[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0453; Product Identifier 2018-NM-028-AD]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc., Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Supplemental notice of proposed rulemaking (SNPRM); reopening of comment period.

SUMMARY: We are revising an earlier proposal for certain Bombardier, Inc., Model DHC-8-400 series airplanes. This action revises the notice of proposed rulemaking (NPRM) by adding a requirement to replace the lower lock link of the nose landing gear (NLG), which would terminate the repetitive inspections proposed in the NPRM. This action also reduces the applicability in the NPRM. We are proposing this airworthiness directive (AD) to address the unsafe condition on these products. Since these actions would impose an additional burden over those in the NPRM, we are reopening the comment period to allow the public the chance to comment on these changes.

DATES: The comment period for the NPRM published in the Federal Register on May 30, 2018 (83 FR 24694), is reopened.

We must receive comments on this SNPRM 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: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC, 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; Internet: http://www.bombardier.com. You may view this referenced 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.

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-2018-0453; 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 SNPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Darren Gassetto, Aerospace Engineer, Mechanical Systems and Administrative Services Section, New York ACO Branch, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7323; fax 516-794-5531.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2018-0453; Product Identifier 2018-NM-028-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this SNPRM. We will consider all comments received by the closing date and may amend this SNPRM 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 SNPRM.

Discussion

We issued an NPRM to amend 14 CFR part 39 by adding an AD that would apply to certain Bombardier, Inc., Model DHC-8-400 series airplanes. The NPRM published in the Federal Register on May 30, 2018 (83 FR 24694). The NPRM was prompted by reports of the NLG locking in a partially extended position due to loose bushings on a lock link of the NLG locking mechanism. The NPRM proposed to require repetitive inspections of the bushings and the lower lock link of the NLG for discrepancies, and corrective actions if necessary. We are issuing this AD to address excessive free play at the lock link of the NLG locking mechanism, and consequent inability to fully retract or deploy the NLG, which could result in collapse of the NLG and affect the safe landing of the airplane.

Actions Since the NPRM was Issued

Since we issued the NPRM, we have determined that to adequately address the unsafe condition, it is necessary to require replacement of the NLG lower lock link with a new lower lock link having a new configuration.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF-2018-01R1, dated February 4, 2018 (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:

> A landing incident took place whereby the aeroplane's nose landing gear (NLG) was locked in a partially-extended position, leading to gear collapse upon NLG touch down. The investigation revealed that the NLG was locked in this position due to the bushings on the lock link of the NLG locking mechanism becoming loose. This condition was present due to insufficient interference fit which resulted in some bushing outer diameter wear and fretting. A dislodged bushing will also cause the bushing sealant to break. Broken sealant allows moisture ingress and corrosion that can accelerate free play buildup. Excessive free play at the lock link can result in the inability to fully retract or deploy the NLG, resulting in a risk of NLG collapse on landing.
>
> Bombardier Inc. has developed an inspection to identify and correct this condition. [The original version of this Canadian AD required] a repetitive inspection [to detect discrepancies] and corrective actions based on the inspection findings.
>
> Revision 1 of this [Canadian] AD is issued to modify the NLG with a lower lock with improved bushing retention and greasing provisions. Implementing this modification is a terminating action to this [Canadian] AD. The modification has been introduced in production, therefore the applicability of this [Canadian] AD has been reduced. Clarifications have also been made to the retained text of the original version.

Discrepancies include any signs of migration of the bushings, broken or missing edge sealant, diagonal paint cracks on the sealant, and paint stripe misalignment. 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-2018-0453.

Comments

We gave the public the opportunity to participate in developing this proposed AD. We considered the comments received.

Request to Include Revised Service Information

Horizon Air asked that Bombardier Service Bulletin 84-32-153, Revision A, dated February 27, 2018, be incorporated into the proposed AD (in the NPRM). Horizon Air added that a credit paragraph should also be included for the original issue of the referenced service information.

We partially agree with the commenter's request. We have revised this proposed AD to identify Bombardier Service Bulletin 84-32-153, Revision A, dated February 27, 2018, as the appropriate source of service information for the inspection specified in paragraph (g) of this proposed AD. Revision A merely clarifies certain actions and corrects a certain task number, and adds no new work. We have added paragraph (j) to this proposed AD to provide credit for actions done before the effective date of this AD using the original issue of the referenced service information. However, for clarification, we have included the correct task number for greasing all drag strut joints, which is AMM Task 12-20-01-640-802. Bombardier Service Bulletin 84-32-153, dated September 22, 2017, specifies AMM Task 12-20-01-640-803, which is incorrect. We have redesignated subsequent paragraphs accordingly.

