

ii. The upper-neck compression force at the O.C. location must be less than 405 lbs (1,800 N).

iii. The upper-neck bending torque about the ATD x-axis at the O.C. location must be less than 1,018 in-lbs (115 Nm).

iv. The upper-neck resultant shear force at the O.C. location must be less than 186 lbs (825 N).

g. *Occupant (ES-2re ATD) retention:* The pelvic restraint must remain on the ES-2re ATD's pelvis during the impact and rebound phases of the test. The upper-torso restraint straps (if present) must remain on the ATD's shoulder during the impact.

h. *Occupant (ES-2re ATD) support:*

i. *Pelvis excursion:* The load-bearing portion of the bottom of the ATD pelvis must not translate beyond the edges of its seat's bottom seat-cushion supporting structure.

ii. *Upper-torso support:* The lateral flexion of the ATD torso must not exceed 40 degrees from the normal upright position during the impact.

3. For seats with a shoulder and leg-flail airbag system, the shoulder and leg-flail airbag system must deploy and provide protection under crash conditions where it is necessary to prevent serious injury. The means of protection must take into consideration a range of stature from a 2-year-old child to a 95th percentile male. The airbag systems in the shoulder belts must provide a consistent approach to energy absorption throughout that range of occupants. At some buttock popliteal length and effective seat-bottom depth, the lower legs will not be able to form a 90-degree angle with the upper leg; at this point, the lower-leg flail would not occur. The leg-flail airbag system must provide a consistent approach to prevention of leg flail throughout that range of occupants whose lower legs can form a 90-degree angle relative to the upper legs when seated upright in the seat. Items that need to be considered include, but are not limited to, the range of occupants' popliteal height, the range of occupants' buttock popliteal length, the design of the seat effective height above the floor, and the effective depth of the seat bottom cushion. When the seat system includes an airbag system, that system must be included in each of the certification tests as it would be installed in the airplane. In addition, the following situations must be considered:

a. The seat occupant is holding an infant.

b. The seat occupant is a pregnant woman.

4. The airbag system in the shoulder belt must provide adequate protection for each occupant regardless of the

number of occupants of the seat assembly, considering that unoccupied seats may have an active airbag system in the shoulder belt.

5. The design must prevent the airbag system in the shoulder belt from being either incorrectly buckled or incorrectly installed, such that the airbag system in the shoulder belt would not properly deploy. Alternatively, it must be shown that such deployment is not hazardous to the occupant, and will provide the required injury protection.

6. It must be shown that the shoulder and leg-flail airbag system is not susceptible to inadvertent deployment as a result of wear and tear, or inertial loads resulting from in-flight or ground maneuvers (including gusts and hard landings), and other operating and environmental conditions (vibrations, moisture, etc.) likely to occur in service.

7. Deployment of the shoulder and leg-flail airbag system must not introduce injury mechanisms to the seated occupant, or result in injuries that could impede rapid egress. This assessment should include an occupant whose belt is loosely fastened.

8. It must be shown that inadvertent deployment of the shoulder and leg-flail airbag system, during the most critical part of the flight, will either meet the requirement of § 25.1309(b) or not cause a hazard to the airplane or its occupants. This also includes preventing inadvertent airbag deployment from a static discharge.

9. If the airbag system is connected to the dynamic seat and must inflate through 9g static structure, then the static structure must not fail in such a way that it could impede egress or otherwise present a hazard to the occupants or to the airbag system.

10. The shoulder and leg-flail airbag system must be protected from lightning and high-intensity radiated fields (HIRF). The threats to the airplane specified in existing regulations regarding lightning, § 25.1316, and HIRF, § 25.1317, are incorporated by reference for the purpose of measuring lightning and HIRF protection.

11. The shoulder and leg-flail airbag system must function properly after loss of normal airplane electrical power, and after a transverse separation of the fuselage at the most critical location. A separation at the location of the airbag system in the shoulder belt does not have to be considered.

12. It must be shown that the shoulder and leg-flail airbag system will not release hazardous quantities of gas, sharp injurious metal fragments, or particulate matter into the cabin.

13. The shoulder and leg-flail airbag system installation must be protected

from the effects of fire such that no hazard to occupants will result.

14. A means must be available for a crewmember to verify the integrity of the shoulder and leg-flail airbag system activation system prior to each flight, or it must be demonstrated to reliably operate between inspection intervals. The FAA considers that the loss of the airbag-system deployment function alone (*i.e.*, independent of the conditional event that requires the airbag-system deployment) is a major-failure condition.

15. The inflatable material may not have an average burn rate of greater than 2.5 inches/minute when tested using the horizontal flammability test defined in part 25, appendix F, part I, paragraph (b)(5).

