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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2012-1003; Directorate Identifier 2012-NM-064-AD; Amendment 39-17563; AD 2013-16-25]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Bombardier, Inc. Model DHC-8-400 series airplanes. This AD was prompted by reports of advance pneumatic detectors (APDs) for engine fire/overheat detector assemblies failing to reset after activation due to permanent deformation of the detector switch diaphragm after being exposed to high temperatures. This AD requires replacing all three APDs with new detector assemblies. We are issuing this AD to prevent a continued engine fire indication in the cockpit after the actual fire has been extinguished, which is misleading and might influence the pilot to conduct a potentially hazardous "off-airport" landing.

**DATES:** This AD becomes effective October 4, 2013.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of October 4, 2013.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the 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>.

**FOR FURTHER INFORMATION CONTACT:** Mazdak Hobbi, Aerospace Engineer, Propulsion and Services Branch, ANE-173, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7330; fax 516-794-5531.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. The SNPRM published in the Federal Register on April 9, 2013 (78 FR 21077). The notice of proposed rulemaking NPRM (77 FR 60060, October 2, 2012), which preceded the SNPRM, proposed to require replacing all three APDs with new detector assemblies. The SNPRM proposed to add airplanes to the applicability.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian Airworthiness Directive CF-2012-07R1, effective December 21, 2012 (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:

There have been engine fires on DHC-8 Series 400 aeroplanes, where the "ENGINE FIRE, CHECK FIRE DETECT" warning and "FUEL OFF" handle lights failed to reset and remained illuminated after the fire was extinguished. An investigation has revealed that the existing engine fire/overheat detector assemblies "Advance Pneumatic Detectors (APD)" may fail to reset after activation due to permanent deformation of the detector switch diaphragm after being exposed to high temperatures.

This abnormal condition of a continued engine fire indication in the cockpit, after the actual fire has been extinguished, is misleading and may influence the pilot's decision to conduct a potentially hazardous "off-airport" landing, which is considered an unsafe condition that warrants mitigating action.

To mitigate this potentially hazardous condition, Bombardier has issued multiple service bulletins (SBs) [Bombardier Service Bulletins 84-26-08, Revision A, dated May 12, 2011; 84-26-09, Revision A, dated May 12, 2011; and 84-26-12, Revision B, dated October 12, 2012] to replace all three affected APDs with new detector assemblies that are not susceptible to the subject diaphragm deformation when exposed to excessive heat. \* \* \*

This revised [Canadian] AD is issued to include the additional 26 aeroplane S/Ns in the applicability section of the AD. The additional S/Ns, 4374 through 4399, only affect the compliance with Part III of this [Canadian] AD.

You may obtain further information by examining the MCAI in the AD docket.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the SNPRM (78 FR 21077, April 9, 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 SNPRM (78 FR 21077, April 9, 2013) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the SNPRM (78 FR 21077, April 9, 2013).

## **Costs of Compliance**

Based on the service information, we estimate that this AD affects 399 products of U.S. registry. We also estimate that it will take about 63 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 \$5,700 per product. Where the service information lists required parts costs that are covered under warranty, we have assumed that there will be no charge for these parts. As we do not control warranty coverage for affected parties, some parties may incur costs higher than estimated here. Based on these figures, we estimate the cost of this AD on U.S. operators to be \$4,410,945, or \$11,055 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 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the MCAI, 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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**2013-16-25 Bombardier, Inc.:** Amendment 39-17563; Docket No. FAA-2012-1003; Directorate Identifier 2012-NM-064-AD.

**(a) Effective Date**

This AD becomes effective October 4, 2013.

**(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 (S/Ns) 4001 through 4399 inclusive.

**(d) Subject**

Air Transport Association (ATA) of America Code 26, Fire protection.

**(e) Reason**

This AD was prompted by reports of advance pneumatic detectors (APDs) for engine fire/overheat detector assemblies failing to reset after activation due to permanent deformation of the detector switch diaphragm after being exposed to high temperatures. We are issuing this AD to prevent a continued engine fire indication in the cockpit after the actual fire has been extinguished, which is misleading and might influence the pilot to conduct a potentially hazardous "off-airport" landing.

**(f) Compliance**

You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

**(g) Installation**

Within 6,000 flight hours or 30 months after the effective date of this AD, whichever occurs first, replace the APDs as specified in paragraphs (g)(1), (g)(2), and (g)(3) of this AD, as applicable.

(1) For airplanes having S/Ns 4001 through 4373 inclusive: For the nacelle of the engine primary zone, remove any APD having part number (P/N) 10-1098 and install a new APD having P/N 10-1098-01, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-26-08, Revision B, dated September 24, 2012.

(2) For airplanes having S/Ns 4001 through 4373 inclusive: For the nacelle of the landing gear primary zone, remove any APD having P/N 10-1097 or 10-1097-01 and install a new APD having

P/N 10-1097-02, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-26-09, Revision A, dated May 12, 2011.

(3) For all airplanes: For the propeller engine controller, remove any APD having P/N 10-1096, 10-1096-01, or 10-1096-02 (serial number is all numeric characters), and install a new APD having P/N 10-1096-02 (serial number is three alpha and four numeric characters), in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-26-12, Revision B, dated October 12, 2012.

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

(1) This paragraph provides credit for actions required by paragraph (g)(1) of this AD, if those actions were performed before the effective date of this AD using the service information specified in paragraph (h)(1)(i) or (h)(1)(ii) of this AD, which are not incorporated by reference in this AD.

(i) Bombardier Service Bulletin 84-26-08, dated March 11, 2011.

(ii) Bombardier Service Bulletin 84-26-08, Revision A, dated May 12, 2011.

(2) 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 84-26-09, dated March 11, 2011, which is not incorporated by reference in this AD.

(3) 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 the service information specified in paragraph (h)(3)(i) or (h)(3)(ii) of this AD, which are not incorporated by reference in this AD.

(i) Bombardier Service Bulletin 84-26-12, dated October 12, 2011.

(ii) Bombardier Service Bulletin 84-26-12, Revision A, dated December 13, 2011.

#### **(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 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.

#### **(j) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information Canadian Airworthiness Directive CF-2012-07R1, effective December 21, 2012, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov>.

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

**(k) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Bombardier Service Bulletin 84-26-08, Revision B, dated September 24, 2012.

(ii) Bombardier Service Bulletin 84-26-09, Revision A, dated May 12, 2011.

(iii) Bombardier Service Bulletin 84-26-12, Revision B, dated October 12, 2012.

(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 review copies of the 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 August 1, 2013.

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