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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0493; Product Identifier 2019-NM-043-AD; Amendment 39-19762; AD 2019-20-09]

RIN 2120-AA64

Airworthiness Directives; De Havilland Aircraft of Canada Limited (Type Certificate Previously Held by Bombardier, Inc.) Airplanes

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

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2011-18-15, which applied to certain De Havilland Aircraft of Canada Limited Model DHC-8-400 series airplanes. AD 2011-18-15 required initial and repetitive torque checks of the bolt preload; detailed inspection of the barrel nuts and cradle for cracking, pitting, and corrosion if the bolt preload is correct; and replacement of certain hardware if necessary. This AD continues to require those actions. This AD also requires new inspections and replacement of certain hardware, which would terminate the repetitive torque checks and inspections; and removes airplanes from the applicability. This AD was prompted by in-service reports of cracked barrel nuts found at the front spar locations of the wing-to-fuselage attachment joints, and a loose washer in the barrel nut assembly. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective November 27, 2019.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of November 27, 2019.

ADDRESSES: For service information identified in this final rule, contact De Havilland Aircraft of Canada Ltd., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; phone: 416-375-4000; fax: 416-375-4539; email: thd@dehavilland.com; internet: https://dehavilland.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-2019-0493.

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-2019-0493; 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 is 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: Andrea Jimenez, Aerospace Engineer, Airframe and Propulsion Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516-228-7330; fax: 516-794-5531; email: 9-avs-nyaco-cos@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF-2011-24R1, dated January 21, 2019 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for certain De Havilland Aircraft of Canada Limited Model DHC-8-400 series airplanes. 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-2019-0493.

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2011-18-15, Amendment 39-16797 (76 FR 54093, August 31, 2011) ("AD 2011-18-15"). AD 2011-18-15 applied to certain De Havilland Aircraft of Canada Limited Model DHC-8-400 series airplanes. The NPRM published in the Federal Register on July 9, 2019 (84 FR 32664). The NPRM was prompted by in-service reports of cracked barrel nuts found at the front spar locations of the wing-to-fuselage attachment joints, and a loose washer in the barrel nut assembly. The NPRM proposed to continue to require initial and repetitive torque checks of the bolt preload; detailed inspection of the barrel nuts and cradle for cracking, pitting, and corrosion if the bolt preload is correct; and replacement of hardware if necessary. The NPRM also proposed to require new inspections and replacement of certain hardware, which would terminate the repetitive torque checks and inspections; and remove airplanes from the applicability. We are issuing this AD to address cracked barrel nuts and a loose washer in the barrel nut assembly, which could result in failure of the barrel nuts, compromising the structural integrity of the wing-to-fuselage attachments, and possible separation of the wing from the airplane during flight. See the MCAI for additional background information.

Comments

The FAA gave the public the opportunity to participate in developing this final rule. The FAA received no comments on the NPRM or on the determination of the cost to the public.

Explanation of Changes Made to This Final Rule

The FAA has revised this final rule to identify the legal name of the manufacturer as published in the most recent type certificate data sheet (TCDS) for the affected airplane models.

The FAA has revised paragraph (n) of this AD to refer to De Havilland Aircraft of Canada Limited (the current TCDS holder) as the appropriate contact for the referenced repair drawing.

Conclusion

The FAA reviewed the relevant data and determined that air safety and the public interest require adopting this final rule as proposed, with the changes described previously and minor editorial changes. The FAA has 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.

The FAA 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 the following service information.

Service Bulletin A84-57-25, Revision A, dated July 16, 2018. This service information describes procedures for initial and repetitive torque checks of the bolt preload, detailed inspection of the barrel nuts and cradle for cracking, pitting, and corrosion if the bolt preload is correct, and replacement of hardware if necessary.

Service Bulletin 84-57-26, Revision C, dated July 16, 2018. This service information describes procedures for a visual inspection of the saddle washer and retainer for any damage (cracks) and corrosion, and replacement of the existing wing front spar barrel nuts, bolts, and preload indicating washers.

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

The FAA estimates that this AD affects 54 airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated Costs for Required Actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Retained actions from AD 2011-18-15	15 work-hours × $85 per hour = $1,275	$10,492	$11,767	$635,418
New actions	15 work-hours × $85 per hour = $1,275	10,492	11,767	635,418

The FAA has received no definitive data that would enable us to provide cost estimates for the on-condition repairs 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.

The FAA is 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 and associated appliances to the Director of the System Oversight Division.

Regulatory Findings

The FAA 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) Will not affect intrastate aviation in Alaska, 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.

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 removing Airworthiness Directive (AD) 2011-18-15, Amendment 39-16797 (76 FR 54093, August 31, 2011), and adding the following new AD:

2019-20-09 De Havilland Aircraft of Canada Limited (Type Certificate Previously Held by Bombardier, Inc.): Amendment 39-19762; Docket No. FAA-2019-0493; Product Identifier 2019-NM-043-AD.

(a) Effective Date

This AD is effective November 27, 2019.

