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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0118; Product Identifier 2017-NM-083-AD; Amendment 39-19371; AD 2018-17-17]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc., Airplanes

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

ACTION: Final rule.

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 arcing and smoke emanating from the windshields. This AD requires a revision to the maintenance or inspection program, as applicable, to include an inspection of the windshield moisture seal for signs of cracks, erosion, wear, and other deterioration; doing that inspection and repair if necessary; and re-torqueing the screws that fasten the windshield heater terminal lugs and applying sealant to the screw heads of the windshield heaters. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective October 2, 2018.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of October 2, 2018.

ADDRESSES: For service information identified in this final rule, 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; internet: http://www.bombardier.com. You may view this referenced service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-0118.

Examining the AD Docket

You may examine the AD docket on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-0118; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the

regulatory evaluation, any comments received, and other information. The address for Docket Operations (phone: 800-647-5527) is Docket Operations, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Steve Dzierzynski, Aerospace Engineer, Avionics and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7367; fax 516-794-5531.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Bombardier, Inc., Model DHC-8-400 series airplanes. The NPRM published in the Federal Register on March 1, 2018 (83 FR 8810). The NPRM was prompted by reports of arcing and smoke emanating from the windshields. The NPRM proposed to require a revision to the maintenance or inspection program, as applicable, to include an inspection of the windshield moisture seal for signs of cracks, erosion, wear, and other deterioration; doing that inspection and repair if necessary; and re-torqueing the screws that fasten the windshield heater terminal lugs and applying sealant to the screw heads of the windshield heaters.

We are issuing this AD to detect and correct loose windshield heater terminal lugs. Loose terminal lugs could create sparks that lead to burning of the lugs and, due to the excessive heat, cracking of the windshields. If not corrected, such a condition could cause a loss of cabin pressure resulting in an emergency descent.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF-2017-18, dated May 26, 2017 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for certain Bombardier, Inc., Model DHC-8-400 series airplanes. The MCAI states:

> There have been numerous reports of arcing and smoke emanating from the windshields. Review of these incidents revealed that the windshield heater terminal lugs tend to loosen over time. Loose terminal lugs could create sparks that lead to burning of the lugs and, due to the excessive heat, cracking of the windshields. If not corrected, this condition could cause a loss of cabin pressure resulting in an emergency descent.

Required actions include a revision to the maintenance or inspection program, as applicable, to include an inspection of the windshield moisture seal for signs of cracks, erosion, wear, or other deterioration; doing that inspection and repair if necessary; and re-torqueing the screws that fasten the windshield heater terminal lugs and applying sealant (Humiseal) to the screw heads of the windshield heaters. You may examine the MCAI in the AD docket on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-0118.

Comments

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Revise Requirements Related to Temporary Revision (TR)

Horizon Air requested that paragraph (g) of the proposed AD be revised to either refer to Bombardier Q400 Dash 8 Maintenance Requirements Manual (MRM) Part 1, Revision 13, dated March 15, 2017 ("MRM Part 1, Revision 13"), or include a statement that, "When this temporary revision has been included in general revisions of the PSM [product support manual], the general revisions may be inserted in the maintenance or inspection program, as applicable, provided the relevant information in the general revision is identical to that in Bombardier [Q400 Dash 8 Maintenance Review Board Report] TR MRB-0099 [dated December 9, 2016 ("TR MRB-0099")]." The commenter noted that paragraph (g) of the proposed AD would require incorporation of TR MRB-0099 and that this TR has already been incorporated into MRM Part 1, Revision 13.

We agree to clarify the requirement in paragraph (g) of the AD. As noted by the commenter, the TR has already been incorporated into MRM Part 1, Revision 13. Therefore, if operators incorporate MRM Part 1, Revision 13, into the maintenance or inspection program, as applicable, they are in compliance with paragraph (g)(1) of this AD (i.e., since the MRM Part 1, Revision 13, contains the information in TR MRB-0099, by incorporating MRM Part 1, Revision 13, the operator is complying with the requirement to incorporate the information specified in TR MRB-0099). We have revised paragraph (g) of this AD to include a statement in paragraph (g)(2) of this AD that specifies if the information in TR MRB-0099 has been included in the general revisions of the maintenance requirements manual and the general revisions have been inserted in the maintenance or inspection program, as applicable, the requirement of paragraph (g)(1) of this AD is met.

