



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2017-0334; Directorate Identifier 2017-NM-008-AD]**

**RIN 2120-AA64**

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

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

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede Airworthiness Directive (AD) 2014-25-01, for certain Bombardier, Inc., Model DHC-8-400 series airplanes. AD 2014-25-01 currently requires modifying the nose landing gear (NLG) trailing arm and installing a new pivot pin retention mechanism. Since we issued AD 2014-25-01, we have received reports of discrepancies of a certain bolt at the pivot pin link, resulting in corrosion of the bolt. This proposed AD would instead require modifying the NLG shock strut assembly. We are proposing this AD to address the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, 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 Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> 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 proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Fabio Buttitta, Aerospace Engineer, Airframe and Mechanical Systems Branch, ANE-171, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7303; fax 516-794-5531.

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2017-0334; Directorate Identifier 2017-NM-008-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

**Discussion**

On November 28, 2014, we issued AD 2014-25-01, Amendment 39-18042 (79 FR 73808, December 12, 2014) (“AD 2014-25-01”), for certain Bombardier, Inc., Model DHC-8-400 series airplanes. AD 2014-25-01 was prompted by a report of several missing or damaged pivot pin retention bolts. AD 2014-25-01 requires modifying the

NLG trailing arm and installing a new pivot pin retention mechanism. We issued AD 2014-25-01 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 take-off or landing.

Since we issued AD 2014-25-01, we have received reports of missing or damaged pivot pin retention bolts and chrome peeling on special bolt part number 47205-1 at the pivot pin link, resulting in corrosion of the bolt substrate layer. Therefore, we have determined that the actions required by AD 2014-25-01 do not address the identified unsafe condition.

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.

## **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.

## **FAA's Determination and Requirements of this Proposed AD**

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all pertinent information and determined an unsafe condition exists and is likely to exist or develop on other products of the same type design.

## **Costs of Compliance**

We estimate that this proposed AD affects 52 airplanes of U.S. registry.

We also estimate that it would take about 2 work-hours per product to comply with the basic requirements of this proposed AD. The average labor rate is \$85 per work-hour. Required parts would cost about \$0 per product. Based on these figures, we estimate the cost of this proposed 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.

## **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

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.

**The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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:

**Bombardier, Inc.:** Docket No. FAA-2017-0334; Directorate Identifier 2017-NM-008-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 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 missing or damaged pivot pin retention bolts and chrome peeling on 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 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 Aircraft Certification Office (ACO), ANE-170, 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 New York ACO, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO, 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, ANE-170, 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 Branch, ANE-171, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7303; fax 516-794-5531.

(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>. 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.

Issued in Renton, Washington, on May 2, 2017.

Michael Kaszycki,  
Acting Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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