



適航指令發布單

Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2019-02-008	發布日期 Date issued	2019/2/15
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	<p>This AD applies to all The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, certificated in any category. These airplanes are specified in paragraphs (c)(1)(i) through (c)(1)(vii) of this AD. (i) Airplanes in Groups 1 and 2, Configuration 1, as identified in Boeing Special Attention Service Bulletin 737-32-1448, Revision 2, dated August 2, 2017 (“BSASB 737-32-1448, R2”). (ii) Airplanes in Groups 1 and 2, Configuration 2, as identified in BSASB 737-32-1448, R2. (iii) Airplanes in Group 3, as identified in BSASB 737-32-1448, R2. (iv) Airplanes in Groups 4 and 5, Configuration 1, as identified in BSASB 737-32-1448, R2, except where this service bulletin specifies the groups as line numbers 3527 through 6510 inclusive, this AD specifies those groups as line number 3527 through any line number of an airplane with an original Certificate of Airworthiness or an original Export Certificate of Airworthiness dated on or before the effective date of this AD. (v) Airplanes in Groups 4 and 5, Configuration 2, as identified in BSASB 737-32-1448, R2, except where this service bulletin specifies the groups as line numbers 3527 through 6510 inclusive, this AD specifies those groups as line number 3527 through any line number of an airplane with an original Certificate of Airworthiness or an original Export Certificate of Airworthiness dated on or before the effective date of this AD. (vi) Airplanes in Groups 6 as identified in BSASB 737-32-1448, R2, except where this service bulletin specifies the groups as line numbers 3527 through 6510 inclusive, this AD specifies those groups as line number 3527 through any line number of an airplane with an original Certificate of Airworthiness or an original Export Certificate of Airworthiness dated on or before the effective date of this AD. (vii) All Model 737-600, -700, -700C, -800, -900 and -900ER series airplanes with an original Certificate of Airworthiness or an original Export Certificate of Airworthiness dated after the effective date of this AD. (2) Installation of Supplemental Type Certificate (STC) 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.</p>		
主旨摘要	<p>This AD required inspection of the forward and aft trunnion pin assemblies of the right and left main landing gears (MLGs) because of corrosion and chrome damage</p>		

<p>民航局 CAA</p> <p><input type="checkbox"/> 本國產品 Native products</p> <p><input type="checkbox"/> 其他個案 Other</p>	<p>設計國民航主管機構 Original Authorities</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/> FAA</td> <td><input type="checkbox"/> Germany LBA</td> </tr> <tr> <td><input type="checkbox"/> EASA</td> <td><input type="checkbox"/> CAA-NL</td> </tr> <tr> <td><input type="checkbox"/> Brazil</td> <td><input type="checkbox"/> UK CAA</td> </tr> <tr> <td><input type="checkbox"/> Transport Canada Civil Aviation</td> <td><input type="checkbox"/> Japan CAB</td> </tr> <tr> <td><input type="checkbox"/> DGAC</td> <td><input type="checkbox"/> CAA of Israel</td> </tr> <tr> <td></td> <td><input type="checkbox"/> Other _____</td> </tr> </table>		<input checked="" type="checkbox"/> FAA	<input type="checkbox"/> Germany LBA	<input type="checkbox"/> EASA	<input type="checkbox"/> CAA-NL	<input type="checkbox"/> Brazil	<input type="checkbox"/> UK CAA	<input type="checkbox"/> Transport Canada Civil Aviation	<input type="checkbox"/> Japan CAB	<input type="checkbox"/> DGAC	<input type="checkbox"/> CAA of Israel		<input type="checkbox"/> Other _____
<input checked="" type="checkbox"/> FAA	<input type="checkbox"/> Germany LBA													
<input type="checkbox"/> EASA	<input type="checkbox"/> CAA-NL													
<input type="checkbox"/> Brazil	<input type="checkbox"/> UK CAA													
<input type="checkbox"/> Transport Canada Civil Aviation	<input type="checkbox"/> Japan CAB													
<input type="checkbox"/> DGAC	<input type="checkbox"/> CAA of Israel													
	<input type="checkbox"/> Other _____													
	<p>設計國 AD 編號 Original AD number</p>	<p>2019-01-03</p>												
	<p>1. 直接採用原 AD 之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) _</p> <p style="margin-left: 40px;">a. 生效日期另訂為(Re-specify the effective date as) : _____</p> <p style="margin-left: 40px;">b. 執行時限另訂為(Re-specify the compliance time or period as) : _____</p> <p>2. 使用人是否需要將 AD 執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)</p>													
<p>備註 Note</p>	<p>ATA 32. This AD replaces AD 2016-18-01(CAA-2016-09-002).</p>													
<p>註： 1. AD 內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail： adcaa@mail.caa.gov.tw</p> <p>Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail： adcaa@mail.caa.gov.tw</p>														

