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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0356; Directorate Identifier 2008-NM-042-AD; Amendment 39-15661; AD 2008-18-04]

RIN 2120-AA64

Airworthiness Directives; Bombardier Model DHC-8-400 Series Airplanes

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

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD), which applies to certain Bombardier Model DHC-8-400 series airplanes. That AD currently requires inspecting all barrel nuts to determine if the barrel nuts have a certain marking, inspecting affected bolts to determine if the bolts are pre-loaded correctly, and replacing all hardware if the pre-load is incorrect. For airplanes on which the pre-load is correct, the existing AD requires doing repetitive visual inspections for cracking of the barrel nuts and cradles and replacing all hardware for all cracked barrel nuts. The existing AD also requires replacing all hardware for certain affected barrel nuts that do not have cracking, which would end the repetitive inspections for those airplanes. The existing AD also provides an optional replacement for all affected barrel nuts. This new AD requires replacing all affected barrel nuts and applying a certain compound to the affected barrel nuts and bolts. This AD results from reports of cracking in the barrel nuts at the four primary front spar wing-to-fuselage attachment joints. We are issuing this AD to detect and correct cracking of the barrel nuts at the wing front spar wing-to-fuselage joints, which could result in reduced structural integrity of the wing-to-fuselage attachments and consequent detachment of the wing.

DATES: This AD becomes effective October 14, 2008.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of October 14, 2008.

On February 13, 2008 (73 FR 8187, February 13, 2008), the Director of the Federal Register approved the incorporation by reference of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008.

ADDRESSES: For service information identified in this AD, contact Bombardier, Inc., Bombardier Regional Aircraft Division, 123 Garratt Boulevard, Downsview, Ontario M3K 1Y5, Canada.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; 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 address for the Docket Office (telephone 800-647-5527) is the Document 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: Pong Lee, Aerospace Engineer, Airframe and Propulsion Branch, ANE-171, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7324; fax (516) 794-5531.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a supplemental notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 2008-04-02, amendment 39-15374 (73 FR 8187, February 13, 2008). The existing AD applies to certain Bombardier Model DHC-8-400 series airplanes. That supplemental NPRM was published in the Federal Register on June 26, 2008 (73 FR 36285). That supplemental NPRM proposed to continue to require inspecting all barrel nuts to determine if the barrel nuts have a certain marking, inspecting affected bolts to determine if the bolts are pre-loaded correctly, and replacing all hardware if the pre-load is incorrect. For airplanes on which the pre-load is correct, that supplemental NPRM also proposed to continue to require doing repetitive visual inspections for cracking of the barrel nuts and cradles and replacing all hardware for all cracked barrel nuts. That supplemental NPRM also proposed to continue to require replacing all hardware for certain affected barrel nuts that do not have cracking, which would end the repetitive inspections for those airplanes. In addition, that supplemental NPRM also proposed to continue to provide an optional replacement for all affected barrel nuts. Finally, that supplemental NPRM also proposed to require replacing all affected barrel nuts and applying a certain compound to the affected barrel nuts and bolts.

Comments

We provided the public the opportunity to participate in the development of this AD. No comments have been received on the NPRM or on the determination of the cost to the public.

Conclusion

We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed.

Costs of Compliance

This AD affects about 48 airplanes of U.S. registry.

The actions that are required by AD 2008-04-02 and retained in this AD take about 3 work hours per airplane, at an average labor rate of \$80 per work hour. Based on these figures, the estimated cost of the currently required actions is \$11,520, or \$240 per airplane, per inspection cycle.

Replacement of the hardware of a barrel nut, if required, takes about 12 work hours per airplane, at an average labor rate of \$80 per work hour. Required parts cost about \$800 per barrel nut. Based on these figures, we estimate the cost of a replacement to be \$1,760 per barrel nut.

Application of the compound, if required, takes about 4 work hours per airplane, at an average labor rate of \$80 per work hour. Based on these figures, we estimate the cost of a replacement to be \$320 per application.

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 have 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 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. See the ADDRESSES section for a location to examine the regulatory evaluation.

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 Federal Aviation Administration (FAA) amends § 39.13 by removing amendment 39-15374 (73 FR 8187, February 13, 2008) and by adding the following new airworthiness directive (AD):



2008-18-04 Bombardier, Inc. (Formerly de Havilland, Inc.): Amendment 39-15661. Docket No. FAA-2008-0356; Directorate Identifier 2008-NM-042-AD.

Effective Date

- (a) This AD becomes effective October 14, 2008.

Affected ADs

- (b) This AD supersedes AD 2008-04-02.

Applicability

(c) This AD applies to Bombardier Model DHC-8-400, DHC-8-401, and DHC-8-402 airplanes, certificated in any category; serial numbers 4001 and 4003 through 4176 inclusive.

Unsafe Condition

(d) This AD results from reports of cracking in the barrel nuts at the four primary front spar wing-to-fuselage attachment joints. We are issuing this AD to detect and correct cracking of the barrel nuts at the wing front spar wing-to-fuselage joints, which could result in reduced structural integrity of the wing-to-fuselage attachments and consequent detachment of the wing.

