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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-1068; Directorate Identifier 2009-NM-042-AD; Amendment 39-16258; AD 2010-08-03]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc. Model CL-600-2B19 (Regional Jet Series 100 & 440) Airplanes

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

ACTION: Final rule.

SUMMARY: We are superseding an existing 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:

The heating capability of several Angle Of Attack (AOA) transducer heating elements removed from in-service aircraft have been found to be below the minimum requirement. Also, it was discovered that a large number of AOA transducers repaired in an approved maintenance facility were not calibrated accurately.

Inaccurate calibration of the AOA transducer and/or degraded AOA transducer heating elements can result in early or late activation of the stall warning, stick shaker and stick pusher by the Stall Protection Computer (SPC).

* * * * *

The unsafe condition is reduced controllability of the airplane. We are issuing this AD to require actions to correct the unsafe condition on these products.

DATES: This AD becomes effective May 19, 2010.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of May 19, 2010.

The Director of the Federal Register previously approved the incorporation by reference of a certain publication listed in this AD as of March 9, 2009 (74 FR 7789, February 20, 2009).

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: Wing Chan, Aerospace Engineer, Systems and Flight Test Branch, ANE-172, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7311; 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 November 18, 2009 (74 FR 59480), and proposed to supersede AD 2009-04-11, Amendment 39-15817 (74 FR 7789, February 20, 2009). That NPRM proposed to correct an unsafe condition for the specified products.

The mandatory continued airworthiness information (MCAI) states:

The heating capability of several Angle Of Attack (AOA) transducer heating elements removed from in-service aircraft have been found to be below the minimum requirement. Also, it was discovered that a large number of AOA transducers repaired in an approved maintenance facility were not calibrated accurately.

Inaccurate calibration of the AOA transducer and/or degraded AOA transducer heating elements can result in early or late activation of the stall warning, stick shaker and stick pusher by the Stall Protection Computer (SPC).

This [Canadian] directive mandates a periodic inspection of the inrush current to verify the AOA heating capability and replacement of the inaccurately calibrated AOA transducers.

The unsafe condition is reduced controllability of the airplane. This AD retains the requirements of AD 2009-04-11 and also requires a one-time inspection of certain angle of attack (AOA) transducers, replacement of transducers having certain serial numbers, repetitive inspections of the inrush current for certain AOA transducers, and replacement of inaccurately calibrated AOA transducers. 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 considered the comment received.

Request To Allow Records Check

Mesa Airlines requests that we allow the use of a records check in lieu of the inspection for serial numbers specified in paragraph (g)(2) of the NPRM. Mesa Airlines points out that serial numbers could already be known to operators after compliance with AD 2009-04-11. Mesa Airlines also notes that AOA transducers are delicate instruments that could be damaged by removal for the purpose of confirming serial numbers.

For the reasons provided by Mesa Airlines, we agree to allow operators to perform a review of the airplane maintenance records in lieu of performing an inspection of the AOA transducer to determine the serial number, if the serial number can be conclusively determined from that review. We have revised paragraph (g)(2) of this AD accordingly.

Explanation of Change to Applicability

We have revised the applicability of this AD to identify model designations as published in the most recent type certificate data sheet for the affected models.

Conclusion

We reviewed the available data, including the comment received, 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.

Explanation of Change to Costs of Compliance

Since issuance of the NPRM, we have increased the labor rate used in the Costs of Compliance from \$80 per work-hour to \$85 per work-hour. The Costs of Compliance information, below, reflects this increase in the specified hourly labor rate.

Costs of Compliance

We estimate that this AD will affect about 613 products of U.S. registry.

The actions that are required by AD 2009-04-11 and retained in this AD take about 1 work-hour per product, at an average labor rate of \$85 per work-hour. Based on these figures, the estimated cost of the currently required actions is \$85 per product.

We estimate that it will take about 1 work-hour per product to comply with the new 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 \$52,105, 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 removing Amendment 39-15817 (74 FR 7789, February 20, 2009) and adding the following new AD:



2010-08-03 Bombardier, Inc: Amendment 39-16258. Docket No. FAA-2009-1068; Directorate Identifier 2009-NM-042-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective May 19, 2010.

Affected ADs

- (b) This AD supersedes AD 2009-04-11, Amendment 39-15817.

Applicability

(c) This AD applies to Bombardier, Inc. Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes, serial numbers 7003 and subsequent, certificated in any category, that are equipped with Thales angle of attack (AOA) transducers having part number (P/N) 45150340 or C16258AA.