CAA Form ACS-P08-02

第一頁/共一頁

[Federal Register Volume 84, Number 29 (Tuesday, February 12, 2019)]
[Rules and Regulations]
[Pages 3290-3297]
From the Federal Register Online via the Government Publishing Office [www.gpo.gov]
[FR Doc No: 2019-01518]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0162; Product Identifier 2017-NM-116-AD; Amendment 39-19542; AD 2019-01-03]

RIN 2120-AA64

Airworthiness Directives; the Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2016-18-01, which applied to certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes. AD 2016-18-01 required repetitive lubrication of the forward and aft trunnion pin assemblies of the right and left main landing gears (MLGs); repetitive inspection 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 terminated the repetitive lubrication and repetitive inspections. Since we issued AD 2016-18-01, we have determined that rotatable parts were not addressed in that AD, and it is therefore necessary to include all airplanes of the affected models in the applicability. This AD retains the requirements of AD 2016-18-01, adds airplanes to the applicability, and prohibits the installation of a MLG or MLG trunnion pin assembly under certain conditions. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective March 19, 2019.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of March 19, 2019.

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0162.

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-2018-0162; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The address for Docket Operations (phone: 800-647-5527) is 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 Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; telephone and fax: 206-231-3527; email: alan.pohl@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2016-18-01, Amendment 39-18631 (81 FR 59830, August 31, 2016) (“AD 2016-18-01”). AD 2016-18-01 applied to certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes. The NPRM published in the Federal Register on March 5, 2018 (83 FR 9238). The NPRM was prompted by a determination that rotatable parts were not addressed in AD 2016-18-01, and that it was therefore necessary to include all airplanes of the affected models in the applicability. The NPRM proposed to retain all requirements of AD 2016-18-01 and add airplanes to the applicability. The NPRM also proposed to prohibit the installation of a MLG or MLG trunnion pin assembly on any airplane identified in paragraph (c) of the proposed AD unless certain actions are accomplished. We are issuing this AD to address 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.

Effect of Winglets on Accomplishment of the Proposed Actions

Aviation Partners Boeing stated that accomplishing the installation of winglets using Supplemental Type Certificate (STC) ST00830SE does not affect compliance with the actions proposed in the NPRM.

We concur with the commenter. We have redesignated paragraph (c) of the proposed AD as paragraph (c)(1) of this AD and added paragraph (c)(2) to this AD to state that installation of STC 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.

Request To Include Alternative Action to Inspection To Determine Part Number

All Nippon Airways (ANA) requested that the inspection to determine the part numbers of the existing parts, as specified in paragraph (g) of the proposed AD, not be required if the repetitive

lubrication and inspection, as specified in paragraphs (h) and (i) of the proposed AD, have already been performed.

We agree with the commenter's request. The alternative action recommended by ANA will maintain an acceptable level of safety by continuing the lubrication and inspection requirements in this AD. We have revised paragraph (g) of this AD to state that operators may accomplish continued lubrication and inspection as required by paragraphs (h) and (i) of this AD, at the specified times, in lieu of the inspection to determine the existing part numbers.

Request To Clarify Purpose of Inspection To Determine Part Number

Alaska Airlines (Alaska), Boeing, and Southwest Airlines (SWA) requested that paragraph (g) of the proposed AD be revised to clarify that the inspection is to determine if any of the “existing” part numbers identified in paragraph 2.C.3., “Parts Modified and Reidentified,” of Boeing Special Attention Service Bulletin 737-32-1448, Revision 2, dated August 2, 2017 (“BSASB 737-32-1448, R2”), are installed. Alaska noted that paragraph 2.C.3. of BSASB 737-32-1448, R2, has two columns of part numbers, one for existing part numbers and one for new part numbers.

The commenters noted that paragraph (g) of the proposed AD states that the purpose of the inspection is to determine if any of the MLG trunnion pin assembly part numbers identified in paragraph 2.C.3. of BSASB 737-32-1448, R2, are installed. The commenters pointed out that this requested change would align the wording in the proposed AD with the wording in paragraph 2.C.3. of BSASB 737-32-1448, R2.

