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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2013-0835; Directorate Identifier 2013-NM-095-AD; Amendment 39-17790; AD 2014-05-17]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Bombardier, Inc. Model DHC-8-102, -103, -106, -201, -202, -301, -311, and -315 airplanes. This AD was prompted by results from fuel system reviews conducted by the manufacturer. This AD requires accomplishing modifications to the fuel system. We are issuing this AD to prevent the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

**DATES:** This AD becomes effective May 2, 2014.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of May 2, 2014.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov/#!docketDetail;D=FAA-2013-0835>; or in person at the 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.

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 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.

**FOR FURTHER INFORMATION CONTACT:** Morton Lee, Propulsion Engineer, Propulsion & Services Branch, ANE-173, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone 516-228-7355; fax 516-794-5531.

## **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 DHC-8-102, -103, -106, -201, -202, -301, -311, and -315 airplanes. The NPRM published in the Federal Register on October 2, 2013 (78 FR 60800). The NPRM was prompted by results from fuel system reviews conducted by the manufacturer. The NPRM proposed to require accomplishing modifications to the fuel system. We are issuing this AD to prevent the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian Airworthiness Directive CF-2013-07, dated March 1, 2013 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for the specified products. The MCAI states:

Bombardier Aerospace has completed a system safety review of the aeroplane fuel system against fuel tank safety standards \* \* \*. The identified non-compliances were then assessed \* \* \* to determine if mandatory corrective action is required.

The assessment showed that a number of modifications to the fuel system are required to mitigate unsafe conditions that could result in potential ignition sources within the fuel system.

\* \* \* \* \*

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2013-0835-0002>.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (78 FR 60800, October 2, 2013) or on the determination of the cost to the public.

### **Conclusion**

We reviewed the relevant data and determined that air safety and the public interest require adopting this AD as proposed except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (78 FR 60800, October 2, 2013) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (78 FR 60800, October 2, 2013).

### **Costs of Compliance**

We estimate that this AD affects 94 airplanes of U.S. registry.

We also estimate that it will take about 519 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 \$58,924 per product. Based on these figures, we estimate the cost of this AD on U.S. operators to be \$9,685,666, or \$103,039 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 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.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov/#!docketDetail;D=FAA-2013-0835>; 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 street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section.

## **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 AD:



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**2014-05-17 Bombardier, Inc.:** Amendment 39-17790. Docket No. FAA-2013-0835; Directorate Identifier 2013-NM-095-AD.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective May 2, 2014.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Bombardier, Inc. Model DHC-8-102, -103, -106, -201, -202, -301, -311, and -315 airplanes, certificated in any category, serial numbers (S/Ns) 002 through 672 inclusive.

**(d) Subject**

Air Transport Association (ATA) of America Code 28, Fuel.

**(e) Reason**

This AD was prompted by results from fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

**(f) Compliance**

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

**(g) Modifications—Part I**

Within 6,000 flight hours or 36 months, whichever occurs first, after the effective date of this AD, do the modifications specified in paragraphs (g)(1) through (g)(14) of this AD, as applicable.

(1) For airplanes having S/Ns 003 through 624 inclusive: Accomplish Bombardier ModSum 8Q101512, "Fuel System—Fuel Tank Mechanical Design, SFAR 88 Compliance (Retrofit)," Revision G, dated June 10, 2009, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-57-44, Revision D, dated October 8, 2008.

(2) For airplanes having S/Ns 003 through 629 inclusive on which a long range fuel system specified in de Havilland Change Request (CR) CR828CH00044, CR828SO08061, CR828CH00027, CR828SO00006, or Special Order Option (SOO) 8061 has been installed: Accomplish Bombardier ModSum 8Q902091, "Fuel System—Fuel Tank Mech. Design, SFAR 88 Compl.—Extended Range Tank Option (Retrofit)," Revision C, dated December 22, 2006, in accordance with the

Accomplishment Instructions of Bombardier Service Bulletin 8-28-39, Revision B, dated August 19, 2009.

(3) For airplanes having S/Ns 003 through 624 inclusive on which de Havilland SOO 8155, SOO 8098, SOO 8099, SOO 6082, or CR849SO08155; Supplemental Type Certificate SA85-1; or Limited Supplemental Type Certificate W-LSA98-005/D; has been incorporated: Accomplish Bombardier ModSum 8Q902144, "Fuel System–Fuel Tank Mechanical Design, SFAR 88 Compliance–APU Option (Retrofit)," Revision E, dated June 17, 2009, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-44, Revision B, dated July 25, 2009.