(b) Affected ADs

This AD replaces AD 2011-18-15, Amendment 39-16797 (76 FR 54093, August 31, 2011) ("AD 2011-18-15").

(c) Applicability

This AD applies to De Havilland Aircraft of Canada Limited Model DHC-8-400, -401, and -402 airplanes, certificated in any category, serial numbers 4001 through 4437 inclusive.

(d) Subject

Air Transport Association (ATA) of America Code 57, Wings.

(e) Reason

This AD was prompted by in-service reports of cracked barrel nuts found at the front spar locations of the wing-to-fuselage attachment joints, and a loose washer in the barrel nut assembly. The FAA is issuing this AD to address cracked barrel nuts and a loose washer in the barrel nut assembly, which could result in failure of the barrel nuts, compromising the structural integrity of the wing-to-fuselage attachments, and possible separation of the wing from the airplane during flight.

(f) Compliance

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

(g) Retained Initial and Repetitive Checks and Inspections, With Revised Service Information

This paragraph restates the requirements of paragraph (g) of AD 2011-18-15, with revised service information. At the applicable time specified in paragraph (g)(1) or (2) of this AD: Do a torque check to determine if the bolt preload is correct, and if the preload is correct, before further flight, do a detailed inspection of each barrel nut and cradle for cracking, pitting or corrosion, in accordance with paragraph 3.B., part A, of the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-25, dated July 20, 2011; or Bombardier Service Bulletin A84-57-25, Revision A, dated July 16, 2018. After the effective date of this AD, only Bombardier Service Bulletin A84-57-25, Revision A, dated July 16, 2018, may be used. Repeat the torque check and, as

applicable, the inspection thereafter at intervals not to exceed 2,000 flight hours or 12 months, whichever occurs first.

(1) For airplanes that have accumulated 1,900 or more total flight hours as of September 15, 2011 (the effective date of AD 2011-18-15), or for which it has been 12 months or more since the date of issuance of the original Canadian airworthiness certificate or the date of issuance of the original Canadian export certificate of airworthiness as of September 15, 2011: Within 100 flight hours or 10 days after September 15, 2011, whichever occurs first.

(2) For airplanes that have accumulated less than 1,900 total flight hours as of September 15, 2011 (the effective date of AD 2011-18-15), and for which it has been less than 12 months since the date of issuance of the original Canadian airworthiness certificate or the date of issuance of the original Canadian export certificate of airworthiness as of September 15, 2011: Prior to the accumulation of 2,000 total flight hours or within 12 months since the date of issuance of the original Canadian standard airworthiness certificate or the date of issuance of the original Canadian export certificate of airworthiness, whichever occurs first.

(h) Retained Corrective Actions for Incorrect Bolt Preload, With Revised Service Information

This paragraph restates the requirements of paragraph (h) of AD 2011-18-15, with revised service information. If any bolt preload is found to be incorrect (i.e., the ring can be rotated during any torque check required by paragraph (g) of this AD), before further flight, replace all hardware at that location (except the saddle washer and retainer) in accordance with paragraph 3.B., part B, of the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-25, dated July 20, 2011; or paragraph 3.B. of the Accomplishment Instructions of Bombardier Service Bulletin 84-57-26, Revision C, dated July 16, 2018. After the effective date of this AD, only Bombardier Service Bulletin 84-57-26, Revision C, dated July 16, 2018, may be used.

(i) Retained Corrective Actions for Barrel Nut/Cradle Discrepancies, With Revised Service Information

This paragraph restates the requirements of paragraph (i) of AD 2011-18-15, with revised service information. If any crack, pitting, or corrosion of the barrel nut or cradle is found during any inspection required by paragraph (g) of this AD, before further flight, replace all hardware at that location (except the saddle washer and retainer) in accordance with paragraph 3.B., part B, of the Accomplishment Instructions of Bombardier Alert Service Bulletin A84-57-25, dated July 20, 2011; or paragraph 3.B. of the Accomplishment Instructions of Bombardier Service Bulletin 84-57-26, Revision C, dated July 16, 2018. After the effective date of this AD, only Bombardier Service Bulletin 84-57-26, Revision C, dated July 16, 2018, may be used.

(j) New Requirement of This AD: Replacement and Visual Inspection

Within 12,000 flight hours or 72 months after the effective date of this AD, whichever occurs first: Do a visual inspection of the saddle washer and retainer for any damage (cracks) or corrosion; and replace the wing front spar barrel nuts, bolts, and preload indicating washers; in accordance with paragraph 3.B. of the Accomplishment Instructions of Bombardier Service Bulletin 84-57-26, Revision C, dated July 16, 2018.

(k) New Corrective Actions for Damage (Cracks) or Corrosion

If any damage (cracks) or corrosion is found during any inspection required by paragraph (j) of this AD: Before further flight, accomplish corrective actions in accordance with the procedures specified in paragraph (p)(2) of this AD.