In addition, Boeing observed that the existing parts identified in paragraph 2.C.3. of BSASB 737-32-1448, R2, include outer cylinder assemblies and race and ball assemblies, as well as MLG trunnion pin assemblies. Boeing recommended that the header to paragraph (g) of the proposed AD be revised to clarify that this inspection is to determine part numbers for all assembly types, rather than specify the part number of only the MLG and MLG trunnion pin assembly.

We agree with the commenters' requests for the reasons provided by the commenters. We have revised the header to paragraph (g) of this AD to specify “Inspection to Determine Part Numbers.” We have also revised paragraph (g) of this AD to state, “. . . do an inspection to determine if any of the existing part numbers identified in . . . A review of airplane maintenance records is acceptable in lieu of this inspection if the part number of each existing part number can be conclusively determined from that review.”

Request To Remove Inspection Requirement for Certain Airplanes

SWA and Ryanair (RJR) requested that airplanes identified in paragraphs (c)(1) and (c)(4) of the proposed AD (paragraphs (c)(1)(i) and (c)(1)(iv) in this AD) be relieved from doing the inspection to determine part numbers, or the review of airplane maintenance records, specified in paragraph (g) of the proposed AD. RJR also stated that the airplanes identified in these paragraphs have not incorporated the actions in Boeing Special Attention Service Bulletin 737-32-1448, dated May 19, 2011 (“BSASB 737-32-1448”).

SWA indicated that the affected MLGs would have already been identified, as required by AD 2016-18-01, and the inspection and lubrication actions described in Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015 (“BSASB 737-32-1448, R1”), would have already started on those airplanes. RJR stated that all MLGs would need to have all required actions completed to verify AD compliance anyway, and a records check would not yield any further benefit and would not outweigh the amount of work required to complete the records check.

In addition, RJR stated that if an inspection to determine a part number or a records check is completed on an airplane identified in paragraph (c)(1) or (c)(4) of the proposed AD (paragraph (c)(1)(i) or (c)(1)(iv) of this AD), and it is determined that the affected rotatable parts are installed on the airplane, the rotatable parts may incorrectly be assumed to be in compliance with the requirements specified in the proposed AD. RJR stated that there is no way to determine if the MLG forward

trunnion pin seal and retainer are AD compliant because the details would not be included in documentation and could be verified only if the MLG was removed from the airplane and inspected. This would incur a requirement to remove every MLG from every airplane in an operator's fleet within 30 days after the effective date of the AD to determine if the installation is compliant with the requirements of the AD.

RJR also stated that BSASB 737-32-1448, R2, does not clearly indicate for which airplanes operators would need to do the inspection to determine the part number or records check. RJR pointed out that page 7 of BSASB 737-32-1448, R2, indicates that only airplanes in Group 1-3 that have accomplished the actions in BSASB 737-32-1448 or BSASB 737-32-1448, R1, would need to do the inspection or records check, but page 42, Table 1, for Group 1-2 airplanes, configuration 1, states this configuration relates only to airplanes on which the actions in the service bulletin have not been completed. RJR mentioned that it submitted a service request to Boeing to clarify if the intent of this action is only for airplanes on which the actions in BSASB 737-32-1448 or BSASB 737-32-1448, R1, have been completed.

We do not agree with the commenters' requests. We appreciate the operators' concerns that this records check does not appear to be necessary. However, BSASB 737-32-1448, R1, which is the required service information for compliance with AD 2016-18-01, did not address part rotability. An operator might have complied with the requirements of AD 2016-18-01 on a given airplane, and then subsequently rotated a non-compliant MLG and installed it on that same airplane. Shortly after AD 2016-18-01 was issued, one operator with a large number of affected airplanes informed the FAA that three-fourths of those airplanes no longer had the same landing gear that was installed when the airplane was delivered.

Therefore, as explained elsewhere in this AD, it is necessary to supersede AD 2016-18-01 to address the unsafe condition by addressing rotability. In order to do this, the actions required by paragraphs (h), (i), and (j) of this AD are contingent upon knowing what parts are installed. An inspection for parts modified and reidentified was not included in BSASB 737-32-1448, R1, and consequently was not mandated by AD 2016-18-01.

Operators should have adequate maintenance records to determine if the MLG forward trunnion pin seal and retainer are AD compliant. If this is not the case, then it might be necessary, as indicated by RJR, to remove the MLG from the airplane to identify the part numbers.

Our change to paragraph (g) of this AD, allowing repetitive lubrication and inspection instead of the inspection to determine the part numbers or the records check, may provide relief to operators. If operators choose to continue to perform the repetitive lubrication and inspection, then they are not required to do the inspection to determine the part number.