Request to Add Terminating Action for Repetitive Inspections

Horizon Air asked that we include an option for terminating action for the repetitive inspections required by paragraph (g) of the proposed AD (in the NPRM). Horizon Air stated that Bombardier Service Bulletin 84-32-154, Revision A, dated November 21, 2018, includes a modification that involves reconfiguration of the lower

lock link of the NLG by adding new bushings with improved retention and greasing provisions.

We partially agree with the commenter's request. We agree to include terminating action for the repetitive inspections, but to adequately address the unsafe condition, we have determined that it is necessary to mandate this action instead of providing it as an option. We have added paragraph (k) of this proposed AD to require the modification, which would terminate the repetitive inspections specified by paragraph (g) of this proposed AD. We have redesignated subsequent paragraphs accordingly.

Request to Include Global Alternative Method of Compliance (AMOC)

Horizon Air asked that we incorporate Global AMOC AARDG-2018/A02 to Canadian AD CF-2018-01 into the FAA proposed AD (in the NPRM). Horizon Air stated that this global AMOC provides the initial compliance time for lower lock links of the NLG that have been repaired based on flight cycles accumulated since repair, instead of total flight cycles accumulated. Horizon Air added that justification for this AMOC was that repair of the lower lock link in accordance with the applicable component maintenance manual yields the same bushing retention properties as a new part.

We agree with the commenter's request. Canadian AD CF-2018-01R1 added compliance times for a repaired or replaced NLG lower lock link. Therefore, we have included paragraph (h) in this proposed AD to allow the compliance times to be measured from the time of repair or replacement of the existing lower lock link for a repair or replacement that was done using a specified method.

Request to Exclude Setup and Closeout Actions

Horizon Air asked that the job setup and closeout actions specified in Bombardier Service Bulletin 84-32-153, Revision A, dated February 27, 2018, be excluded from the requirements of paragraph (g) of the proposed AD (in the NPRM). Horizon Air stated that these actions do not directly correct the unsafe condition. Horizon Air added that incorporating these actions restricts an operator's ability to perform other maintenance in conjunction with incorporation of the referenced service information.

We partially agree with the commenter's request. We agree to remove the closeout actions, but to adequately perform the corrective actions the job setup actions specified in Bombardier Service Bulletin 84-32-153, Revision A, dated February 27, 2018, must be included. Paragraph 3.A., "Job Set-Up," of Bombardier Service Bulletin 84-32-153, Revision A, dated February 27, 2018, includes specific airplane maintenance manual tasks and instructions that properly establish a baseline needed to evaluate excessive play at the lower lock link of the NLG locking mechanism, and correctly address the unsafe condition. In addition, the operator is directed to paragraph 3.A.(5) of the Job Setup section in the Accomplishment Instructions of Bombardier Service Bulletin 84-32-153, Revision A, dated February 27, 2018, for the applicable corrective action. Therefore, we have revised the requirements of paragraph (g) accordingly.

Related Service Information under 1 CFR part 51

Bombardier has issued the following service information:

- Service Bulletin 84-32-153, Revision A, dated February 27, 2018, which describes procedures for an inspection of the bushings and the lower lock link of the

NLG for discrepancies. The service information also describes procedures for repair or replacement of a discrepant lock link.

- Service Bulletin 84-32-154, Revision A, dated November 21, 2018, which describes procedures for replacement of the existing lower lock link with a new configuration lock link.

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 SNPRM

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.

Certain changes described above expand the scope of the NPRM. As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this SNPRM.

Costs of Compliance

We estimate that this proposed AD affects 64 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	2 work-hours X $85 per hour = $170 per inspection cycle	$0	$170 per inspection cycle	$10,880 per inspection cycle
Replacement	6 work-hours X $85 per hour = $510	$5,923	$6,433	$411,712

We have received no definitive data that enables us to provide cost estimates for the on-condition actions specified in this proposed 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 proposed 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 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. Will not affect intrastate aviation in Alaska; and

3. 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 adding the following new airworthiness directive (AD):

Bombardier, Inc.: Docket No. FAA-2018-0453; Product Identifier 2018-NM-028-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

None.

(c) Applicability

This AD applies to Bombardier, Inc., Model DHC-8-400, -401, and -402 airplanes, certificated in any category, serial numbers 4001 through 4585 inclusive, and 4587.

