



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2017-0334; Product Identifier 2017-NM-008-AD; Amendment 39-19039; AD 2017-19-09]**

**RIN 2120-AA64**

**Airworthiness Directives; Bombardier, Inc., Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** We are superseding Airworthiness Directive (AD) 2014-25-01, which applied to certain Bombardier, Inc., Model DHC-8-400 series airplanes. AD 2014-25-01 required modifying the nose landing gear (NLG) trailing arm and installing a new pivot pin retention mechanism. This AD instead requires modifying the NLG shock strut assembly. This AD was prompted by reports of discrepancies of a certain bolt at the pivot pin link, resulting in corrosion of the bolt. We are issuing this AD to address the unsafe condition on these products.

**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 Bombardier, Inc., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416-375-4000; fax 416-375-4539; email [thd.qseries@aero.bombardier.com](mailto:thd.qseries@aero.bombardier.com); Internet <http://www.bombardier.com>. You may view this referenced service information at the FAA, Transport Standards Branch, 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-2017-0334.

**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-2017-0334; 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 (telephone 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:** Fabio Buttitta, Aerospace Engineer, Airframe and Mechanical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7303; fax 516-794-5531.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2014-25-01, Amendment 39-18042 (79 FR 73808, December 12, 2014) (“AD 2014-25-01”). AD 2014-25-01 applied to certain Bombardier, Inc., Model DHC-8-400 series airplanes. The NPRM published in the Federal Register on May 9, 2017 (82 FR 21484). The NPRM was prompted by reports of discrepancies of a certain bolt at the pivot pin link, resulting in corrosion of the bolt. The NPRM proposed to require modifying the NLG shock strut assembly. We are issuing this AD to prevent failure of the pivot pin retention bolt, which could result in a loss of directional control or loss of an NLG tire during takeoff or landing.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian Airworthiness Directive CF-2009-29R2, dated December 21, 2016 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for certain Bombardier, Inc., Model DHC-8-400 series airplanes. The MCAI states:

Two in-service incidents have been reported on DHC-8 Series 400 aircraft in which the nose landing gear (NLG) trailing arm pivot pin retention bolt (part number NAS6204-13D) was damaged. One incident involved the left hand NLG tire which ruptured on take-off. Investigation determined that the retention bolt failure was due to repeated contact of the castellated nut with the towing device including both the towbar and the towbarless rigs. The loss of the retention bolt allowed the pivot pin to migrate from its normal position and resulted in contact with and rupture of the tire. The loss of the pivot pin could compromise retention of the trailing arm and could result in

a loss of directional control due to loss of nose wheel steering. The loss of an NLG tire or the loss of directional control could adversely affect the aircraft during take-off or landing.

To prevent the potential failure of the pivot pin retention bolt, Bombardier Aerospace has developed a modification which includes a new retention bolt, a reverse orientation of the retention bolt and a rework of the weight on wheel (WOW) proximity sensor cover to provide clearance for the re-oriented retention bolt.

Since the original issue of this [Canadian] AD [which corresponds to AD 2010-13-04, Amendment 39-16335 (75 FR 35622, June 23, 2010)], there have been several reports of pivot pin retention bolts found missing or damaged. Additional investigation determined that the failures were caused by high contact stresses on the retention bolt due to excessive frictional torque on the pivot pin and an adverse tolerance condition at the retention bolt.

Revision 1 of this [Canadian] AD mandated the installation of a new pivot pin retention mechanism.

Since the issuance of Revision 1 of this [Canadian] AD, there have been reports of chrome peeling on special bolt part number 47205-1 at the pivot pin link resulting in corrosion of the bolt substrate layer.

Revision 2 of this [Canadian] AD mandates the installation of new special bolt part number 47205-3 with additional processing for increased chrome plating adhesion on aeroplanes equipped with nose landing gear shock strut assembly part number 47100-19 or any assembly with Bombardier (BA) Service Bulletin (SB) 84-32-110 incorporated. In addition, Revision 2 of this [Canadian] AD mandates the installation of a new pivot pin retention mechanism that includes new special bolt part number 47205-3 on aeroplanes equipped with nose landing gear shock strut assembly part number 47100-9, 47100-11, 47100-13, 47100-15, or 47100-17 without BA SB 84-32-110 incorporated. The corrective actions of Revision 2 of this [Canadian] AD cancel and replace the corrective actions of Revision 1 of this [Canadian] AD.

