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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2012-0267; Directorate Identifier 2011-NM-174-AD; Amendment 39-17192; AD 2012-18-15]**

**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-8-400 series airplanes. This AD was prompted by reports that the automatic de-icing mode became unavailable due to a failure of the timer and monitor unit (TMU). This AD requires replacing the TMU. We are issuing this AD to prevent loss of the automatic de-icing mode and consequent increased workload for the flightcrew, which, depending on additional failures, could lead to loss of control of the airplane.

**DATES:** This AD becomes effective October 22, 2012.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of October 22, 2012.

**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 FURTHER INFORMATION CONTACT:** Cesar Gomez, Aerospace Engineer, Airframe and Mechanical Systems Branch, ANE-171, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7318; fax (516) 794-5531.

#### **SUPPLEMENTARY INFORMATION:**

##### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on

March 20, 2012 (77 FR 16191). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

There have been multiple reports of in-service incidents where the automatic deicing mode became unavailable due to a failure of the Timer and Monitor Unit (TMU).

Investigation has revealed that the failures were attributed to overstressed capacitors installed in the circuit board of the TMU "Module 300" power supply. The failure of the capacitors leads to failure of the TMU "Module 300" power supply and subsequent loss of the automatic deicing mode.

This [Transport Canada Civil Aviation (TCCA)] directive mandates the replacement of the TMU, part number (P/N) 4100S018-06, with a new improved unit, P/N 4100S018-07.

The unsafe condition is loss of the automatic de-icing mode and consequent increased workload for the flightcrew, which, depending on additional failures, could lead to loss of control of the airplane. 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 have considered the comments received.

## **Support for the NPRM (77 FR 16191, March 20, 2012)**

The Air Line Pilots Association, International (ALPA) supports the intent of the NPRM (77 FR 16191, March 20, 2012).

## **Request To Withdraw the NPRM (77 FR 16191, March 20, 2012)**

Katherine Carpenter, a private citizen, stated that it seems unnecessary to require a law for replacing a faulty part, and that common sense indicates that companies should replace the parts to limit their liability in case of an accident.

We infer that the commenter was requesting that we withdraw the NPRM (77 FR 16191, March 20, 2012). According to section 39.1 ("Airworthiness Directives") of the Federal Aviation Regulations (14 CFR 39.1), we issue an AD based on our finding that an unsafe condition exists and is likely to exist or develop in products of the same type design. We have the responsibility, placed on us by the Federal Aviation Act (49 U.S.C. App. 1301 et seq.), to make an unsafe condition—whether resulting from maintenance, design defect, or otherwise—the subject of an AD, and to issue an AD when that unsafe condition is likely to exist or develop on other products of the same type design.

Further, it is within our authority to issue ADs to require corrective actions to address unsafe conditions that are not being addressed (or not addressed adequately) by operators' normal maintenance procedures. An AD is the appropriate means for mandating this action. As a result, we are issuing this AD to eliminate the identified unsafe condition by requiring replacement of the TMU.

## **Request To Reduce Compliance Time**

ALPA requested that the compliance time be reduced from 3,000 flight hours or 18 months, to 1,000 flight hours or 6 months, in order to reduce the operating exposure of the affected airplanes to two winter seasons.

We disagree to reduce the compliance time for two reasons. First, the DEICE PRESS or DEICE TIMER caution lights annunciate a failure to the flightcrew; the airplane flight manual (AFM) provides procedures to address this failure and instructs the flightcrew to use the manual mode of the pneumatic ice protection system and to exit icing conditions as soon as possible. While an increased pilot workload is classified as "major" in a fictional hazard assessment, the actual number of these events decreases that probability to a "medium" safety risk. Second, the manufacturer indicated that the mean time between TMU replacements has been 3,000 flight hours, consistent with the compliance time for this AD action. For these reasons, we determined that the compliance time is justified, and we have not changed the final rule in this regard.

## **Conclusion**

We reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the 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 (77 FR 16191, March 20, 2012) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (77 FR 16191, March 20, 2012).

## **Costs of Compliance**

We estimate that this AD will affect about 81 products of U.S. registry. We also estimate that it will take about 3 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 \$0 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 to the U.S. operators to be \$20,655, or \$255 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.

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 the NPRM (77 FR 16191, March 20, 2012), the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

### **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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**2012-18-15 Bombardier, Inc.:** Amendment 39-17192. Docket No. FAA-2012-0267; Directorate Identifier 2011-NM-174-AD.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective October 22, 2012.

**(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 and subsequent, equipped with Aerazur timer and monitor unit(TMU), part number (P/N) 4100S018-06.

**(d) Subject**

Air Transport Association (ATA) of America Code 30: Ice and rain protection.

**(e) Reason**

This AD was prompted by reports that the automatic de-icing mode became unavailable due to a failure of the TMU. We are issuing this AD to prevent loss of the automatic de-icing mode and consequent increased workload for the flightcrew, which, depending on additional failures, could lead to loss of control of the airplane.

**(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) Replacement of the TMU**

Within 3,000 flight hours or 18 months after the effective date of this AD, whichever occurs first: Replace TMU P/N 4100S018-06 with new TMU P/N 4100S018-07, by incorporating Bombardier ModSum 4-126525, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-30-14, dated May 20, 2011.

**(h) Parts Installation Prohibition**

As of the effective date of this AD, no person may install a TMU, P/N 4100S018-06, on any airplane.

### **(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, New York 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**

Refer to MCAI Canadian Airworthiness Directive CF-2011-34, dated August 16, 2011; and Bombardier Service Bulletin 84-30-14, dated May 20, 2011; for related information.

### **(k) Material Incorporated by Reference**

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

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

(i) Bombardier Service Bulletin 84-30-14, dated May 20, 2011.

(ii) Reserved.

(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 also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at an NARA facility, call 202-741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on September 4, 2012.

Ali Bahrami,  
Manager, Transport Airplane Directorate,  
Aircraft Certification Service.