(4) For airplanes having S/Ns 003 through 624 inclusive: Accomplish Bombardier ModSum 8Q101865, "Fuel System–Fuel Tank Mechanical Design, SFAR 88 Compliance (Retrofit)," Revision B, dated May 26, 2008, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-47, dated May 2, 2008.

(5) For Model DHC-8-102, -103, and -106 airplanes having S/Ns 002 through 014 inclusive: Accomplish Bombardier ModSum 8Q101916, "Fuel System–Fuel Tank Secondary Pressure Relief Valve Rework SFAR 88 Compliance (Retrofit)," Revision A, dated October 19, 2010, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-58, dated July 25, 2011.

(6) For airplanes having S/Ns 002 through 629 inclusive on which a long range fuel system specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, or CR828SO00006, or SOO 8061 has been installed, including airplanes on which metric refuel/defuel indicators specified in de Havilland CR828CH00029 have been installed: Accomplish Bombardier ModSum 8Q902122, "Production/Retrofit–Fuel System–Long Range Wiring Installation–SFAR 88 Compliance," Revision F, dated December 8, 2011, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-41, Revision B, dated August 8, 2012.

(7) For airplanes having S/Ns 002 through 619 inclusive with imperial refuel/defuel indicators, excluding airplanes on which a long range fuel system specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, CR828SO00006, or SOO 8061, has been installed: Accomplish Bombardier ModSum 8Q101511, "Production/Retrofit–Fuel System–Fuel Tank Wiring Installation–SFAR88 Compliance," Revision C, dated January 30, 2009, in accordance with the Accomplishment Instruction of Bombardier Service Bulletin 8-28-35, Revision C, dated January 14, 2013.

(8) For airplanes having S/Ns 002 through 619 inclusive on which metric refuel/defuel indicators specified in de Havilland CR828CH00020 have been installed, excluding airplanes on which a long range fuel system specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, CR828SO00006, or SOO 8061, has been installed: Accomplish Bombardier ModSum 8Q901117, "Production/Retrofit–Fuel System–Metric Indication–Fuel Tank Wiring Installation–SFAR 88," Revision C, dated March 23, 2009, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-43, Revision A, dated June 25, 2009.

(9) For airplanes having S/Ns 003 through 619 inclusive, excluding airplanes on which Bombardier ModSum 8Q101652 specified in Bombardier Service Bulletin 8-28-36, Revision A, dated November 17, 2006; or Revision B, dated February 12, 2008; has been installed: Accomplish Bombardier ModSum 8Q101652, "Electrical–Fuel Quantity Indication Wire Routing Segregation and Identification," Revision F, dated March 10, 2011, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-36, Revision C, dated October 7, 2009. In addition, for Model DHC-8-102, -103, -106, -201, and -202 airplanes on which an active noise and vibration suppression (ANVS) system has been installed, and on which Bombardier ModSum 8Q101652 specified in Bombardier Service Bulletin 8-28-36, Revision A, dated November 17, 2006; or Revision B, dated February 12, 2008; has been incorporated: Do the actions specified in paragraph (h)(1) of this AD.

(10) For airplanes having S/Ns 003 through 672 inclusive on which Bombardier ModSum 8Q101513 or 8Q101652 specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, CR828CO00006, or SOO 8061 has been installed, excluding airplanes having a long range fuel system installed: Accomplish Bombardier ModSum 8Q101907, "Fuel System–Fuel Qty Ind., Wire Routing Segregation, Installation of Top Hat Support–SFAR88 (Standard Aircraft),"

Revision B, dated September 10, 2010, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-48, Revision A, dated July 23, 2012.

(11) For airplanes having S/Ns 003 through 619 inclusive, excluding airplanes on which a long range fuel system specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, CR828SO00006, or SOO 8061, has been installed; and excluding airplanes on which Bombardier ModSum 8Q101652 specified in Bombardier Service Bulletin 8-28-36, Revision A, dated November 17, 2006, Revision B, dated February 12, 2008, or Revision C, dated October 7, 2009, has been installed: Accomplish Bombardier ModSum 8Q101908, "Fuel System–Fuel Qty Ind., Wire Routing Segregation, Installation of Dual Spacers–SFAR88 (Standard A/C)," Revision B, dated September 10, 2010, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-55, dated July 23, 2012. In addition, for airplanes on which Bombardier ModSum 8Q101652 specified in Bombardier Service Bulletin 8-28-36, dated August 9, 2006; Revision A, dated November 17, 2006; Revision B, dated February 12, 2008; or Revision C, dated October 7, 2009; has been installed: Do the actions in paragraph (i)(1) of this AD.