In regard to RJR's observation of discrepancies in BSASB 737-32-1448, R2, we note that the information on page 7 is part of the Revision Transmittal Sheet, which explains the effects of the actions described in BSASB 737-32-1448, R2, for airplanes on which the actions in BSASB 737-32-1448 or BSASB 737-32-1448, R1, were previously done. The information in the Revision Transmittal Sheet is related to but not mandated by this AD. RJR has correctly sent its concerns to Boeing to address inconsistencies in its service information.

We have not changed paragraph (g) to this AD regarding these issues.

Request To Revise Parts Installation Limitation Paragraph

Boeing and SWA requested that paragraph (m) of the proposed AD be revised to include all existing parts identified in paragraph 2.C.3, "Parts Modified and Reidentified," of BSASB 737-32-1448, R2, not just the MLG or MLG forward trunnion pin assembly. Boeing noted that in addition to the MLG and MLG forward trunnion pin assembly, the list of parts includes the outer cylinder assembly, and race and ball assemblies.

We agree with the commenters' requests. We have revised paragraph (m) of this AD to state that "As of the effective date of this AD, no person may install existing parts identified in paragraph 2.C.3., 'Parts Modified and Reidentified,' of BSASB 737-32-1448, R2, on any airplane identified in

paragraphs (c)(1)(i) through (c)(1)(vii) of this AD, unless the actions required by paragraph (j) or (k), as applicable, of this AD have been accomplished on the parts.”

Request To Revise Parts Installation Limitation Paragraph To Include Newly Purchased Parts

Delta Air Lines (DAL) requested that paragraph (m) of the proposed AD be revised to allow operators to install any newly purchased spare parts that are not specified in paragraph 2.C.3., “Parts Modified and Reidentified,” of BSASB 737-32-1448, R2. DAL stated that paragraph (m) of the proposed AD does not include a provision for parts that are not affected by the part number inspection required by paragraph (g) of the proposed AD. DAL also mentioned that many airplanes have been delivered with parts for which paragraphs (j) and (k) of the proposed AD are not applicable, and with parts that are identified through the inspection or records review specified in paragraph (g) of the proposed AD.

We do not agree with the commenter's request. Although we appreciate the commenter's concern, paragraph (m) of this AD already addresses this issue with the phrase “as applicable.” Paragraph (m) of this AD applies only to parts that are subject to the requirements of paragraphs (j) and (k) of this AD and does not apply to newly purchased spare parts. In addition, as previously mentioned, we have revised the wording in paragraph (m) of this AD in response to another comment, and this revised wording addresses the commenter's concern. We have not revised this AD further in regard to this issue.

Request To Provide Additional Credit for Previous Actions

DAL observed that paragraph (n) of the proposed AD did not provide credit for previously accomplished actions that comply with the inspection to determine the part numbers, specified in paragraph (g) of the proposed AD. DAL contended that once the part numbers have been identified, through inspection or maintenance records review, it is not necessary to repeat the inspection. We infer that DAL is requesting a revision to paragraph (n) of the proposed AD to include credit for inspections for part number identification specified in paragraph (g) of the proposed AD.

We do not agree with the commenter's request. Neither the original issue of BSASB 737-32-1448, nor BSASB 737-32-1448, R1, included either an inspection to determine part numbers or a maintenance records check. Also, AD 2016-18-01 did not include a parts installation limitation provision. Paragraph (f), “Compliance,” of this AD already accounts for actions accomplished prior to the effective date of this AD. Specifically, paragraph (f) of this AD states “Comply with this AD within the compliance times specified, unless already done.” If DAL has adequate records to demonstrate that the part number determination required by paragraph (g) of this AD has already been accomplished for an airplane, then it is not necessary to repeat this action. We have not changed this AD in regard to this issue.

Request To Allow Use of Serviceable Rotable Parts

DAL requested that operators be permitted to use serviceable rotatable parts in lieu of returning modified parts to the same airplane from which they were removed. DAL noted that paragraph (j) of the proposed AD would require modification of the left and right MLG trunnion pin assemblies in accordance with work package 3 of the Accomplishment Instructions of BSASB 737-32-1448, R2. DAL mentioned that many operators use pools of rotatable spare parts to reduce the time necessary for maintenance. DAL explained that rotatable parts are airplane parts and components that can be rebuilt or overhauled to be reinstalled on the same airplane or put in stock to be used on a different airplane.