(l) New Provision of This AD: Terminating Actions for Repetitive Torque Checks and Detailed Inspections

Accomplishment of the applicable actions required by paragraphs (j) and (k) of this AD, at all four barrel nut locations, terminates the repetitive torque checks and detailed inspections of paragraph (g) of this AD.

(m) Parts Installation Prohibition

As of the effective date of this AD, no person may install, on any airplane, a barrel nut having part number DSC228-16.

(n) Retained Special Flight Permit Provisions, With Revised Compliance Language

This paragraph restates the requirements of paragraph (k) of AD 2011-18-15, with revised compliance language. Special flight permits, as described in 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 ACO Branch, FAA, is required before issuance of the special flight permit. Before using any approved special flight permits, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office (FSDO). Operators must request a repair drawing from Bombardier, Inc., or De Havilland Aircraft of Canada Limited, which provides recommendations for a one-time special flight permit. After the effective date of this AD, only De Havilland Aircraft of Canada Limited may provide the repair drawing. The repair drawing will be applicable to the operator's aircraft serial number only. Special flight permits may be permitted provided that the conditions specified in paragraphs (n)(1) through (5) of this AD are met.

(1) Only one barrel nut out of four is cracked, one cradle is cracked, or one washer is loose; all other strut (wing front spar) bolt locations must be free of damage.

(2) The airplane must operate with reduced airspeed not to exceed 180 KIAS (knots indicated air speed). No passengers and no cargo are onboard.

(3) The airplane must not operate in known or forecast turbulence, other than light turbulence.

(4) The airplane descent rate on landing flare-out is not to exceed 5 feet per second.

(5) Heavy braking or hard turning of the airplane upon landing is to be avoided if possible.

(o) Credit for Previous Actions

(1) This paragraph restates the provisions of paragraph (j) of AD 2011-18-15, with revised formatting and updated service information. This paragraph provides credit for torque checks, initial inspections, and replacements required by paragraphs (g) and (h) of this AD, if those actions were performed before the effective date of this AD using the service information specified in paragraphs (o)(1)(i) through (v) of this AD, which is not incorporated by reference in this AD. The repetitive torque checks, and as applicable, the inspections required by paragraph (g) of this AD must be continued at the time specified.

(i) Bombardier Alert Service Bulletin A84-57-19, dated February 1, 2008.

(ii) Bombardier Alert Service Bulletin A84-57-19, Revision A, dated February 6, 2008.

(iii) Bombardier Alert Service Bulletin A84-57-19, Revision B, dated March 6, 2008.

(iv) Bombardier Alert Service Bulletin A84-57-19, Revision C, dated August 20, 2008.

(v) Bombardier Alert Service Bulletin A84-57-19, Revision D, dated August 12, 2011.

(2) This paragraph provides credit for the actions required by paragraphs (h) through (k) of this AD, if those actions were performed before the effective date of this AD using the service information specified in paragraphs (o)(2)(i) through (iii) of this AD. This service information is not incorporated by reference in this AD.

(i) Bombardier Service Bulletin 84-57-26, dated March 21, 2013.

(ii) Bombardier Service Bulletin 84-57-26, Revision A, dated July 18, 2014.

(iii) Bombardier Service Bulletin 84-57-26, Revision B, dated February 26, 2015.

(3) This paragraph provides credit for the actions required by paragraphs (h) and (i) of this AD, if those actions were performed before the effective date of this AD using the service information specified in paragraphs (o)(3)(i) and (ii) of this AD.

(i) Bombardier Alert Service Bulletin A84-57-25, dated July 20, 2011, which was incorporated by reference in AD 2011-18-15.

(ii) Bombardier Service Bulletin A84-57-25, Revision A, dated July 16, 2018, which is incorporated by reference in this AD.

(p) Other FAA AD Provisions

(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; phone: 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 Transport Canada Civil Aviation (TCCA); or De Havilland Aircraft of Canada Limited's TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

(3) AMOCs approved previously for AD 2011-18-15 are approved as AMOCs for the corresponding provisions of this AD.

(q) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian AD CF-2011-24R1, dated January 21, 2019, 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-2019-0493.

(2) For more information about this AD, contact Andrea Jimenez, Aerospace Engineer, Airframe and Propulsion Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516-228-7330; fax: 516-794-5531; email: 9-avs-nyaco-cos@faa.gov.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (r)(4) and (5) of this AD.

(r) 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.

(3) The following service information was approved for IBR on November 27, 2019.

(i) Bombardier Service Bulletin A84-57-25, Revision A, dated July 16, 2018.

(ii) Bombardier Service Bulletin 84-57-26, Revision C, dated July 16, 2018.

(4) For service information identified in this AD, contact De Havilland Aircraft of Canada Ltd., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; phone: 416-375-4000; fax: 416-375-4539; email: thd@dehavilland.com; internet: https://dehavilland.com.

(5) 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.

(6) 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, email fedreg.legal@nara.gov, or go to: http://www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued in Des Moines, Washington, on October 7, 2019.
Michael Kaszycki,
Acting Manager, System Oversight Division,
Aircraft Certification Service.