

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0471; Directorate Identifier 2010-NM-219-AD; Amendment 39-16800; AD 2011-18-18]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc. Model DHC-8-400 Series Airplanes

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

ACTION: Final rule.

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:

Several operators have reported pitch oscillations and/or elevator asymmetry caution lights illumination when flying with the autopilot engaged. Investigations revealed that loose rivets in the torque tube assemblies caused relative motion between the crank arms and torque tubes.

Loose rivets could result in excessive wear and subsequent significant backlash in the driving crank arms. This condition, if left uncorrected, will progressively get worse and degrade the controllability of the aeroplane.

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

DATES: This AD becomes effective October 14, 2011.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of October 14, 2011.

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: Stephen Kowalski, 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) 228-7327; 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 May

12, 2011 (76 FR 27617). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

Several operators have reported pitch oscillations and/or elevator asymmetry caution lights illumination when flying with the autopilot engaged. Investigations revealed that loose rivets in the torque tube assemblies caused relative motion between the crank arms and torque tubes.

Loose rivets could result in excessive wear and subsequent significant backlash in the driving crank arms. This condition, if left uncorrected, will progressively get worse and degrade the controllability of the aeroplane.

Required actions include doing an inspection for the part number of the left and right elevator torque tube assemblies and, if necessary, replacing the elevator torque tube assembly or replacing the elevator torque tube rivets, and re-identifying the assemblies. 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 NPRM (76 FR 27617, May 12, 2011) or on the determination of the cost to the public.

Revised Service Information

Bombardier Service Bulletin 84-27-50, Revision 'D,' dated September 22, 2010, has been issued for clarification, but adds no new actions. We have updated the references in paragraphs (g), (h), (i), and (m) of this AD to include Bombardier Service Bulletin 84-27-50, Revision 'D,' dated September 22, 2010. We have also updated Table 1 of this AD to allow credit for Bombardier Service Bulletin 84-27-50, Revision 'C,' dated July 26, 2010.

Conclusion

We reviewed the relevant data, and determined that air safety and the public interest require adopting the AD with the changes described previously. We also 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 66 products of U.S. registry. We also estimate the following costs to comply with this AD.

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	2 X \$85 per hour = \$170	None	\$170	\$11,220

We estimate the following costs to do any necessary replacements that would be required based on the results of the required inspection. We have no way of determining the number of aircraft that might need these replacements:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replace left torque tube	15 work-hours X \$85 per hour = \$1,275	\$4,354	\$5,629
Replace right torque tube	15 work-hours X \$85 per hour = \$1,275	\$5,913	\$7,188

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:



2011-18-18 Bombardier, Inc.: Amendment 39-16800. Docket No. FAA-2011-0471; Directorate Identifier 2010-NM-219-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective October 14, 2011.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Bombardier, Inc. Model DHC-8-400, -401, and -402 airplanes; certificated in any category; serial numbers 4001 through 4305 inclusive.

Subject

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

Reason

- (e) The mandatory continuing airworthiness information (MCAI) states:
Several operators have reported pitch oscillations and/or elevator asymmetry caution lights illumination when flying with the autopilot engaged. Investigations revealed that loose rivets in the torque tube assemblies caused relative motion between the crank arms and torque tubes.
Loose rivets could result in excessive wear and subsequent significant backlash in the driving crank arms. This condition, if left uncorrected, will progressively get worse and degrade the controllability of the aeroplane.

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 for Part Number

(g) At the applicable times identified in paragraphs (g)(1) and (g)(2) of this AD, do an inspection to determine the part numbers of the left and right elevator torque tubes, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-27-50, Revision 'D,' dated September 22, 2010. A review of airplane maintenance records is acceptable in lieu of this inspection if the part numbers of the left and right elevator torque tubes can be conclusively determined from that review.

(1) For airplanes that have accumulated 8,000 or more total flight hours as of the effective date of this AD: Within 2,000 flight hours after the effective date of this AD.

(2) For airplanes that have accumulated less than 8,000 total flight hours as of the effective date of this AD: Within 6,000 flight hours after the effective date of this AD, but before the accumulation of 10,000 total flight hours.

Corrective Actions

(h) If, as a result of the inspection required by paragraph (g) of this AD, any left elevator torque tube has part number (P/N) 82760709-009, at the applicable time in paragraph (g)(1) or (g)(2) of this AD, do the actions in paragraph (h)(1) or (h)(2) of this AD.

(1) Replace the elevator torque tube with a new elevator torque tube having P/N 82760709-011, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-27-50, Revision 'D,' dated September 22, 2010.

(2) Replace the rivets in each elevator torque tube assembly with Hi Lite pins having P/N B0206001AG8 and collars having P/N HST1070CY, and re-identify the elevator torque tube assembly having P/N 82760709-009, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-27-50, Revision 'D,' dated September 22, 2010.

(i) If, as a result of the inspection required by paragraph (g) of this AD, any right elevator torque tube has P/N 82760757-009, at the applicable time in paragraph (g)(1) or (g)(2) of this AD, do the actions in paragraph (i)(1) or (i)(2) of this AD.

(1) Replace the elevator torque tube with a new elevator torque tube having P/N 82760757-011, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-27-50, Revision 'D,' dated September 22, 2010.

(2) Replace the rivets in each elevator torque tube assembly with Hi Lite pins having P/N B0206001AG8 and collars having P/N HST1070CY, and re-identify the elevator torque tube assembly having P/N 82760757-009, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-27-50, Revision 'D,' dated September 22, 2010.

Credit for Actions Accomplished in Accordance With Previous Service Information

(j) Actions done before the effective date of this AD, in accordance with the service bulletins listed in table 1 of this AD, are considered acceptable for compliance with the corresponding action specified in this AD.

Table 1—Credit Service Bulletins

Service Bulletin	Revision	Date
Bombardier Service Bulletin 84-27-50	Original	March 3, 2010
Bombardier Service Bulletin 84-27-50	A	April 28, 2010
Bombardier Service Bulletin 84-27-50	B	May 19, 2010
Bombardier Service Bulletin 84-27-50	C	July 26, 2010

Parts Installation

(k) As of the effective date of this AD, no person may install on any airplane an elevator torque tube assembly having P/N 82760709-009 or 82760757-009.

FAA AD Differences

Note 1: This AD differs from the MCAI and/or service information as follows: No differences.

Other FAA AD Provisions

(1) 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.

Related Information

(m) Refer to MCAI Canadian Airworthiness Directive CF-2010-27, dated August 20, 2010; and Bombardier Service Bulletin 84-27-50, Revision 'D,' dated September 22, 2010; for related information.

Material Incorporated by Reference

(n) You must use Bombardier Service Bulletin 84-27-50, Revision 'D,' dated September 22, 2010, 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., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416-375-4000; fax 416-375-4539; e-mail thd.qseries@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.

Issued in Renton, Washington, on August 23, 2011.

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