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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0167; Directorate Identifier 2008-NM-029-AD; Amendment 39-15374; AD 2008-04-02]

RIN 2120-AA64

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

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

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Bombardier Model DHC-8-400 series airplanes. This AD 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, this AD requires doing repetitive visual inspections for cracking of the barrel nuts and cradles and replacing all hardware for all cracked barrel nuts. This AD also requires replacement of all hardware for certain affected barrel nuts that do not have cracking, which would end the repetitive inspections for those airplanes. This AD also provides an optional replacement for all affected barrel nuts. 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 February 13, 2008.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of February 13, 2008.

We must receive comments on this AD by March 14, 2008.

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building, Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building, Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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 street address for the Docket Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

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

Transport Canada Civil Aviation (TCCA), which is the airworthiness authority for Canada, notified us that an unsafe condition may exist on certain Bombardier Model DHC-8-400 series airplanes. TCCA advises that during scheduled maintenance, an operator found cracks in the barrel nut at one of the four primary front spar wing-to-fuselage attachment joints. Investigation determined that the cracks were due to hydrogen embrittlement and that the problem is likely restricted to a batch of 166 barrel nuts from one supplier. In addition, another operator has reported finding cracked barrel nuts at three of the four wing front spar wing-to-fuselage joints on one aircraft. All three barrel nuts were from the suspect batch. Cracking of the barrel nuts, if not detected and corrected, could result in reduced structural integrity of the wing-to-fuselage attachments and consequent detachment of the wing.

Relevant Service Information

Bombardier has issued Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008. The service bulletin describes the following procedures:

- Determining whether the inboard and outboard bolts are correctly pre-loaded.
- Replacing all hardware at locations where the pre-load is incorrect.
- Doing a visual inspection of the barrel nut and cradle for cracking.
- Replacing cracked barrel nuts with all new hardware.
- Doing an inspection for certain markings of the barrel nuts.
- Replacing barrel nuts having the affected markings.

TCCA mandated the service bulletin and issued Canadian emergency airworthiness directive CF-2008-11, dated February 5, 2008, to ensure the continued airworthiness of these airplanes in Canada.

FAA's Determination and Requirements of This AD

These airplanes are manufactured in Canada and are type certificated for operation in the United States under the provisions of section 21.29 of the Federal Aviation Regulations (14 CFR 21.29) and

the applicable bilateral airworthiness agreement. Pursuant to this bilateral airworthiness agreement, TCCA has kept the FAA informed of the situation described above. We have examined TCCA's findings, evaluated all pertinent information, and determined that we need to issue an AD for products of this type design that are certificated for operation in the United States.

Therefore, 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.

This AD requires the following actions:

- Inspecting all barrel nuts to determine if the barrel nuts have a marking of LH7940T SPS 01 (all barrel nuts with this marking will also have a yellow dot identifier).
- Inspecting (repetitively) affected bolts to determine if the bolts are pre-loaded correctly.
- Replacing all hardware if the pre-load is incorrect.
- Doing repetitive visual inspections for cracking of the barrel nuts and cradles for airplanes on which the pre-load is correct.
- Replacing all hardware for all cracked barrel nuts.
- Replacing all hardware for certain affected barrel nuts that do not have cracking, which would end the repetitive inspections for those airplanes. This AD also provides an optional replacement for all affected barrel nuts.

Differences Between the AD and Canadian Emergency Airworthiness Directive

The Canadian emergency airworthiness directive recommends accomplishing the inspection of the barrel nuts within 100 flight hours. We have determined, however, that the inspection must be done within 50 flight hours to adequately address the unsafe condition. In developing an appropriate compliance time for all airplanes that are affected by this AD, we considered not only the manufacturer's recommendation, but the degree of urgency associated with addressing the subject unsafe condition, the average utilization of the affected fleet, and the time necessary to perform the required inspections. We have coordinated this difference with TCCA.

We consider this AD interim action. We are currently considering requiring the replacement of all hardware for all barrel nuts identified with a marking of LH7940T SPS 01, as required by the Canadian emergency airworthiness directive. However, the planned compliance time for the replacement would allow enough time to provide notice and opportunity for prior public comment on the merits of the modification. In order to ensure continued operational safety in the interim, this AD requires repetitive inspections for cracking of the suspect barrel nuts every 100 flight hours until the replacement is done.

FAA's Justification and Determination of the Effective Date

Cracking of the barrel nuts at the wing front spar wing-to-fuselage joints could result in reduced structural integrity of the wing-to-fuselage attachments and consequent detachment of the wing. Because of our requirement to promote safe flight of civil aircraft and thus, the critical need to assure the structural integrity of the front spar wing-to-fuselage attachment joints and the short compliance time involved with this action, this AD must be issued immediately.

Because an unsafe condition exists that requires the immediate adoption of this AD, we find that notice and opportunity for prior public comment hereon are impracticable and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments before it becomes effective. However,

we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2008-0167; Directorate Identifier 2008-NM-029-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about 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.

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 the regulation:

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. 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 adding the following new airworthiness directive (AD):



2008-04-02 Bombardier, Inc. (Formerly de Havilland, Inc.): Amendment 39-15374. Docket No. FAA-2008-0167; Directorate Identifier 2008-NM-029-AD.

Effective Date

- (a) This AD becomes effective February 13, 2008.

Affected ADs

- (b) None.

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.

Inspections and Corrective Actions

(f) Within 50 flight hours after the effective date of this AD, 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.

(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.

(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 preload 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. 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.

(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. 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.

(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. 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.

(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.

(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.

Optional Replacement

(h) Replacement of all hardware for all barrel nuts, part number DSC228-16, identified with a marking of LH7940T SPS 01, constitutes terminating action for this AD. Replacement must be done in accordance with the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008.

Actions Accomplished According to Previous Issue of Alert Service Bulletin

(i) Actions accomplished before the effective date of this AD 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

(j) For airplanes on which the actions specified in Bombardier Alert Service Bulletin A84-57-18, dated January 16, 2008, were accomplished before the effective date of this AD 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

(k) As of the effective date of this AD, no person may install a barrel nut, part number DSC228-16, identified with a marking of LH7940T SPS 01, on any airplane.

Special Flight Permit

(l) 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, 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 paragraph (l)(1), (l)(2), (l)(3), (l)(4), and (l)(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: Tel: 1-416-375-4000; Fax: 1-416-375-4539; E-mail: thd.qseries@aero.bombardier.com.

(5) All of the conditions specified in paragraphs (l)(1), (l)(2), (l)(3), and (l)(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)

(m)(1) The Manager, New York Aircraft Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. 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

(n) Canadian emergency airworthiness directive CF-2008-11, dated February 5, 2008.

Material Incorporated by Reference

(o) You must use Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference of this document in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. 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 February 7, 2008.

Kevin Hull,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E8-2747 Filed 2-12-08; 8:45 am]