Compliance

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

Restatement of Requirements of AD 2008-04-02 With New Service Information

Inspections and Corrective Actions

(f) Within 50 flight hours after February 13, 2008 (the effective date of AD 2008-04-02), inspect all barrel nuts, part number DSC228-16, to determine if the barrel nuts are identified with a marking of LH7940T SPS 01. Inspect in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used.

(1) If no barrel nuts are identified with a marking of LH7940T SPS 01, no further actions are required by this paragraph.

(2) If any barrel nut is found that is identified with a marking of LH7940T SPS 01, before further flight, inspect the inboard and outboard bolts to determine if the bolts are pre-loaded correctly. Inspect in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used.

(i) If the pre-load is incorrect (i.e., the ring can be rotated), before further flight, replace all hardware at that location in accordance with the Accomplishment Instructions of the alert service bulletin.

(ii) If the pre-load is correct, before further flight, do a visual inspection for cracking of the barrel nuts and cradles in accordance with the Accomplishment Instructions of the alert service bulletin.

(A) If no cracking of the barrel nut and cradle is found, do the applicable action required by paragraph (g) of this AD.

(B) If no cracking of the barrel nut is found and only cracking of the cradle is found, no action is required by this paragraph provided that the applicable corrective action specified in paragraph (g) of this AD is done.

(C) If any cracking of the barrel nut is found, before next flight, replace all hardware only at that location in accordance with the Accomplishment Instructions of the alert service bulletin.

(g) For any barrel nuts on which no cracking of the barrel nut was found during the inspection required by paragraph (f)(2)(ii) of this AD, do the applicable corrective action specified in paragraph (g)(1), (g)(2), (g)(3), (g)(4), or (g)(5) of this AD at the compliance time specified in the applicable paragraph.

(1) If four barrel nuts having no cracking are found, do the actions specified in paragraphs (g)(1)(i), (g)(1)(ii), and (g)(1)(iii) of this AD.

(i) Within 50 flight hours after doing the inspection required by paragraph (f)(2)(ii) of this AD, repeat the inspection specified in paragraph (f)(2) of this AD. Thereafter, repeat the inspection at intervals not to exceed 50 flight hours until the replacement specified in paragraph (g)(1)(ii) of this AD is done.

(ii) Within 100 flight hours after doing the inspection required by paragraph (f)(2)(ii) of this AD, replace all hardware at the left-hand outboard location and the right-hand outboard location in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used. Replacing the barrel nuts on the outboard locations terminates the requirement to do the repetitive inspections specified in paragraph (g)(1)(i) of this AD.

(iii) Within 100 flight hours after doing the replacement required by paragraph (g)(1)(ii) of this AD, repeat the inspection specified in paragraph (f)(2) of this AD for the remaining barrel nuts identified with a marking of LH7940T SPS 01. Thereafter, repeat the inspection at intervals not to exceed 100 flight hours until the replacement of all hardware at those locations is done. Do the inspection and replacement in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used.

(2) If three barrel nuts having no cracking are found, do the actions specified in paragraphs (g)(2)(i), (g)(2)(ii), and (g)(2)(iii) of this AD.

(i) Within 50 flight hours after doing the inspection required by paragraph (f)(2)(ii) of this AD, repeat the inspection specified in paragraph (f)(2) of this AD. Thereafter, repeat the inspection at intervals not to exceed 50 flight hours until the replacement specified in paragraph (g)(2)(ii) of this AD is done.

(ii) Within 100 flight hours after doing the inspection required by paragraph (f)(2)(ii) of this AD, replace all hardware for one affected barrel nut at the outboard location, on the side with two affected barrel nuts, in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used. Replacing the barrel nut on the outboard location terminates the requirement to do the repetitive inspections specified in paragraph (g)(2)(i) of this AD.

(iii) Within 100 flight hours after doing the replacement required by paragraph (g)(2)(ii) of this AD, repeat the inspection specified in paragraph (f)(2) of this AD for the remaining barrel nuts identified with a marking of LH7940T SPS 01. Thereafter, repeat the inspection at intervals not to exceed 100 flight hours until the replacement of all hardware at those locations is done. Do the inspection and replacement in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used.

(3) If two barrel nuts having no cracking are found and both nuts are on the same side, do the actions specified in paragraphs (g)(3)(i), (g)(3)(ii), and (g)(3)(iii) of this AD.

(i) Within 100 flight hours after doing the inspection required by paragraph (f)(2)(ii) of this AD, repeat the inspection specified in paragraph (f)(2) of this AD. Thereafter, repeat the inspection at intervals not to exceed 100 flight hours until the replacement specified in paragraph (g)(3)(ii) of this AD is done.

(ii) Within 500 flight hours after doing the inspection required by paragraph (f)(2)(ii) of this AD, replace all hardware for one affected barrel nut at the outboard location that has two affected barrel nuts in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used. Replacing the barrel nut on the outboard location terminates the requirement to do the repetitive inspections specified in paragraph (g)(3)(i) of this AD.