Subject

- (d) Air Transport Association (ATA) of America Code 27: Flight controls.

Reason

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

The heating capability of several Angle Of Attack (AOA) transducer heating elements removed from in-service aircraft have been found to be below the minimum requirement. Also, it was discovered that a large number of AOA transducers repaired in an approved maintenance facility were not calibrated accurately.

Inaccurate calibration of the AOA transducer and/or degraded AOA transducer heating elements can result in early or late activation of the stall warning, stick shaker and stick pusher by the Stall Protection Computer (SPC).

This [Canadian] directive mandates a periodic inspection of the inrush current to verify the AOA heating capability and replacement of the inaccurately calibrated AOA transducers.

The unsafe condition is reduced controllability of the airplane. This AD retains the requirements of AD 2009-04-11 and also requires a one-time inspection of certain AOA transducers, replacement of transducers having certain serial numbers, repetitive inspections of the inrush current for certain AOA transducers, and replacement of inaccurately calibrated AOA transducers.

Restatement of Requirements of AD 2009-04-11, With No Changes

(f) Unless already done, do the following actions:

(1) For airplanes equipped with a transducer having accumulated more than 7,500 total flight hours as of March 9, 2009 (the effective date of AD 2009-04-11): Within 250 flight hours after March 9, 2009, measure the inrush current of both AOA transducers in accordance with Part A of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008.

(i) If both AOA transducers are found to have an inrush current of 1.60 amps or more, repeat the measurement thereafter at intervals not to exceed the applicable interval specified in Table 1 of this AD. Do the measurement in accordance with Part A of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008.

Table 1 - Repetitive Measurement Intervals

If the last inrush current measurement of the serviceable AOA transducer is -	Then repeat the measurement -
More than or equal to 1.90 amps	Within 2,000 flight hours after the last measurement.
More than or equal to 1.80 amps but less than 1.90 amps	Within 1,500 flight hours after the last measurement.
More than or equal to 1.70 amps but less than 1.80 amps	Within 1,000 flight hours after the last measurement.
More than or equal to 1.60 amps but less than 1.70 amps	Within 500 flight hours after the last measurement.

(ii) If one AOA transducer is found to have an inrush current below 1.60 amps, and the other AOA transducer is found to have an inrush current of 1.60 amps or more: Do the actions required by paragraphs (f)(1)(ii)(A) and (f)(1)(ii)(B) of this AD.

(A) For the AOA transducer having an inrush current of 1.60 amps or more: Repeat the measurement thereafter at intervals not to exceed the applicable interval specified in Table 1 of this AD. Do the measurement in accordance with Part A of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008.

(B) For the AOA transducer having an inrush current below 1.60 amps ("degraded" transducer): Within 1,000 flight hours after March 9, 2009, replace that transducer in accordance with Part C of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008. At the applicable time specified in Table 1 of this AD if the degraded transducer was replaced with a serviceable transducer, or within 2,000 flight hours after replacement if the degraded transducer was replaced with a new transducer, do the measurement for that replacement transducer and repeat the measurements thereafter at intervals not to exceed the applicable interval specified in Table 1 of this AD. Do the measurement in accordance with Part A of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008.

(iii) If both AOA transducers are found to have an inrush current below 1.60 amps, do the action specified in paragraph (f)(1)(iii)(A) or (f)(1)(iii)(B) of this AD.

(A) Before further flight, replace one of the degraded AOA transducers with a new or serviceable transducer; and replace the other degraded transducer with a new or serviceable transducer within 1,000 flight hours after the measurement required by paragraph (f)(1) of this AD; in accordance with Part C of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008. At the applicable time specified in Table 1 of this AD, if the degraded

transducer was replaced with a serviceable transducer; or within 2,000 flight hours after replacement if the degraded transducer was replaced with a new transducer: Do the measurement for that replacement transducer and repeat the measurement thereafter at intervals not to exceed the applicable interval specified in Table 1 of this AD. Do the measurements in accordance with Part A of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008.

(B) Within 1,000 flight hours after the measurement required by paragraph (f) of this AD, replace both degraded AOA transducers with new or serviceable transducers in accordance with Part C of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008. Until the replacement is done, dispatch with two degraded AOA transducers is allowed, provided that the applicable Limitations section of the airplane flight manual (AFM) is revised to include the following statement or a copy of this AD is inserted into the applicable Limitations section of the AFM.