We agree with the intent of the commenter's request, but find it unnecessary to change this AD to address the concern. These parts are rotatable. We are superseding AD 2016-18-01 because it did not address rotatable parts. We appreciate DAL's concern regarding returning modified parts to the same airplane from which they were removed. This AD does not include that requirement, and operators

may do as DAL suggested and use rotatable parts, provided the parts are per type design and meet any other pertinent requirements prior to installation. In addition, the revision to paragraph (m) of this AD, discussed previously, addresses DAL's concern. We have not revised this AD further in regard to this issue.

Request for Clarification of Difference Between the Proposed AD and Service Information

RYP asked how an operator would show compliance with the requirements specified in the proposed AD for an airplane that received a certificate of airworthiness one or two days before the effective date of the final rule. RYP asked if there would be an additional revision to BSASB 737-32-1448, R2, that expanded the line number applicability and if that revised service bulletin would be included in a subsequent AD. We infer that RYP is requesting clarification regarding the difference between the proposed AD and the service information regarding airplane applicability.

We acknowledge the commenter's concern. For an issue that involves rotatable parts, an AD Friendly service bulletin with respect to applicability would include all affected airplanes, in this case, all Model 737 NG airplanes, whether or not the airplanes have been delivered. However, the effectivity of BSASB 737-32-1448, R2 does not include all airplanes of the affected models. Since it is possible to remove a part from one airplane and install it without change on an airplane not identified in the service bulletin effectivity, we have determined it necessary to expand the applicability of this AD beyond that of the service information provided by Boeing so that installation of certain rotatable parts, addressed in paragraph (m) of this AD, is restricted on all airplanes of the affected models. Boeing did not reflect this in the effectivity and airplane groups of BSASB 737-32-1448, R2; therefore, the FAA had to re-define the airplane groups as described in paragraph (c), "Applicability," of this AD.

Regarding RYP's concern for demonstrating immediate AD compliance, immediate compliance is not required by this AD. Each of the required actions in paragraphs (g) through (k) of this AD state that the compliance time is "... at the [applicable] time specified in Table ... of paragraph 1.E., 'Compliance,' of BSASB 737-32-1448, R2." These compliance times range from 30 days to 10 years.

Regarding RYP's question whether there will be another revision to BSASB 737-32-1448, R2, to expand the effectivity to match the applicability in this AD, that determination would be made by Boeing. We agree it is beneficial to all concerned for the service information to match the content of the AD. We note that if Boeing would provide a revised service bulletin that addressed rotatability, then this could be approved as an AMOC and would be less confusing to the operators.

We have not revised this AD in regard to this issue.

Request To Clarify Certain Requirements

MNGJET requested that the NPRM include a clarification of the differences between BSASB 737-32-1448 and BSASB 737-32-1448, R1, which were the service bulletins referred to in AD 2016-18-01. MNGJET specifically pointed out the difference between these service bulletin revisions regarding the MLG forward trunnion seal and retainer configuration.

We do not agree with the commenter's request. The revisions to the service information are in regard to AD 2016-18-01, which is being superseded by this AD. This AD refers to BSASB 737-32-1448, R2, as the service information.

Furthermore, the reason for the difference between BSASB 737-32-1448 and BSASB 737-32-1448, R1, concerning the MLG forward trunnion seal and retainer configuration, is explained in paragraph 1.C, "Reason," of both BSASB 737-32-1448, R1, and BSASB 737-32-1448, R2. It is not necessary to either reiterate or explain the differences between different revisions of a service bulletin. Suggestions for improvement of the related service information should be directed to Boeing. Also, FAA ADs have been written using AD Friendly standards since 2005. The requirements of ADs are written at a higher level, and the detailed information is in the related service information.

No change has been made to this AD in regard to these issues.

Request To Extend Compliance Time for Certain Airplanes

AMES, a continued airworthiness management organization (CAMO) for Boeing Business Jets (BBJs), requested that the compliance time for the replacement of the MLG forward trunnion pin housing assembly, seal, and retainer, in paragraph (k) of the proposed AD, be extended for BBJs. Specifically, AMES asked that for only BBJs on a low utilization maintenance program (LUMP) program, with a 12-year landing gear overhaul interval, the compliance time in the proposed AD be extended from 10 years to 12 years after the last landing gear overhaul. AMES highlighted that these are low-utilization airplanes, flying less than 1,200 flight hours per year, and the MLG overhaul interval is every 12 years. AMES observed that the compliance time for the actions in the proposed AD is 10 years after the effective date of AD 2016-18-01 (October 5, 2026), which is before the next scheduled maintenance check. AMES stated that a limited number of BBJs would be affected and there would be limited impact.