Request To Include Instructions for Doing Inspection

Horizon Air requested that Bombardier Q400 Dash 8 MRB Task 561001E201, "General Visual Inspection of the Windshield Moisture Seal," ("MRB Task 561001E201"), Task 56-10-01-210-801, of the Bombardier Q400 Dash 8 Airplane Maintenance Manual, be included in paragraph (i) of the proposed AD as approved instructions for doing the inspection of the moisture seal on the left and right windshields.

We agree with the commenter's request. We have included information in Note 1 to paragraph (i) of this AD that guidance for doing the inspection of the moisture seal can be found in MRB Task 561001E201. We also re-designated Note 1 to paragraph (i) of the proposed AD to Note 2 to paragraph (i) of this AD.

Request To Include Additional Information in Note 1 to Paragraph (i) of the Proposed AD

Horizon Air requested that Note 1 to paragraph (i) of the proposed AD include PPG Sierracin Component Maintenance Manual (CMM) 56-10-12, Revision B, dated October 21, 2004. The commenter observed that Note 1 to paragraph (i) of the proposed AD provided additional guidance for repair of the moisture seal and referred to PPG Aerospace Transparencies Abbreviated CMM, Part Number NP-157901, Revision 6, dated June 16, 2015. The commenter did not provide justification for this request.

We partially agree with the commenter's request. We have moved the content of Note 1 to paragraph (i) of the proposed AD into Note 2 to paragraph (i) of this AD. Instead of Revision B, we have included Revision D, dated April 6, 2017, of PPG Sierracin CMM, 56-10-12, as an additional source of guidance for repair of the moisture seal.

Request To Exclude Job Set-Up and Close Out From Required Actions

Horizon Air requested that only the sections of the Accomplishment Instructions of Bombardier Service Bulletin 84-30-16, Revision A, dated September 27, 2017, that address the unsafe condition be specified in paragraph (j) of the proposed AD. The commenter stated that including the job set-up

and close out sections of the Accomplishment Instructions restricts an operator's ability to perform other maintenance in conjunction with the incorporation of the actions specified in this service bulletin.

We agree with the commenter's request to clarify which section of the Accomplishment Instructions of Bombardier Service Bulletin 84-30-16, Revision A, dated September 27, 2017, that operators must use to accomplish the actions required by paragraph (j) of this AD. We have revised paragraph (j) of this AD to specify that operators must do the applicable actions in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Service Bulletin 84-30-16, Revision A, dated September 27, 2017.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

Related Service Information Under 1 CFR Part 51

Bombardier has issued Service Bulletin 84-30-16, Revision A, dated September 27, 2017. This service information describes procedures for re-torqueing the screws that fasten the windshield heater terminal lugs and applying sealant to the screw heads of the windshield heaters.

Bombardier has also issued Q400 Dash 8 Maintenance Review Board Report Temporary Revision (TR) MRB-0099, dated December 9, 2016. This temporary revision describes procedures for inspecting the moisture seal for the left and right windshields for signs of cracks, erosion, wear, and other deterioration.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 54 airplanes of U.S. registry.

We 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/Re-torque/Seal	Up to 3 work-hours × $85 per hour = $255	$0	Up to $255	Up to $13,770.

We have determined that revising the maintenance or inspection program takes an average of 90 work-hours per operator, although we recognize that this number may vary from operator to operator. In the past, we have estimated that this action takes 1 work-hour per airplane. Since operators incorporate maintenance or inspection program changes for their affected fleet(s), we have determined that a per-operator estimate is more accurate than a per-airplane estimate. Therefore, we estimate the total cost per operator to be $7,650 (90 work-hours x $85 per work-hour).

We have received no definitive data that will enable us to provide a cost estimate for the on-condition repair specified in this AD.

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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

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.