(iii) Within 100 flight hours after doing the replacement required by paragraph (g)(3)(ii) of this AD, repeat the inspection specified in paragraph (f)(2) of this AD for the remaining barrel nut identified with a marking of LH7940T SPS 01. Thereafter, repeat the inspection at intervals not to exceed 100 flight hours until the replacement of all hardware at that location is done. Do the inspection and replacement in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used.

(4) If two barrel nuts having no cracking are found and are on opposite sides, within 100 flight hours after doing the inspection required by paragraph (f)(2)(ii) of this AD, repeat the inspection specified in paragraph (f)(2) of this AD. Thereafter, repeat the inspection at intervals not to exceed 100 flight hours until the replacement of all hardware at those locations is done. Do the inspection and replacement in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used.

(5) If one barrel nut having no cracking is found, within 100 flight hours after doing the inspection required by paragraph (f)(2)(ii) of this AD, repeat the inspection specified in paragraph (f)(2) of this AD. Thereafter, repeat the inspection at intervals not to exceed 100 flight hours until the replacement of all hardware at that location is done. Do the inspection and replacement in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Revision B, dated March 6, 2008. As of the effective date of this AD, Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, must be used.

Actions Accomplished According to Previous Issue of Alert Service Bulletin

(h) Actions accomplished before February 13, 2008, in accordance with Bombardier Alert Service Bulletin A84-57-19, dated February 1, 2008, are acceptable for compliance with the corresponding actions specified in this AD.

Actions Accomplished According to Bombardier Alert Service Bulletin A84-57-18

(i) For airplanes on which the actions specified in Bombardier Alert Service Bulletin A84-57-18, dated January 16, 2008, were accomplished before February 13, 2008, and on which no barrel nuts were found that were identified with a marking of LH7940T SPS 01: No further action is required by this AD.

Parts Installation

(j) As of February 13, 2008, no person may install a barrel nut, part number DSC228-16, identified with a marking of LH7940T SPS 01, on any airplane.

New Requirement of This AD

Replacement of All Affected Barrel Nuts

(k) For airplanes on which barrel nuts are inspected in accordance with paragraph (g)(1)(iii), (g)(2)(iii), (g)(3)(iii), (g)(4), or (g)(5) of this AD: Within 3,000 flight hours after the effective date of this AD, replace all hardware for all remaining barrel nuts, part number DSC228-16, identified with a marking of LH7940T SPS 01. Do the replacement in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008. Replacement of all hardware for all affected barrel nuts constitutes terminating action for the repetitive inspections of this AD.

(l) For airplanes on which hardware for the barrel nut was replaced in accordance with Bombardier Alert Service Bulletin A84-57-19, dated February 1, 2008; or Revision A, dated February 6, 2008: Within 3,000 flight hours after the effective date of this AD, apply F13, Type 2 corrosion inhibiting compound to the affected bolts and barrel nuts in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008; except if it can be conclusively determined from a review of airplane maintenance records that F13, Type 2 corrosion inhibiting compound was applied to the affected bolts and barrel nuts, then no further action is required by this paragraph.

Special Flight Permit

(m) Special flight permits, as described in Section 21.197 and Section 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199), may be issued to operate the airplane to a location where the requirements of this AD can be accomplished, but concurrence by the Manager, New York Aircraft Certification Office (ACO), FAA, is required prior to issuance of the special flight permit. Before using any approved special flight permits, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO. Special flight permits may be permitted provided that the conditions specified in paragraphs (m)(1), (m)(2), (m)(3), (m)(4), and (m)(5) of this AD are met.

(1) Both the right-hand side and left-hand side of the airplane must have at least one barrel nut that is not within the suspect batch (i.e., barrel nut is not identified with a marking of LH7940T SPS 01). The barrel nuts that are not within the suspect batch must be in good working condition (i.e., no cracking of the barrel nut).

(2) No passengers and no cargo are onboard.

(3) Airplane must operate in fair weather conditions with a low risk of turbulence.

(4) Airplane must operate with reduced airspeed. For further information, contact Bombardier, Q Series 24 Hour Service Customer Response Center, at: Telephone 1-416-375-4000; fax 1-416-375-4539; E-mail: thd.qseries@aero.bombardier.com.

(5) All of the conditions specified in paragraphs (m)(1), (m)(2), (m)(3), and (m)(4) of this AD are on a case-by-case basis. Contact your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO, for assistance.

Alternative Methods of Compliance (AMOCs)

(n)(1) The Manager, New York ACO, 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: Pong Lee, Aerospace Engineer, Airframe and Propulsion Branch, ANE-171, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7324; fax (516) 794-5531. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Related Information

(o) Canadian airworthiness directive CF-2008-11R1, dated May 9, 2008, also addresses the subject of the AD.

Material Incorporated by Reference

(p) You must use Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008; or Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008; as applicable; to perform the actions that are required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) On February 13, 2008 (73 FR 8187, February 13, 2008), the Director of the Federal Register approved the incorporation by reference of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008.

(3) Contact Bombardier, Inc., Bombardier Regional Aircraft Division, 123 Garratt Boulevard, Downsview, Ontario M3K 1Y5, Canada, for a copy of this service information. You may review copies at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or 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 August 18, 2008.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

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