AMES also suggested that because the BBJs have low-time landing gears, owners do not want to exchange the low-time gears with high-time gears from airlines. AMES expressed that the 12-year check ground time is the best time to send the gears for overhaul.

We disagree with the commenter's request. The commenter did not provide definitive supporting data that would justify the requested extension of the compliance time. In addition, Boeing's service information, BSASB 737-32-1448, R2, retains the same 10-year compliance time for BBJs.

Regarding the commenter's concern of receiving a high-time MLG in exchange for a low-time MLG, presumably from sending these MLGs to a repair facility and receiving an exchange unit from a pool of MLGs, it is unclear how this would be prevented by having a 12-year compliance time instead of a 10-year compliance time.

We have not made any changes to this AD in regard to these issues.

Concern Regarding Possible Parts Shortage

United Airlines expressed concern that Boeing may not have an adequate stock of MLG forward trunnion pin seals and retainers to meet the requirement for operators to replace these parts. United Airlines noted that a parts shortage did arise from October 2016 to March 2017 when Boeing could not supply operators with required parts. United Airlines observed that a parts shortage would lead to unnecessarily grounding airplanes.

We appreciate the commenter's concern. However, as mentioned by the commenter, this issue has been ongoing since October 2016. Boeing is aware of operator concerns and should ensure that an adequate supply of required parts is available. Because of the identified unsafe condition, further delay of this final rule is not appropriate. In addition, the FAA has issued an AMOC for AD 2016-18-01 to a spare parts supplier for installation of its split ball assembly in lieu of the corresponding part specified in BSASB 737-32-1448, R1. That AMOC is still applicable to the corresponding provisions of this AD, as noted in paragraph (o)(4) of this AD. We have not revised this AD in regard to 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 addressing 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 BSASB 737-32-1448, R2. This service information describes procedures for determining the part numbers of the forward and aft trunnion pin assemblies installed on the right and left MLGs, inspections for corrosion and damage on the forward and aft trunnion pin assemblies and related investigative and corrective actions, repetitive lubrication of these assemblies, and installation of new or modified trunnion pin assembly components. 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 up to 1,814 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 (retained actions from AD 2016-18-01)	2 work-hours × \$85 per hour = \$170 per lubrication cycle	\$0	\$170 per lubrication cycle	\$173,910, per lubrication cycle (1,023 airplanes).
Inspection (Groups 1 and 2, Configuration 1 airplanes; retained actions from AD 2016-18-01)	51 work-hours × \$85 per hour = \$4,335 per inspection cycle	0	\$4,335 per inspection cycle	\$4,282,980 per inspection cycle (988 airplanes).
Inspection (Group 3 airplanes; retained actions from AD 2016-18-01)	93 work-hours × \$85 per hour = \$7,905 per inspection cycle	0	\$7,905 per inspection cycle	\$276,675 per inspection cycle (35 airplanes).
Replacement/overhaul (Groups 1 and 2 airplanes; retained actions from AD 2016-18-01)	84 work-hours × \$85 per hour = \$7,140	0	\$7,140	\$7,054,320 (988 airplanes).
Replacement/overhaul (Group 3 airplanes retained actions from AD 2016-18-01)	86 work-hours × \$85 per hour = \$7,310	0	\$7,310	\$255,850 (35 airplanes).
Lubrication pin assemblies (new action, Work Packages 1 and 2)	2 work-hours × \$85 per hour = \$170 per lubrication cycle	0	\$170 per lubrication cycle	Up to \$308,380, per lubrication cycle (up to 1,814 airplanes).
Inspection (new action; Groups 1, 2, 4, and 5, Configuration 1 airplanes; Work Package 2)	51 work-hours × \$85 per hour = \$4,335 per inspection cycle	0	\$4,335 per inspection cycle	Up to \$7,594,920 per inspection cycle (up to 1,752 airplanes).

Inspection (new action; Groups 3 and 6 airplanes; Work Package 2)	93 work-hours × \$85 per hour = \$7,905 per inspection cycle	0	\$7,905 per inspection cycle	Up to \$490,110 per inspection cycle (Up to 62 airplanes).
Replacement/overhaul trunnion pin assembly (Groups 1, 2, 4, and 5 airplanes; new action; Work Package 2)	84 work-hours × \$85 per hour = \$7,140	0	\$7,140	Up to \$12,509,280 (up to 1,752 airplanes).
Replacement/overhaul trunnion pin assembly (Groups 3 and 6 airplanes; new action; Work Package 2)	86 work-hours × \$85 per hour = \$7,310	0	\$7,310	Up to \$453,220 (Up to 62 airplanes).