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 airworthiness directive (AD):

2018-17-17 Bombardier, Inc.: Amendment 39-19371; Docket No. FAA-2018-0118; Product Identifier 2017-NM-083-AD.

(a) Effective Date

This AD is effective October 2, 2018.

(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 through 4524 inclusive.

(d) Subject

Air Transport Association (ATA) of America Code 30, Ice and Rain Protection.

(e) Reason

This AD was prompted by reports of arcing and smoke emanating from the windshields. We are issuing this AD to detect and correct loose windshield heater terminal lugs. Loose terminal lugs could create sparks that lead to burning of the lugs and, due to the excessive heat, cracking of the windshields. If not corrected, such a condition could cause a loss of cabin pressure resulting in an emergency descent.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Revision to Inspection or Maintenance Program

(1) Within 30 days after the effective date of this AD: Revise the maintenance or inspection program, as applicable, to incorporate the task specified in Bombardier Q400 Dash 8 Maintenance Review Board Report Temporary Revision (TR) MRB-0099, dated December 9, 2016.

(2) If the information in Bombardier Q400 Dash 8 Maintenance Review Board Report Temporary Revision (TR) MRB-0099, dated December 9, 2016, has been included in the general revisions of the Bombardier Q400 Dash 8 Maintenance Requirements Manual and the general revisions have been inserted into the maintenance or inspection program, as applicable, the requirement in paragraph (g)(1) of this AD is met.

(h) No Alternative Actions or Intervals

After the maintenance or inspection program has been revised as required by paragraph (g) of this AD, no alternative actions (e.g., inspections) or intervals may be used unless the actions or intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (k)(1) of this AD.

(i) Inspection and Corrective Action

Within 1,600 flight hours or 12 months after the effective date of this AD, whichever occurs first, do a general visual inspection of the moisture seal on the left and right windshields for signs of cracks, erosion, wear, and other deterioration (including discoloration, warping, or missing material). If any crack, erosion, wear, or other deterioration is found, before further flight, repair the moisture seal in accordance with a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada Civil Aviation (TCCA); or Bombardier, Inc.'s TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

Note 1 to paragraph (i) of this AD: Additional guidance for inspection of the moisture seal can be found in Bombardier Q400 Dash 8 Maintenance Review Board (MRB) Task 561001E201, "General Visual Inspection of the Windshield Moisture Seal," (Task 56-10-01-210-801, of the Bombardier Q400 Dash 8 Airplane Maintenance Manual).

Note 2 to paragraph (i) of this AD: Additional guidance for repair of the moisture seal can be found in PPG Aerospace Transparencies Abbreviated Component Maintenance Manual, Part Number NP-157901, Revision 6, dated June 16, 2015; and PPG Sierracin Component Maintenance Manual, 56-10-12, Part Number 802600, Revision D, dated April 6, 2017.

(j) Re-Torqueing and Sealing Screws

Within 8,000 flight hours or 60 months after the effective date of this AD, whichever occurs first: Re-torque the windshield heater terminal lug screws for the left and right windshields and apply Humiseal to the screw heads of the windshield heaters, in accordance with paragraph 3.B., "Procedure," of the Accomplishment Instructions of Bombardier Service Bulletin 84-30-16, Revision A, dated September 27, 2017.

(k) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, New York ACO Branch, 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 manager of the certification office, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 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.

(2) Contacting the Manufacturer: For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO. If approved by the DAO, the approval must include the DAO-authorized signature.

(l) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian AD CF-2017-18, dated May 26, 2017, for related information. This MCAI may be found in the AD docket on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-0118.

(2) For more information about this AD, contact Steve Dzierzynski, Aerospace Engineer, Avionics and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7367; fax 516-794-5531.

(m) 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 Q400 Dash 8 Maintenance Review Board Report Temporary Revision (TR) MRB-0099, dated December 9, 2016.

(ii) Bombardier Service Bulletin 84-30-16, Revision A, dated September 27, 2017.

(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; internet: http://www.bombardier.com.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(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 Des Moines, Washington, on August 16, 2018.
Michael Kaszycki,
Acting Director, System Oversight Division,
Aircraft Certification Service.