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[Page 68690-68693]  
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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2010-0548; Directorate Identifier 2010-NM-041-AD; Amendment 39-16497; AD 2010-23-08]**

**RIN 2120-AA64**

**Airworthiness Directives; Bombardier, Inc. Model BD-700-1A10 and BD-700-1A11 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 the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Following five reported cases of balance washer screw failure on similar RATs [ram air turbines]/air driven generators installed on other aircraft types, an investigation \* \* \* \* \* determined that a specific batch of the screws had a metallographic non-conformity that increased their susceptibility to brittle fracture. \* \* \*

Failure of a balance washer screw can result in loss of the related balance washer, with consequent turbine imbalance. Such imbalance could potentially result in RAT structural failure (including blade failure), loss of RAT electrical power and structural damage to the aircraft and, if deployment was activated by a dual engine shutdown, could also result in loss of hydraulic power for the flight controls [and consequent reduced ability of the flightcrew to maintain the safe flight and landing of the airplane].

\* \* \* \* \*

We are issuing this AD to require actions to correct the unsafe condition on these products.

**DATES:** This AD becomes effective December 14, 2010.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of December 14, 2010.

**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:** Christopher Alfano, 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) 228-7340; 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 June 4, 2010 (75 FR 31731). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

Following five reported cases of balance washer screw failure on similar RATs [ram air turbine]/air driven generators installed on other aircraft types, an investigation by Hamilton Sundstrand determined that a specific batch of the screws had a metallographic non-conformity that increased their susceptibility to brittle fracture. Subsequently, it was established that 187 RATs [Part Number (P/N) GL456-1101-7 and Hamilton Sundstrand P/Ns in the 762826 series] had non-conforming screws installed either during production or possibly during maintenance or repair at Hamilton Sundstrand repair stations.

Failure of a balance washer screw can result in loss of the related balance washer, with consequent turbine imbalance. Such imbalance could potentially result in RAT structural failure (including blade failure), loss of RAT electrical power and structural damage to the aircraft and, if deployment was activated by a dual engine shutdown, could also result in loss of hydraulic power for the flight controls [and consequent reduced ability of the flightcrew to maintain the safe flight and landing of the airplane].

This [Canadian] directive mandates checking of the RAT and replacing the balance washer screws, if required. It also prohibits future installation of unmodified RATs.

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

### **Actions Since NPRM Was Issued**

We have determined that this AD should refer to the latest service information. We have reviewed Bombardier Service Bulletin 700-1A11-24-014, Revision 02, dated March 15, 2010; and Bombardier Service Bulletin 700-24-075, Revision 02, dated March 15, 2010; which introduce minor changes, but do not add any additional work. We have revised this final rule to include the latest version of the applicable Bombardier service information and to provide credit for work done before the effective date of this AD, in accordance with the previous revisions of the service information.

## **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

## **Conclusion**

We reviewed the available data and determined that air safety and the public interest require adopting the AD with the changes described previously. We determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

## **Differences Between This AD and the MCAI or Service Information**

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow our FAA policies. Any such differences are highlighted in a NOTE within the AD.

## **Costs of Compliance**

We estimate that this AD will affect 115 products of U.S. registry. We also estimate that it will take about 1 work-hour per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$9,775, or \$85 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 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); 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.

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, 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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**2010-23-08 Bombardier, Inc.:** Amendment 39-16497. Docket No. FAA-2010-0548; Directorate Identifier 2010-NM-041-AD.

**Effective Date**

- (a) This airworthiness directive (AD) becomes effective December 14, 2010.

**Affected ADs**

- (b) None.

**Applicability**

- (c) This AD applies to Bombardier, Inc. Model BD-700-1A10 and BD-700-1A11 airplanes, serial numbers 9002 and subsequent; certificated in any category.

**Subject**

- (d) Air Transport Association (ATA) of America Code 24: Electrical power.

**Reason**

- (e) The mandatory continuing airworthiness information (MCAI) states:

Following five reported cases of balance washer screw failure on similar RATs [ram air turbines]/air driven generators installed on other aircraft types, an investigation by Hamilton Sundstrand determined that a specific batch of the screws had a metallographic non-conformity that increased their susceptibility to brittle fracture. Subsequently, it was established that 187 RATs [Part Number (P/N) GL456-1101-7 and Hamilton Sundstrand P/Ns in the 762826 series] had non-conforming screws installed either during production or possibly during maintenance or repair at Hamilton Sundstrand repair stations.

Failure of a balance washer screw can result in loss of the related balance washer, with consequent turbine imbalance. Such imbalance could potentially result in RAT structural failure (including blade failure), loss of RAT electrical power and structural damage to the aircraft and, if deployment was activated by a dual engine shutdown, could also result in loss of hydraulic power for the flight controls [and consequent reduced ability of the flightcrew to maintain the safe flight and landing of the airplane].

This [Canadian] directive mandates checking of the RAT and replacing the balance washer screws, if required. It also prohibits future installation of unmodified RATs.