16. The shoulder and leg-flail airbag system, once deployed, must not adversely affect the emergency-lighting system (*i.e.*, block floor proximity lights to the extent that the lights no longer meet their intended function).

Issued in Des Moines, Washington, on April 23, 2019.

Victor Wicklund,

Manager, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service.

[FR Doc. 2019-08973 Filed 5-1-19; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0792; Product Identifier 2018-NM-090-AD; Amendment 39-19581; AD 2019-03-29]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc., Airplanes

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

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Bombardier, Inc., Model BD-100-1A10 airplanes. This AD was prompted by an incident of uncommanded nose wheel steering (NWS) in-service; subsequent investigation revealed that the steering selector valve (SSV) is susceptible to jamming in the open position due to particulate contamination of the hydraulic system. This AD requires modifying the left-hand hydraulic system of the NWS control system and, for certain airplanes, torquing the

fittings on a certain tube assembly. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective June 6, 2019.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of June 6, 2019.

ADDRESSES: For service information identified in this final rule, contact Bombardier, Inc., 200 Côte-Vertu Road West, Dorval, Québec H4S 2A3, Canada; North America toll-free telephone 1-866-538-1247 or direct-dial telephone 1-514-855-2999; email ac.yul@aero.bombardier.com; internet <http://www.bombardier.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-2018-0792.

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-2018-0792; 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:

Darren Gassetto, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7323; fax 516 794 5531; email 9-avs-nyaco-cos@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Bombardier, Inc., Model BD-100-1A10 airplanes. The NPRM published in the **Federal Register** on September 17, 2018 (83 FR 46895). The NPRM was prompted by an incident of uncommanded NWS in-service; subsequent investigation revealed that the SSV is susceptible to jamming in the open position due to particulate

contamination of the hydraulic system. The NPRM proposed to require modifying the left-hand hydraulic system of the NWS control system and, for certain airplanes, torquing the fittings on a certain tube assembly.

We are issuing this AD to address jamming of the SSV after independent failure of a second component of the NWS control system, which could result in uncommanded NWS and a possible runway excursion.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF-2018-11, dated April 5, 2018 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for certain Bombardier, Inc., Model BD-100-1A10 airplanes. The MCAI states:

An incident of uncommanded nose wheel steering occurred in-service. Subsequent investigation revealed that the steering selector valve (SSV) was vulnerable to jamming in the open position due to particulate contamination of the hydraulic system. If not corrected, a jam of the SSV, following the independent failure of a second component of the nose wheel steering system, could result in uncommanded nose wheel steering and a risk of runway excursion.

This [Canadian] AD requires the incorporation of a hydraulic fluid filter in the line supplying pressure from the direct current motor pump to the nose wheel steering system [and, for certain airplanes, torquing the fittings on a certain tube assembly].

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-2018-0792.

Comments

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

Request To Correct a Date for Receipt of Comments

Bombardier requested that we correct a typographical error in the **DATES** section of the proposed AD. The proposed AD stated “We must receive comments on this proposed AD by November 1, 20181.” Bombardier noted that the sentence should state “We must receive comments on this proposed AD by November 1, 2018.”

We acknowledge this typographical error. However, the section containing this statement does not get carried over to this final rule. Therefore, we have not changed this AD regarding this issue.

Request To Update Contact Information

Bombardier requested that we update their contact information in the **ADDRESSES** and Related Information sections of the proposed AD. Bombardier noted that their email and street addresses changed recently and updating them in our final rule would allow operators to contact Bombardier with questions.

We agree with the commenter’s request for the reasons stated. We have updated the contact information for Bombardier in the **ADDRESSES** section and paragraph (k)(3) of this AD.

Request To Provide an Exception to Certain Actions

NetJets requested that we provide an exception to paragraph (g) of the proposed AD for airplanes having serial numbers 20720 and 20722. NetJets noted that the actions specified in Bombardier Service Bulletin 350-32-007 were incorporated in accordance with Bombardier Service Bulletin 350-32-007 on those airplanes during production. NetJets added that the actions required by paragraph (h) of the proposed AD would still apply to those airplanes.

We agree to clarify. Paragraph (g) of this AD only applies to airplanes not identified in paragraph (h) of this AD. Any airplane that has incorporated Bombardier Service Bulletin 350-32-007 dated January 4, 2018; Revision 01, dated January 23, 2018; or Revision 02, dated March 14, 2018, as of the effective date of this AD must complete the actions required by paragraph (h) in this AD, but does not have to complete the actions specified in paragraph (g) of this AD. Therefore, this AD has not been changed with regard to this request.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule 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 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 final rule.