We have received no definitive data that will 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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

Regulatory Findings

We have determined that 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 removing Airworthiness Directive (AD) 2016-18-01, Amendment 39-18631 (81 FR 59830, August 31, 2016), and adding the following new AD:



2019-01-03 The Boeing Company: Amendment 39-19542; Docket No. FAA-2018-0162; Product Identifier 2017-NM-116-AD.

(a) Effective Date

This AD is effective March 19, 2019.

(b) Affected ADs

This AD replaces AD 2016-18-01, Amendment 39-18631 (81 FR 59830, August 31, 2016) (“AD 2016-18-01”).

(c) Applicability

(1) This AD applies to all The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, certificated in any category. These airplanes are specified in paragraphs (c)(1)(i) through (c)(1)(vii) of this AD.

(i) Airplanes in Groups 1 and 2, Configuration 1, as identified in Boeing Special Attention Service Bulletin 737-32-1448, Revision 2, dated August 2, 2017 (“BSASB 737-32-1448, R2”).

(ii) Airplanes in Groups 1 and 2, Configuration 2, as identified in BSASB 737-32-1448, R2.

(iii) Airplanes in Group 3, as identified in BSASB 737-32-1448, R2.

(iv) Airplanes in Groups 4 and 5, Configuration 1, as identified in BSASB 737-32-1448, R2, except where this service bulletin specifies the groups as line numbers 3527 through 6510 inclusive, this AD specifies those groups as line number 3527 through any line number of an airplane with an original Certificate of Airworthiness or an original Export Certificate of Airworthiness dated on or before the effective date of this AD.

(v) Airplanes in Groups 4 and 5, Configuration 2, as identified in BSASB 737-32-1448, R2, except where this service bulletin specifies the groups as line numbers 3527 through 6510 inclusive, this AD specifies those groups as line number 3527 through any line number of an airplane with an original Certificate of Airworthiness or an original Export Certificate of Airworthiness dated on or before the effective date of this AD.

(vi) Airplanes in Groups 6 as identified in BSASB 737-32-1448, R2, except where this service bulletin specifies the groups as line numbers 3527 through 6510 inclusive, this AD specifies those groups as line number 3527 through any line number of an airplane with an original Certificate of Airworthiness or an original Export Certificate of Airworthiness dated on or before the effective date of this AD.

(vii) All Model 737-600, -700, -700C, -800, -900 and -900ER series airplanes with an original Certificate of Airworthiness or an original Export Certificate of Airworthiness dated after the effective date of this AD.

(2) Installation of Supplemental Type Certificate (STC) 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 on the forward and aft trunnion pin assemblies of the right and left main landing gears (MLGs). We are issuing this AD to address 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.

(f) Compliance

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

(g) Inspection To Determine Part Numbers

For airplanes identified in paragraphs (c)(1)(i), (c)(1)(iii), (c)(1)(iv), or (c)(1)(vi) of this AD: Except as required by paragraph (l) of this AD, at the applicable time specified in Table 1, Table 2, Table 4, or Table 5, of paragraph 1.E., "Compliance," of BSASB 737-32-1448, R2, do an inspection to determine if any of the existing part numbers identified in paragraph 2.C.3., "Parts Modified and Reidentified," of BSASB 737-32-1448, R2, are installed. A review of airplane maintenance records is acceptable in lieu of this inspection if the part number of each existing part number can be conclusively determined from that review. Repetitive lubrication and inspection as required by and at the times specified in paragraphs (h) and (i) of this AD are also acceptable in lieu of this inspection to determine the MLG trunnion pin assembly part number.

(h) Repetitive Lubrication of MLG Trunnion Pin Assemblies

For airplanes identified in paragraphs (c)(1)(i), (c)(1)(iii), (c)(1)(iv), or (c)(1)(vi) of this AD, having any part number identified in paragraph 2.C.3., "Parts Modified and Reidentified," of BSASB 737-32-1448, R2, installed: Except as required by paragraph (l) of this AD, at the applicable time specified in Table 1, Table 2, Table 4, or Table 5, of paragraph 1.E., "Compliance," of BSASB 737-32-1448, R2, lubricate the applicable forward and aft trunnion pin assemblies of the right and left MLGs, in accordance with Work Package 1 of the Accomplishment Instructions of BSASB 737-32-1448, R2. Repeat the lubrication thereafter at intervals not to exceed those specified in Table 1, Table 2, Table 4, or Table 5, of paragraph 1.E., "Compliance," of BSASB 737-32-1448, R2. Accomplishment of the actions specified in paragraph (j) of this AD terminates the repetitive lubrication required by this paragraph.