(12) For airplanes having S/Ns 002 through 629 inclusive on which a long range fuel system specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, CR828SO00006, or SOO 8061, has been installed; excluding airplanes on which Bombardier ModSum 8Q902064 specified in Bombardier Service Bulletin 8-28-42 has been incorporated: Accomplish Bombardier ModSum 8Q902064, "Electrical–Long Range Fuel Quantity Indication Wire Routing Segregation and Identification–SFAR 88," Revision G, dated March 10, 2011, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-42, Revision A, dated October 1, 2008.

(13) For airplanes having S/Ns 003 through 672 inclusive on which a long range fuel system specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, CR828SO00006, or SOO 8061, has been installed; and on which Bombardier ModSum 8Q902064, and either Bombardier ModSum 8Q101513 or ModSum 8Q101652, has been installed: Accomplish Bombardier ModSum 8Q902382, "Fuel System–Fuel Qty Ind., Wire Routing Segregation, Installation of Top Hat Support–SFAR88 (Long Range Aircraft)," Revision B, dated September 10, 2010, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-49, Revision A, dated July 23, 2012.

(14) For airplanes having S/Ns 003 through 629 inclusive on which a long range fuel system specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, CR828SO00006, or SOO 8061, has been installed; excluding airplanes on which Bombardier ModSum 8Q902064 specified in Bombardier Service Bulletin 8-28-42, dated December 21, 2006, or Revision A, dated October 1, 2008, has been installed: Accomplish Bombardier ModSum 8Q902383, "Fuel System–Fuel Qty Ind., Wire Routing Segregation, Installation of Dual Spacers–SFAR88 (Long Range A/C)," Revision B, dated September 10, 2010, including installing dual spacers inside the center fuselage at certain locations, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-56, dated July 23, 2012.

## **(h) Inspections, Modifications, and Corrective Actions–Part II**

For airplanes identified in paragraphs (h)(1), (h)(2), and (h)(3) of this AD: Within 12,000 flight hours or 72 months, whichever occurs first, after the effective date of this AD, do the actions specified in paragraphs (h)(1), (h)(2), and (h)(3) of this AD, as applicable.

(1) For Model DHC-8-102, -103, -106, -201, and -202 airplanes having S/Ns 003 through 619 inclusive; on which an ANVS system has been installed; and on which Bombardier ModSum 8Q101652 specified in Bombardier Service Bulletin 8-28-36, dated August 9, 2006, Revision A, dated November 17, 2006, or Revision B, dated February 12, 2008, has been installed: Accomplish Bombardier ModSum 8Q101652, "Electrical–Fuel Quantity Indication Wire Routing Segregation and Identification," Revision F, dated March 10, 2011, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-36, Revision C, dated October 7, 2009.

(2) For Model DHC-8-102, -103, -106, -201, and -202 airplanes having S/Ns 002 through 629 inclusive on which an ANVS system has been installed, and on which Bombardier ModSum 8Q902064 specified in Bombardier Service Bulletin 8-28-42, Revision A, dated October 1, 2008, has been installed: Accomplish Bombardier ModSum 8Q902064, "Electrical–Long Range Fuel Quantity Indication Wire Routing Segregation and Identification–SFAR 88," Revision G, dated March 10, 2011, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-42, Revision A, dated October 1, 2008.

(3) For Model DHC-8-102, -103, -106, -201, and -202 airplanes having S/Ns 620 through 666 inclusive on which an ANVS system has been installed: Do a one-time visual inspection to determine whether the fuel quantity indicating system (FQIS) wiring harness is routed correctly and relocate the wiring harness if necessary, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-52, dated November 3, 2009.

### **(i) Wire Routing Segregation and Installation of Dual Spacers–Part III**

Within 18,000 flight hours or 108 months, whichever occurs first, after the effective date of this AD, do the modification specified in paragraph (i)(1) or (i)(2) of this AD, as applicable.