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0334.

### **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**

The Air Line Pilots Association, International concurred with the intent of the NPRM.

### **Request to Exclude Setup and Closeout Sections**

Horizon Air asked that we revise paragraph (g) of the proposed AD to exclude the "Job Set-up" and "Close Out" sections of Bombardier Service Bulletin 84-32-145, Revision A, dated October 18, 2016. Horizon Air stated that incorporating those sections as a requirement of the AD restricts an operator's ability to perform other maintenance in conjunction with incorporation of the referenced service information.

We agree with the commenter's request for the reason provided. We have revised paragraph (g) of this AD to require accomplishment of only paragraph 3.B., "Procedure" of the Accomplishment Instructions of Bombardier Service Bulletin 84-32-145, Revision A, dated October 18, 2016.

### **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

change 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**

Bombardier, Inc., has issued Bombardier Service Bulletin 84-32-145, Revision A, dated October 18, 2016. The service information describes procedures for modifying the NLG shock strut assembly by installing a new, improved pivot pin retention mechanism and a new retention bolt. 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 52 airplanes of U.S. registry.

We also estimate that it takes about 2 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Required parts will cost about \$0 per product. Based on these figures, we estimate the cost of this AD on U.S. operators to be \$8,840, or \$170 per product.

## **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 to the Director of the System Oversight Division.

## **Regulatory Findings**

We 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 the 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) 2014-25-01, Amendment 39-18042 (79 FR 73808, December 12, 2014), and adding the following new AD:

**2017-19-09 Bombardier, Inc.:** Amendment 39-19039; Docket No. FAA-2017-0334;

Product Identifier 2017-NM-008-AD.

**(a) Effective Date**

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

**(b) Affected ADs**

This AD replaces AD 2014-25-01, Amendment 39-18042 (79 FR 73808, December 12, 2014).

**(c) Applicability**

This AD applies to Bombardier, Inc., Model DHC-8-400, -401, and -402 airplanes, certificated in any category, serial numbers 4001, 4003 through 4533 inclusive, and 4535, equipped with any nose landing gear (NLG) shock strut assembly having part number 47100-9, 47100-11, 47100-13, 47100-15, 47100-17, or 47100-19.

**(d) Subject**

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

**(e) Reason**

This AD was prompted by reports of discrepancies of a certain bolt at the pivot pin link, resulting in corrosion of the bolt. We are issuing this AD to prevent failure of the pivot pin retention bolt, which could result in a loss of directional control or loss of an NLG tire during takeoff or landing.

**(f) Compliance**

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

**(g) Installation of Improved Pivot Pin Retention Mechanism and Bolt**

Within 6,000 flight hours or 36 months after the effective date of this AD, whichever occurs first: Install a new pivot pin retention mechanism to the NLG shock strut assembly, and replace the existing pivot pin retention bolt with a new bolt, in accordance with paragraph 3.B., "Procedure," of the Accomplishment Instructions of Bombardier Service Bulletin 84-32-145, Revision A, dated October 18, 2016.

**(h) Credit for Previous Actions**

This paragraph provides credit for actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 84-32-145, dated July 26, 2016.

**(i) Other FAA AD Provisions**

The following provisions also apply to this AD:

**(1) Alternative Methods of Compliance (AMOCs):** The Manager, New York 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 ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; fax 516-794-5531. 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.

**(2) Contacting the Manufacturer:** As of the effective date of this AD, for any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada Civil Aviation (TCCA); or Bombardier, Inc.'s TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(j) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian Airworthiness Directive CF-2009-29R2, dated December 21, 2016, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0334.

(2) For more information about this AD, contact Fabio Buttitta, Aerospace Engineer, Airframe and Mechanical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7303; fax 516-794-5531.

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

**(k) 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 this AD specifies otherwise.

(i) Bombardier Service Bulletin 84-32-145, Revision A, dated October 18, 2016.

(ii) Reserved.

(3) For service information identified in this AD, contact Bombardier, Inc., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416-375-4000; fax 416-375-4539; email [thd.qseries@aero.bombardier.com](mailto:thd.qseries@aero.bombardier.com); Internet <http://www.bombardier.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 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 September 7, 2017.

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

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