Related Service Information Under 1 CFR Part 51

Bombardier has issued Service Bulletin 100–32–31, Revision 03; and Service Bulletin 350–32–007, Revision 03; both dated March 27, 2018. This service information describes procedures for modifying the left-hand hydraulic system of the NWS control

system by installing a hydraulic filter into the hydraulic line between the direct current motor pump and the SSV and, for certain airplanes, torquing the fittings on a certain tube assembly. These documents are distinct since they apply to different airplane configurations.

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 534 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

ESTIMATED COSTS

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
25 work-hours × \$85 per hour = \$2,125	\$13,196	\$15,321	\$8,181,414

According to the manufacturer, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all known costs in our cost estimate.

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

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 adding the following new airworthiness directive (AD):

2019–03–29 Bombardier, Inc.: Amendment 39–19581; Docket No. FAA–2018–0792; Product Identifier 2018–NM–090–AD.

(a) Effective Date

This AD is effective June 6, 2019.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Bombardier, Inc., Model BD–100–1A10 airplanes, certificated in any category, serial numbers 20002 through 20744 inclusive.

(d) Subject

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

(e) Reason

This AD was prompted by an incident of uncommanded nose wheel steering (NWS) in-service; subsequent investigation revealed that the steering selector valve (SSV) is susceptible to jamming in the open position due to particulate contamination of the hydraulic system. We are issuing this AD to address jamming of the SSV after independent failure of a second component of the NWS control system, which could result in uncommanded NWS and a possible runway excursion.

(f) Compliance

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

(g) Modify Hydraulic System

Except for airplanes identified in paragraph (h) of this AD: Within 2,000 flight cycles or 60 months after the effective date of this AD, whichever occurs first, modify the left-hand hydraulic system of the NWS control system by installing a hydraulic filter into the hydraulic line between the direct current motor pump and the SSV, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 100–32–31, Revision 03; or Bombardier Service Bulletin 350–32–007, Revision 03; both dated March 27, 2018; as applicable.

(h) Additional Action for Certain Airplanes

For airplanes that have incorporated Bombardier Service Bulletin 100–32–31,

dated January 4, 2018; Bombardier Service Bulletin 100–32–31, Revision 01, dated January 23, 2018; Bombardier Service Bulletin 100–32–31, Revision 02, dated March 14, 2018; Bombardier Service Bulletin 350–32–007, dated January 4, 2018; Bombardier Service Bulletin 350–32–007, Revision 01, dated January 23, 2018; or Bombardier Service Bulletin 350–32–007, Revision 02, dated March 14, 2018; as applicable, as of the effective date of this AD: Within 50 flight hours after the effective date of this AD, torque the fittings on any tube assembly having part number K1000070395–401, in accordance with the “Retroactive Action” instructions of Bombardier Service Bulletin 100–32–31, Revision 03, or Bombardier Service Bulletin 350–32–007, Revision 03, both dated March 27, 2018, as applicable.

(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*: 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 AD CF–2018–11, dated April 5, 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–2018–0792.

(2) For more information about this AD, contact Darren Gassetto, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7323; fax 516–794–5531; email 9-avs-nyacos@faa.gov.

(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 100–32–31, Revision 03, dated March 27, 2018.

(ii) Bombardier Service Bulletin 350–32–007, Revision 03, dated March 27, 2018.

(3) For service information identified in this AD, contact Bombardier, Inc., 200 Côte-Vertu Road West, Dorval, Québec H4S 2A3, Canada; North America toll-free telephone 1–866–538–1247 or direct-dial telephone 1–514–855–2999; email ac.yul@aero.bombardier.com; internet <http://www.bombardier.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 February 22, 2019.

Michael Kaszycki,

Acting Director, System Oversight Division, Aircraft Certification Service.

[FR Doc. 2019–08915 Filed 5–1–19; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2018–0763; Product Identifier 2018–NM–052–AD; Amendment 39–19626; AD 2019–08–05]

RIN 2120–AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 787–8 and 787–9 airplanes. This AD was prompted by a determination that certain areas in the tire/wheel threat zones could be susceptible to damage, which could result in loss of braking on one main landing gear (MLG) truck, loss of nose wheel steering, and loss of directional control on the ground when below rudder effectiveness speed. This AD requires installing hydraulic tubing, a pressure-operated check valve, and new flight control software. We are issuing

this AD to address the unsafe condition on these products.

DATES: This AD is effective June 6, 2019.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of June 6, 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–2018–0763.

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–2018–0763; 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:

Kelly McGuckin, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th Street, Des Moines, WA 98198; phone and fax: 206–231–3546; email: Kelly.McGuckin@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model 787–8 and 787–9 airplanes. The NPRM published in the **Federal Register** on August 31, 2018 (83 FR 44508). The NPRM was prompted by a determination that certain areas in the tire/wheel threat zones could be susceptible to damage, which could result in loss of braking on one MLG truck, loss of nose wheel steering, and loss of directional control on the ground when below rudder effectiveness speed.