pointed out that the NPRM requires a general visual inspection of the MLG forward trunnion pin assembly for signs of corrosion or chrome plating damage, and if either condition is found, a detailed inspection of the forward trunnion pin assembly is required. DAL mentioned that the detailed inspection requires verification that a new seal and retainer configuration is installed, and if the overhaul limits exceed what is specified in the component maintenance manual, replacement of the forward trunnion pin assembly is necessary. DAL reasoned that the forward trunnion pin inspections required by AD 2014-08-11 should be superseded by the proposed forward trunnion pin inspections in the NPRM. DAL stated that the detailed inspection proposed in the NPRM has additional corrective actions if any loose or missing chrome plating is found, beyond what is required in AD 2014-08-11. DAL also conveyed that the inspections for signs of corrosion are the same in the NPRM and AD 2014-08-11.

We agree to provide clarification regarding how the requirements are different between the requirements in the proposed AD and the requirements mandated by AD 2014-08-11. The applicability of the proposed AD includes certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, line numbers 1 through 3526 inclusive. The applicability of AD 2014-08-11 includes certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, line numbers 1423 through 3526 inclusive. Although certain airplane line numbers are included in the applicability of both the proposed AD and AD 2014-08-11, the issues addressed by the NPRM and AD 2014-08-11 are not the same. Furthermore, the inspection instructions in the service information required for accomplishing the actions in the proposed AD are different from the inspection instructions in the service information required by AD 2014-08-11. The inspections in the proposed AD focus on chrome damage and corrosion on the shank of the forward trunnion pins, and the inspections required by AD 2014-08-11 focus on finish scratches and corrosion in the transition radius of the forward trunnion pins. We have not changed this AD regarding this issue.

In addition, we note that the service information required to do the actions required by AD 2014-08-11 (which cites Boeing Special Attention Service Bulletin 737-32-1402, Revision 1, dated February 7, 2013), includes a recommendation by Boeing that operators accomplish the specified actions concurrently with the actions specified in Boeing Special Attention Service Bulletin 737-32-1448 (Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, is the appropriate source of service information for accomplishing the actions required by this AD). Likewise, Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, includes a recommendation by Boeing that operators accomplish the specified actions

concurrently with the actions specified in Boeing Special Attention Service Bulletin 737-32-1402.

Request for Clarification of Lube Fittings Location

DAL requested clarification regarding the location of the lube fittings for the forward and aft MLG trunnion pin assemblies in paragraph (g) of the NPRM. DAL commented that the NPRM stated to do the repetitive lubrication in accordance with Work Package 1 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015. DAL noted that Work Package 1 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, refers to section 12-21-11 of the Boeing 737-600/700/800/900 Aircraft Maintenance Manual (AMM) as an accepted procedure for the repetitive lubrication of the MLG trunnion pin assemblies. DAL stated that section 12-21-11 of the AMM specifically identifies the locations of the trunnion bearing housing and the aft trunnion bearing, but does not specifically identify the locations of the two lube fittings for the forward and aft trunnion pins.

We agree with the commenter that the two lube fittings for the forward and aft trunnion pins are not specifically mentioned in section 12-21-11 of the Boeing 737-600/700/800/900 AMM. These locations are identified as Item [6], "Outer Cylinder," on page 307 of the AMM. However, there are only three lube fittings associated with Item [6], so it is possible to determine which two fittings are to be used for lubricating the forward and aft trunnion pins. We consulted with Boeing and confirmed that the two lube fittings are located on the bottom of the outer cylinder trunnion, directly under the pins. We have not changed this AD regarding this issue.

Request for Clarification of Corrective Actions in Paragraph (h) of the Proposed AD

DAL requested clarification of certain corrective actions in paragraph (h) of the proposed AD. DAL asked if an operator can replace an affected trunnion pin assembly instead of overhauling it. DAL pointed out that neither the NPRM nor Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, specify the part number of the replacement trunnion pin assembly. DAL asked if an operator can replace an affected pin assembly with any properly approved pin assembly using the Boeing 737 Aircraft Illustrated Parts Catalog, Boeing Drawing 161A0002, "Boeing Model 737-NG Main Landing Gear Component Interchangeability List," or a similar document.

We agree with the commenter's request for clarification. Operators may elect to replace a trunnion pin assembly with a serviceable unit in lieu of performing an overhaul. However, operators should be aware that some of the existing trunnion pin assemblies require modification. Figures 9, 11, and 12 of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, provide instructions for modifying certain pin assemblies. Note (c) in each of these figures refers to paragraph 2.C.3., "Parts Modified and Reidentified," of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, which shows the existing and modified part numbers. For use of other part numbers, such as those identified in the Boeing 737 Aircraft Illustrated Parts Catalog or Boeing Drawing 161A0002, "Boeing Model 737-NG Main Landing Gear Component Interchangeability List," operators may request an alternative method of compliance in accordance with the procedures specified in paragraph (m) of this AD. We have not changed this AD regarding this issue.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this 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 for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

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

Related Service Information under 1 CFR part 51

We reviewed Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015. The service information describes procedures for lubricating the forward and aft trunnion pin assemblies on the left and right MLGs, inspecting the forward and aft trunnion pin assemblies for corrosion or damage, and performing corrective actions. In addition, the service information describes procedures for installing a new forward trunnion pin housing assembly, seal, and retainer configuration. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 1,023 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	2 work-hours X $85 per hour = $170, per lubrication cycle	$0	$170	$173,910, per lubrication cycle (1,023 airplanes)

