



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-8178; Directorate Identifier 2015-NM-197-AD; Amendment 39-18721; AD 2016-24-04]

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 a determination by the manufacturer that shims might not have been installed between certain longerons and longeron joint fittings. This AD requires various repetitive and detailed visual inspections of the affected areas and corrective actions if necessary. This AD also provides terminating action for certain repetitive inspections. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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 Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-8178.

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-2016-8178; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone 800-647-5527) is Docket Management Facility, 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: Aziz Ahmed, Aerospace Engineer, Airframe and Mechanical Systems Branch, ANE-171, FAA, New York Aircraft Certification Office (ACO), 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7329; 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 July 15, 2016 (81 FR 45995) (“the NPRM”). The NPRM was prompted by a determination by the manufacturer that shims might not have been installed between certain longerons and longeron joint fittings. The NPRM proposed to require repetitive inspections of the external surface of the fuselage skin panel for loose or working fasteners, and corrective action if necessary; a detailed visual inspection of the longeron joint fittings for the existence of shims and, if necessary, repetitive inspections of the longeron and the longeron joint fittings for any cracking, and corrective action if necessary. We are issuing this AD to detect and correct missing shims between the longerons and longeron joint fittings, which could result in a gapping condition and lead to stress corrosion cracking of the longeron joint fittings, and could adversely affect the structural integrity of the wing-to-fuselage attachment joints.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian Airworthiness Directive CF-2015-22, dated August 3, 2015 (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:

The aeroplane manufacturer has determined that shims may not have been installed between the longerons and longeron joint fittings at fuselage station X373-380, stringers 7 on the left and right hand side, on certain aeroplanes. The

missing shims could result in a gapping condition and could lead to stress corrosion cracking of the longeron joint fittings.

Failure of the longeron joint fitting could compromise the structural integrity of the wing-to-fuselage attachment joint.

This [Canadian] AD mandates inspections in the area of the longeron joint fittings.

Corrective actions include replacing any loose or working fasteners (fasteners that show signs of wear, fatigue, or corrosion), repairing any structural damage, and replacing any cracked longeron or longeron with an amplitude of 50% or more of the calibration signal.

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-2016-8178.

Comments

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

Request to Incorporate Revised Service Information

Horizon Air requested that we incorporate Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016.

We agree with the commenter's request to incorporate the revised service information because Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016, is the latest revision. We have changed all service bulletin references in this final rule to Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016.

Request to Provide Credit for Previous Actions

Horizon Air requested that we add a paragraph addressing credit for previous actions.

We agree. Since we have incorporated revised service information in this final rule, we agree to provide credit for required tasks performed before the effective date of this AD using Bombardier Service Bulletin 84-53-65, dated February 27, 2015. We have added a new paragraph (n) to this AD to provide credit for previous actions and redesignated subsequent paragraphs accordingly.

Additional Changes to NPRM

We have reformatted paragraph (l) in this AD to clarify the requirements.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD 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 correcting 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 AD.

Related Service Information under 1 CFR part 51

We reviewed Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016. The service information describes procedures for inspections of the external surface of the fuselage skin panel for loose or working fasteners; a detailed visual inspection of the longeron joint fittings for the existence of shims; high frequency eddy current inspections of the longeron and the longeron joint fittings for any cracking; and replacement of longeron fittings, shims, and fasteners. 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 76 airplanes of U.S. registry.

We also estimate that it will take about 2 work-hours 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 on U.S. operators to be \$12,920, or \$170 per product.

In addition, we estimate that any necessary follow-on actions will take about 3 work-hours for the inspection for missing shims, 9 work-hours for the replacement of longeron fittings and shims, and 1 work-hour for a reporting requirement; and would require parts costing \$3,222; for a cost of up to \$4,327 per product. We have no way of determining the number of aircraft that might need these actions. We have received no definitive data that will enable us to provide cost estimates for repair of loose or working fasteners or structural damage specified in this AD.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this AD is 2120-0056. The paperwork cost associated with this AD has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as completing and reviewing the collection of information. Therefore, all reporting associated with this AD is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800 Independence Ave., SW, Washington, DC 20591, ATTN: Information Collection Clearance Officer, AES-200.

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.

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):

2016-24-04 Bombardier, Inc: Amendment 39-18721; Docket No. FAA-2016-8178; Directorate Identifier 2015-NM-197-AD.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(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 4156 through 4453 inclusive, 4456, and 4457.

(d) Subject

Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Reason

This AD was prompted by a determination by the manufacturer that shims might not have been installed between certain longerons and longeron joint fittings. We are issuing this AD to detect and correct missing shims between the longerons and longeron joint fittings, which could result in a gapping condition and lead to stress corrosion

cracking of the longeron joint fittings, and could adversely affect the structural integrity of the wing-to-fuselage attachment joints.

(f) Compliance

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

(g) Inspection of the External Surface of the Fuselage Skin Panels

At the time specified in paragraph (g)(1) or (g)(2) of this AD, as applicable, do a detailed visual inspection of the external surface of the fuselage skin panel for loose or working fasteners (fasteners that show signs of wear, fatigue, or corrosion) and structural damage, in accordance with paragraph 3.B. of the Accomplishment Instructions of Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016.