(i) Repetitive Inspections, Corrective Actions, and Lubrication

For airplanes identified in paragraphs (c)(1)(i), (c)(1)(iii), (c)(1)(iv), or (c)(1)(vi) of this AD, having any part number identified in paragraph 2.C.3., "Parts Modified and Reidentified," of BSASB 737-32-1448, R2, installed: Except as required by paragraph (l) of this AD, at the applicable time specified in Table 1, Table 2, Table 4, or Table 5, of paragraph 1.E., "Compliance," of BSASB 737-32-1448, R2, 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 discrepancies including signs of corrosion or chrome plating damage, and lubricate the forward and aft trunnion pin assemblies as applicable, in accordance with Work Package 2 of the Accomplishment Instructions of BSASB 737-32-1448, R2. Repeat the general visual inspection thereafter at intervals not to exceed

those specified in paragraph 1.E., “Compliance,” of BSASB 737-32-1448, R2. 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 BSASB 737-32-1448, R2. Accomplishment of the actions required by paragraph (j) of this AD terminates the repetitive inspections required by this paragraph.

(j) Modification of MLG Trunnion Pin Assemblies

For airplanes identified in paragraphs (c)(1)(i), (c)(1)(iii), (c)(1)(iv), or (c)(1)(vi) of this AD, having any part number identified in paragraph 2.C.3., “Parts Modified and Reidentified,” of BSASB 737-32-1448, R2, installed: Except as required by paragraph (l) of this AD, at the time specified in Table 1, Table 2, Table 4, or Table 5, as applicable, of paragraph 1.E., “Compliance,” of BSASB 737-32-1448, R2, modify the left and right MLG trunnion pin assemblies, including all applicable related investigative and corrective actions, in accordance with Work Package 3 of the Accomplishment Instructions of BSASB 737-32-1448, R2. All applicable related investigative and corrective actions must be done at the time specified in paragraph 1.E., “Compliance,” of BSASB 737-32-1448, R2. Accomplishment of the actions in Work Package 3 of the Accomplishment Instructions of BSASB 737-32-1448, R2, terminates the repetitive lubrication required by paragraph (h) of this AD and the repetitive inspections required by paragraph (i) of this AD.

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

For airplanes identified in paragraphs (c)(1)(ii) and (c)(1)(v) of this AD: Except as required by paragraph (l) of this AD, at the time specified in Table 3 or Table 6, as applicable, of paragraph 1.E., “Compliance,” of BSASB 737-32-1448, R2, 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 BSASB 737-32-1448, R2.

(l) Exception to Service Information Specification

Where paragraph 1.E., “Compliance,” of BSASB 737-32-1448, R2, specifies a compliance time “after the Revision 2 date of this service bulletin,” this AD requires compliance within the specified compliance time after the effective date of this AD.

(m) Parts Installation Limitation

As of the effective date of this AD, no person may install existing parts identified in paragraph 2.C.3., “Parts Modified and Reidentified,” of BSASB 737-32-1448, R2, on any airplane identified in paragraphs (c)(1)(i) through (c)(1)(vii) of this AD, unless the actions required by paragraph (j) or (k), as applicable, of this AD have been accomplished on the parts.

(n) Credit for Previous Actions

(1) This paragraph provides credit for the requirements of paragraph (h) 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; or Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015.

(2) This paragraph provides credit for the requirements of paragraphs (i), (j), and (k) of this AD, if those actions were performed before the effective date of this AD using Boeing Special Attention Service Bulletin 737-32-1448, Revision 1, dated May 29, 2015.

(o) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, 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 certification office, send it to the attention of the person identified in paragraph (p)(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 Branch, FAA, 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.

(4) AMOCs approved previously for AD 2016-18-01 are approved as AMOCs for the corresponding provisions of this AD.

(p) Related Information

(1) For more information about this AD, contact Alan Pohl, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; telephone and fax: 206-231-3527; 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 (q)(3) and (q)(4) of this AD.

(q) 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 2, dated August 2, 2017.

(ii) [Reserved].

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(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 Des Moines, Washington, on December 21, 2018.

Jeffrey E. Duven,
Director, System Oversight Division,
Aircraft Certification Service.