"Dispatch is allowed if:

(a) Operations are not conducted in visible moisture (including standing water and slush) in any form,

(b) Operations are not conducted in known or forecast icing conditions,

(c) Both Ice Detection Systems are operative; and,

(d) Operations are conducted in day VMC conditions only."

After the replacement has been accomplished, the statement or the copy of this AD may be removed from the AFM. At the applicable time specified in Table 1 of this AD, if the degraded transducer was replaced with a serviceable transducer; or within 2,000 flight hours after replacement with a new transducer: Do the measurement for that replacement transducer and repeat the measurement thereafter at intervals not to exceed the applicable interval specified in Table 1 of this AD. Do the measurement in accordance with Part A of Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008.

(2) If, during any repetitive measurement required by paragraphs (f)(1)(i), (f)(1)(ii), and (f)(1)(iii) of this AD, any AOA transducer is found to have an inrush current below 1.60 amps, before further flight, replace that transducer in accordance with Part C of the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008. At the applicable time specified in Table 1 of this AD, if the degraded transducer was replaced with a serviceable transducer; or within 2,000 flight hours after replacement if the degraded transducer was replaced with a new transducer: Do the measurement for that replacement transducer as specified in paragraph (f)(1)(ii)(B) of this AD and repeat the measurement thereafter at intervals not to exceed the applicable interval specified in Table 1 of this AD.

(3) Actions done before March 9, 2009, in accordance with Bombardier Service Bulletin 601R-27-153, dated October 17, 2008, are acceptable for compliance with the corresponding requirements of paragraphs (f)(1) and (f)(2) of this AD.

New Requirements of This AD: Actions and Compliance

(g) Unless already done, do the following actions.

(1) For airplanes equipped with a transducer having accumulated 7,500 or fewer flight hours as of March 9, 2009, except transducers that have been measured in accordance with paragraph (f)(1) of this AD: Do the actions specified in paragraph (f)(1) of this AD before the transducer accumulates 7,500 total flight hours, or within 500 flight hours after the effective date of this AD, whichever occurs later.

(2) Within 900 flight hours after the effective date of this AD, inspect AOA transducers having P/N 45150340 or C16258AA to determine the serial numbers. A review of airplane maintenance records is acceptable in lieu of this inspection if the serial number of the AOA transducer can be conclusively determined from that review.

(i) If the serial number is not identified in paragraph 1.A.(1) of Bombardier Service Bulletin 601R-27-154, dated December 1, 2008, no further action is required by this paragraph.

(ii) If the part number and serial number are identified in one of the tables in paragraph 1.A.(1) of Bombardier Service Bulletin 601R-27-154, dated December 1, 2008, and have the suffix "A," no further action is required by this paragraph.

Note 1: Bombardier Service Bulletin 601R-27-154, dated December 1, 2008, references Thales Avionics Service Bulletins 45150340-31-004 and C16258A-27-002, both dated November 28, 2008, as additional sources of guidance for part and serial number information.

(iii) If the part number and serial number are identified in a table in paragraph 1.A.(1) of Bombardier Service Bulletin 601R-27-154, dated December 1, 2008, before further flight, replace the AOA transducer with a new or serviceable transducer, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 601R-27-154, dated December 1, 2008.

(3) As of the effective date of this AD, no person may install a replacement AOA transducer having P/N 45150340 or P/N C16258AA with a serial number identified in paragraph 1.A.(1) of Bombardier Service Bulletin 601R-27-154, dated December 1, 2008, unless the serial number has the suffix "A."

FAA AD Differences

Note 2: This AD differs from the MCAI and/or service information as follows: No differences.

Other FAA AD Provisions

(h) 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

(i) Refer to MCAI Canadian Airworthiness Directive CF-2008-35, dated December 22, 2008; Bombardier Service Bulletin 601R-27-154, dated December 1, 2008; and Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008; for related information.

Material Incorporated by Reference

(j) You must use Bombardier Service Bulletin 601R-27-154, dated December 1, 2008; and Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008; 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 Bombardier Service Bulletin 601R-27-154, dated December 1, 2008, under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The Director of the Federal Register previously approved the incorporation by reference of Bombardier Service Bulletin 601R-27-153, Revision A, dated December 16, 2008, on March 9, 2009 (74 FR 7789, February 20, 2009).

(3) 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; 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, Washington. 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 NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on March 25, 2010.

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