(1) For airplanes that have accumulated less than 10,000 total flight hours, or less than 5 years in service since new, as of the effective date of this AD: Prior to accumulating 12,000 total flight hours or 6 years in service since new, whichever occurs first.

(2) For airplanes that have accumulated 10,000 total flight hours or more, or 5 years or more in service since new, as of the effective date of this AD: Within 2,000 flight hours or 12 months after the effective date of this AD, whichever occurs first.

(h) Corrective Actions

If any loose or working fastener or any structural damage is found during any inspection required by this AD: Before further flight, repair using a method approved by the Manager, New York Aircraft Certification Office (ACO), FAA; or Transport Canada Civil Aviation (TCCA); or Bombardier, Inc.'s TCCA Design Approval Organization

(DAO); and thereafter do the inspections required by paragraph (i) of this AD.

Accomplishment of a repair in accordance with a method approved by the Manager, New York ACO, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO terminates the repetitive inspections required by paragraph (i) of this AD for the repaired area only.

(i) Repetitive Detailed Visual Inspections

Repeat the detailed visual inspection required by the introductory text to paragraph (g) of this AD at intervals not to exceed 12 months or 2,000 flight cycles, whichever occurs first after accomplishment of the most recent inspection, until the actions required by the introductory text to paragraph (j) of this AD are done.

(j) Inspection for Missing Shims

At the time specified in paragraph (j)(1) or (j)(2) of this AD, as applicable, do a detailed visual inspection of the longeron joint fittings for the existence of shims, in accordance with paragraph 3.C. of the Accomplishment Instructions of Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016.

(1) For airplanes that have accumulated less than 10,000 total flight hours, or less than 5 years in service since new, as of the effective date of this AD: Prior to accumulating 18,000 total flight hours or 9 years in service since new, whichever occurs first.

(2) For airplanes that have accumulated 10,000 total flight hours or more, or 5 years or more in service since new, as of the effective date of this AD: Within 8,000 flight hours or 4 years after the effective date of this AD, whichever occurs first; but not

to exceed 30,000 total flight hours or 144 months in service since new, whichever occurs first.

(k) Airplanes with Installed Shims: No Further Action Required

If the inspection required by the introductory text to paragraph (j) of this AD reveals that shims are installed in the longeron joint fittings, no further action is required by this AD.

(l) Airplanes with Missing Shims: High Frequency Eddy Current (HFEC) Inspections and Corrective Actions

If the inspection required by the introductory text to paragraph (j) of this AD reveals that any shim is missing from the longeron joint fittings: Before further flight, do a high frequency eddy current (HFEC) inspection of the longeron and the longeron joint fittings for any cracking, in accordance with paragraph 3.D. of the Accomplishment Instructions of Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016.

(1) If any crack is found, or if any indication with an amplitude of 50% or more of the calibration signal is found, do the actions specified in paragraphs (l)(1)(i) and (l)(1)(ii) of this AD.

(i) Before further flight: Replace the longeron joint fittings, in accordance with paragraph 3.E. of the Accomplishment Instructions of Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016.

(ii) At the applicable time specified in paragraph (l)(1)(ii)(A) or (l)(1)(ii)(B) of this AD: Report the inspection results to 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>.

(A) If the inspection was done on or after the effective date of this AD: Report within 30 days after that inspection.

(B) If the inspection was done before the effective date of this AD: Report within 30 days after the effective date of this AD.

(2) If no crack or indication with an amplitude of 50% or more of the calibration signal is found: Repeat the HFEC inspection required by the introductory text to paragraph (1) of this AD at intervals not to exceed 12,000 flight hours or 6 years, whichever occurs first after accomplishment of the most recent HFEC inspection, in accordance with paragraph 3.D. of the Accomplishment Instructions of Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016.

(m) Terminating Action for Repetitive HFEC Inspections

Replacement of the longeron joint fittings, in accordance with paragraph 3.E. of the Accomplishment Instructions of Bombardier Service Bulletin 84-53-65, Revision A, dated February 22, 2016, constitutes terminating action for the repetitive HFEC inspections required by paragraph (1)(2) of this AD.

(n) Credit for Previous Actions

This paragraph provides credit for actions required by paragraphs (g), (i), (j), (k), (l), and (m) of this AD, if those actions were performed before the effective date of this AD using Bombardier Service Bulletin 84-53-65, dated February 27, 2015.

(o) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, New York 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, 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. The AMOC approval letter must specifically reference this AD.

(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, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO. If approved by the DAO, the approval must include the DAO-authorized signature.

(3) Reporting Requirements: A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public

reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

(p) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian Airworthiness Directive CF-2015-22, dated August 3, 2015, 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-2016-8178.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (q)(3) and (q)(4) of this AD.

(q) 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 Service Bulletin 84-53-65, Revision A, dated February 22, 2016.

(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; Internet <http://www.bombardier.com>.

(4) You may view this 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 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 Renton, Washington, on November 17, 2016.

Phil Forde,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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