(1) For airplanes having S/Ns 003 through 672 inclusive on which Bombardier ModSum 8Q101513 has been incorporated; or on which Bombardier ModSum 8Q101652 specified in Bombardier Service Bulletin 8-28-36, dated August 9, 2006, Revision A, dated November 17, 2006, Revision B, dated February 12, 2008; or Revision C, dated October 7, 2009, has been incorporated; excluding airplanes on which a long-range fuel system specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, CR828SO00006, or SOO 8061, has been installed: Accomplish Bombardier ModSum 8Q101908, "Fuel System–Fuel Qty Ind., Wire Routing Segregation, Installation of Dual Spacers–SFAR88 (Standard A/C)," Revision B, dated September 10, 2010, including installing dual spacers inside certain center fuselage locations, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-55, dated July 23, 2012.

(2) For airplanes having S/Ns 003 through 672 inclusive on which a long-range fuel system specified in de Havilland CR828CH00044, CR828SO08061, CR828CH00027, CR828SO00006, or SOO 8061, has been installed; and on which Bombardier ModSum 8Q902064 has been incorporated, or on which ModSum 8Q902064 as specified in Bombardier Service Bulletin 8-28-42, dated December 21, 2006, or Revision A, dated October 1, 2008, has been incorporated: Accomplish Bombardier ModSum 8Q902383, "Fuel System–Fuel Qty Ind., Wire routing Segregation, Installation of Dual Spacers–SFAR88 (Long Range A/C)," Revision B, dated September 10, 2010, including installing dual spacers inside certain center fuselage locations, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 8-28-56, dated July 23, 2012.

### **(j) Credit for Previous Actions**

(1) This paragraph provides credit for actions required by paragraph (g)(2) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 8-28-39, Revision A, March 15, 2007.

(2) This paragraph provides credit for actions required by paragraph (g)(3) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 8-28-44, dated August 9, 2006; or Revision A, dated November 15, 2006.

(3) This paragraph provides credit for actions required by paragraph (g)(6) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 8-28-41, Revision A, dated April 11, 2007.

(4) This paragraph provides credit for actions required by paragraph (g)(8) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 8-28-43, dated August 10, 2006.

(5) This paragraph provides credit for actions required by paragraph (g)(10) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 8-28-48, dated October 1, 2010.

(6) This paragraph provides credit for actions required by paragraph (g)(13) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 8-28-49, dated October 1, 2010.

(7) This paragraph provides credit for actions required by paragraph (h)(3) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 8-28-53, dated November 3, 2008.

### **(k) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, 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 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. The AMOC approval letter must specifically reference this AD.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

### **(l) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian Airworthiness Directive CF-2013-07, dated March 1, 2013, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2013-0835-0002>.

(2) Service information identified in this AD that is not incorporated by reference may be viewed at the addresses specified in paragraphs (m)(3) and (m)(4) of this AD.

### **(m) 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 8-28-35, Revision C, dated January 14, 2013.
- (ii) Bombardier Service Bulletin 8-28-36, Revision C, dated October 7, 2009.
- (iii) Bombardier Service Bulletin 8-28-39, Revision B, dated August 19, 2009.
- (iv) Bombardier Service Bulletin 8-28-41, Revision B, dated August 8, 2012.
- (v) Bombardier Service Bulletin 8-28-42, Revision A, dated October 1, 2008.
- (vi) Bombardier Service Bulletin 8-28-43, Revision A, dated June 25, 2009.
- (vii) Bombardier Service Bulletin 8-28-44, Revision B, dated July 25, 2009.
- (viii) Bombardier Service Bulletin 8-28-47, dated May 2, 2008.
- (ix) Bombardier Service Bulletin 8-28-48, Revision A, dated July 23, 2012.
- (x) Bombardier Service Bulletin 8-28-49, Revision A, dated July 23, 2012.

(xi) Bombardier Service Bulletin 8-28-52, dated November 3, 2009.

(xii) Bombardier Service Bulletin 8-28-55, dated July 23, 2012.

(xiii) Bombardier Service Bulletin 8-28-56, dated July 23, 2012.

(xiv) Bombardier Service Bulletin 8-28-58, dated July 25, 2011.

(xv) Bombardier Service Bulletin 8-57-44, Revision D, dated October 8, 2008.

(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 Airplane Directorate, 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 February 19, 2014.

Jeffrey E. Duven,  
Manager, Transport Airplane Directorate,  
Aircraft Certification Service.