(d) Subject

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

(e) Reason

This AD was prompted by reports of the nose landing gear (NLG) locking in a partially extended position due to loose bushings on a lock link of the NLG locking mechanism. We are issuing this AD to address excessive free play at the lock link of the

NLG locking mechanism, and consequent inability to fully retract or deploy the NLG, which could result in collapse of the NLG and affect the safe landing of the airplane.

(f) Compliance

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

(g) Repetitive Inspections and Corrective Actions

Except as provided by paragraphs (h) and (i) of this AD: Do a general visual inspection for the NLG lower lock link part number and discrepancies of the bushings and of the lower lock link of the NLG locking mechanism, at the applicable time specified in paragraph (g)(1) or (g)(2) of this AD, in accordance with paragraphs 3.A. and 3.B., or 3.A. and 3.D., as applicable, of the Accomplishment Instructions of Bombardier Service Bulletin 84-32-153, Revision A, dated February 27, 2018. If any discrepancy is found, before further flight, repair or replace the NLG lower lock link, as applicable, in accordance with paragraphs 3.B. or 3.D, as applicable, of Bombardier Service Bulletin 84-32-153, Revision A, dated February 27, 2018. Repeat the inspection thereafter at intervals not to exceed 1,600 flight cycles on any NLG lower lock link.

(1) For airplanes on which an NLG lower lock link has accumulated 7,200 or fewer total flight cycles as of the effective date of this AD: Before the accumulation of 8,000 total flight cycles on the NLG lower lock link.

(2) For airplanes on which an NLG lower lock link has accumulated more than 7,200 total flight cycles as of the effective date of this AD: Within 800 flight cycles on the NLG lower lock link after the effective date of this AD.

(h) Inspections After Repair or Replacement of NLG Lower Lock Link

For airplanes with an NLG lower lock link that is repaired or replaced as specified in paragraph (h)(1), (h)(2), (h)(3), or (h)(4) of this AD: The next inspection specified by paragraph (g) of this AD is required for the NLG lower lock link on the airplane at the applicable time specified in figure 1 to paragraph (h) of this AD.

Figure 1 to the introductory text of paragraph (h) – *Compliance times for next inspection on repaired or replaced NLG lower lock link*

Flight Cycles as of the Effective Date of this AD	Compliance Time
Airplanes on which the NLG lower lock link has accumulated 7,200 or fewer flight cycles since the NLG lower link was repaired or replaced	Before the accumulation of 8,000 flight cycles on the NLG lower lock link since the repair or replacement
Airplanes on which the NLG lower lock link has accumulated more than 7,200 flight cycles since the NLG lower link was repaired or replaced	Within 800 flight cycles on the NLG lower lock link after the effective date of this AD

(1) Repaired as specified in Bombardier Repair Drawing 8/4-32-0338.

(2) Repaired as specified in the Goodrich Aerospace Canada Ltd. Component Maintenance Manual, Part Number (P/N) 47300, 32-21-03.

(3) Replaced with a serviceable lock link having P/N 47324-1 (SCR-093-17-B); or

(4) Replaced with a new lock link having P/N 47324-1.

(i) Lock Link Excepted from Inspection Requirements

The inspections specified in this AD are not required for any new NLG lower lock link having P/N 47324-3.

(j) 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 84-32-153, dated September 22, 2017, provided all drag strut joints were greased, as specified in paragraphs 3.B.(1)(h) and 3.D.(1)(c)5 of the Accomplishment Instructions of this service information, using AMM Task 12-20-01-640-802.

(k) Terminating Action for Repetitive Inspections

Within 8,000 flight cycles or 48 months on the NLG lower lock link after the effective date of this AD, whichever occurs first: Replace the existing NLG lower lock link with a new lower lock link having P/N 47324-3, in accordance with paragraphs 3.A. and 3.B. of the Accomplishment Instructions of Bombardier Service Bulletin 84-32-154, Revision A, dated November 21, 2018. Replacement of the lower lock link on the NLG terminates the repetitive inspections required by paragraphs (g) and (h) of this AD for that airplane.

(l) 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 New York ACO Branch, 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:* 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.

(m) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian AD CF-2018-01R1, dated February 4, 2018, 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-2018-0453.

(2) For more information about this AD, contact Darren Gassetto, Aerospace Engineer, Mechanical Systems and Administrative Services Section, New York ACO Branch, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7323; fax 516-794-5531.

Issued in Des Moines, Washington, on May 31, 2019.

Michael Kaszycki,
Acting Director,
System Oversight Division,
Aircraft Certification Service.
[FR Doc. 2019-11879 Filed: 6/6/2019 8:45 am; Publication Date: 6/7/2019]