Inspection (Groups 1 and 2, Configuration 1 airplanes)	51 work-hours X $85 per hour = $4,335, per inspection cycle	$0	$4,335	$4,282,980, per inspection cycle (988 airplanes)
Inspection (Group 3 airplanes)	93 work-hours X $85 per hour = $7,905, per inspection cycle	$0	$7,905	$276,675, per inspection cycle (35 airplanes)
Replacement/overhaul (Groups 1 and 2 airplanes)	84 work-hours X $85 per hour = $7,140	$0	$7,140	$7,054,320 (988 airplanes)
Replacement/overhaul (Group 3 airplanes)	86 work-hours X $85 per hour = $7,310	$0	$7,310	$255,850 (35 airplanes)

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):

2016-18-01 The Boeing Company: Amendment 39-18631; Docket No. FAA-2015-8133; Directorate Identifier 2015-NM-101-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

(1) This AD applies to certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, certificated in any category, as identified in Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015.

(2) Installation of Supplemental Type Certificate (STC) ST00830SE (http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/184DE9A71EC3FA5586257EAE00707DA6?OpenDocument&Highlight=st00830se) does not affect the ability to accomplish the actions required by this AD. Therefore, for airplanes on which STC ST00830SE is installed, a "change in product" alternative method of compliance (AMOC) approval request is not necessary to comply with the requirements of 14 CFR 39.17.

(d) Subject

Air Transport Association (ATA) of America Code 32, Landing Gear.

(e) Unsafe Condition

This AD was prompted by reports of heavy corrosion and chrome damage of the forward and aft trunnion pin assemblies of the right and left main landing gears (MLGs). We are issuing this AD to detect and correct heavy corrosion and chrome damage of the forward and aft trunnion pin assemblies of the right and left MLGs, which could result in cracking of these assemblies and collapse of the MLGs.

(f) Compliance

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

(g) Repetitive Lubrication of MLG Trunnion Pin Assemblies

For airplanes in Groups 1 and 2, Configuration 1, and airplanes in Group 3, as identified in Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015: Except as required by paragraph (k) of this AD, at the applicable time

specified in Table 1 or Table 2 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, lubricate the forward and aft trunnion pin assemblies of the left and right MLGs, in accordance with Work Package 1 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015. Repeat the lubrication thereafter at intervals not to exceed those specified in paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015. Accomplishment of the actions specified in paragraph (i) of this AD terminates the repetitive lubrication required by this paragraph.

(h) Repetitive Inspections, Corrective Actions, and Lubrication

For airplanes in Groups 1 and 2, Configuration 1, and airplanes in Group 3, as identified in Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015: Except as required by paragraph (k) of this AD, at the applicable time specified in Table 1 or Table 2 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, do a general visual inspection of the left and right MLGs at the forward and aft trunnion pin locations and the visible surfaces of the forward and aft trunnion pin assemblies for signs of corrosion or chrome plating damage and lubricate the forward and aft trunnion pin assemblies, in accordance with Work Package 2 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015. Repeat the general visual inspection thereafter at intervals not to exceed those specified in paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015. If any discrepancy is found during any inspection required by this paragraph, before further flight, do all applicable related investigative and corrective actions in accordance with Work Package 2 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737 32-1448,

Revision 1, dated May 29, 2015. Accomplishment of the actions required by paragraph (i) of this AD terminates the repetitive inspections required by this paragraph.

(i) Modification of MLG Trunnion Pin Assemblies

For airplanes in Groups 1 and 2, Configuration 1, and airplanes in Group 3, as identified in Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015: Except as required by paragraph (k) of this AD, at the applicable time specified in Table 1 or Table 2 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, modify and lubricate the left and right MLG trunnion pin assemblies, and do all applicable related investigative and corrective actions, in accordance with Work Package 3 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015. Accomplishment of the actions in Work Package 3 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, terminates the repetitive lubrication required by paragraph (g) of this AD and the repetitive inspections required by paragraph (h) of this AD.

(j) Replacement of MLG Forward Trunnion Pin Housing Assembly, Seal, and Retainer

For airplanes in Groups 1 and 2, Configuration 2, as identified in Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015: At the applicable time specified in Table 3 of paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, replace the seal, retainer, and support ring assembly with a new seal and retainer configuration; install the forward trunnion pin assembly into the housing assembly; and lubricate the forward and aft trunnion pin assemblies for the left and right MLGs; in accordance with

Work Package 4 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015.

(k) Exception to Service Information Specification

Where paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015, specifies a compliance time "from the original issue date on this service bulletin," this AD requires compliance within the specified compliance time "after the effective date of this AD."

(l) Credit for Previous Actions

This paragraph provides credit for the requirements of paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Boeing Special Attention Service Bulletin 737-32-1448, dated May 19, 2011, which is not incorporated by reference in this AD.

(m) 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 paragraph (n)(1) of this AD. Information may be emailed 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, modification, or alteration 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. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(n) Related Information

(1) For more information about this AD, contact Alan Pohl, Aerospace Engineer, Airframe Branch, ANM-120S, FAA Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6450; fax: 425-917-6590; email: alan.pohl@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (o)(3) and (o)(4) of this AD.

(o) 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 Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015.

(ii) Reserved.

(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; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet https://www.myboeingfleet.com.

(4) You may view this 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 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 August 18, 2016.

Dorr M. Anderson,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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