## Compliance

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

## Inspection

(g) For airplanes having serial numbers 9002 through 9380 inclusive: At the earliest of the times identified in paragraphs (g)(1), (g)(2), (g)(3) and (g)(4) of this AD, inspect to determine the serial number of the installed ram air turbine (RAT), in accordance with the Accomplishment Instructions of the applicable service bulletin listed in Table 1 of this AD. This inspection may be conducted visually, which requires lowering the RAT. A review of airplane maintenance records is acceptable in lieu of this inspection if the serial number of the RAT can be conclusively determined from that review.

(1) Within 500 flight hours or 24 months after the effective date of this AD, whichever occurs first; or

(2) Prior to the next in-flight or on-ground functional test of the RAT, whichever occurs first after the effective date of this AD; or

(3) Prior to the next in-flight or on-ground operational test of the RAT, whichever occurs first after the effective date of this AD; or

(4) Prior to the next scheduled RAT in-flight deployment.

(h) If the RAT serial number, as determined in paragraph (g) of this AD, is not listed in paragraph 1.A of the applicable service bulletin listed in Table 1 of this AD, no further action is required by this AD, except as required by paragraph (j) of this AD.

**Table 1 – Service Bulletins**

<b>Model –</b>	<b>Bombardier Service Bulletin –</b>	<b>Revision –</b>	<b>Dated –</b>
BD-700-1A11	700-1A11-24-014	02	March 15, 2010
BD-700-1A10	700-24-075	02	March 15, 2010

(i) If the RAT serial number, determined in paragraph (g) of this AD, is listed in paragraph 1.A. of the applicable service bulletin listed in Table 1 of this AD, before further flight, inspect to determine if the symbol "24-7" is marked on the RAT identification plate, in accordance with the Accomplishment Instructions of the applicable service bulletin listed in Table 1 of this AD. A review of airplane maintenance records is acceptable in lieu of this inspection if the symbol "24-7" mark can be conclusively determined from that review.

(1) If the symbol "24-7" is marked on the RAT identification plate, the balance washer screws have already been replaced and no further action is required by this AD, except as required by paragraph (j) of this AD.

(2) If the symbol "24-7" is not marked on the RAT identification plate, before further flight, replace all balance washer screws with new balance washer screws, part number MS24667-14, and mark the RAT identification plate with the symbol "24-7," in accordance with the Accomplishment Instructions of the applicable service bulletin listed in Table 1 of this AD.

(j) For all airplanes: As of the effective date of this AD, no person may install on any airplane a replacement or spare RAT (P/N GL456-1101-7; Hamilton Sundstrand P/Ns in the 762826 series) having one of the S/Ns listed in paragraph 1.A. of the applicable service bulletin listed in Table 1 of

this AD unless the balance washer screws have already been replaced and the symbol "24-7" is marked on the RAT identification plate.

### **Credit for Actions Accomplished in Accordance With Previous Service Information**

(k) Actions accomplished before the effective date of this AD, in accordance with the applicable service bulletin listed in Table 2 of this AD, are considered acceptable for compliance with the corresponding action specified in this AD.

**Table 2 – Credit Service Bulletins**

<b>Model –</b>	<b>Bombardier Service Bulletin –</b>	<b>Revision –</b>	<b>Dated –</b>
BD-700-1A11	700-1A11-24-014	01	July 15, 2009
BD-700-1A10	700-24-075	01	July 15, 2009

### **FAA AD Differences**

Note 1: This AD differs from the MCAI and/or service information as follows: Although Canadian Airworthiness Directive CF-2010-01, dated January 18, 2010, recommends accomplishing the visual inspection prior to the next scheduled in-flight operational test of the RAT, we have determined that interval would not address the identified unsafe condition soon enough to ensure an adequate level of safety for the affected fleet in light of the degree of urgency associated with the subject unsafe condition. This difference has been coordinated with Transport Canada Civil Aviation (TCCA).

### **Other FAA AD Provisions**

(l) 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. Send information 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 on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards 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.

(3) Reporting Requirements: For any reporting requirement in this AD, under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

## **Related Information**

(m) Refer to MCAI TCCA Airworthiness Directive CF-2010-01, dated January 18, 2010; and Bombardier Service Bulletins 700-24-075, Revision 02, dated March 15, 2010, and 700-1A11-24-014, Revision 02, dated March 15, 2010; for related information.

## **Material Incorporated by Reference**

(n) You must use Bombardier Service Bulletins 700-24-075, Revision 02, dated March 15, 2010; or Bombardier Service Bulletin 700-1A11-24-014, Revision 02, dated March 15, 2010; as applicable; to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) For service information identified in this AD, contact Bombardier, Inc., 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 514-855-5000; fax 514-855-7401; e-mail [thd.crj@aero.bombardier.com](mailto:thd.crj@aero.bombardier.com); Internet <http://www.bombardier.com>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(4) 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 NARA, 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 October 21, 2010.

Michael Kaszycki,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.