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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39


RIN 2120–AA64

Airworthiness Directives: Bombardier, Inc., Airplanes

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

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2016–24–03, which applied to certain Bombardier, Inc., Model DHC–8–400 series airplanes. AD 2016–24–03 required repetitive detailed inspections of barrel nuts and cradles, a check of the bolt torque of the preload indicating (PLI) washers, and corrective actions if necessary. This AD retains the requirements of AD 2016–24–03 and requires modifying the airplane by installing a sealing disk to a certain location and replacing certain barrel nuts. We are prompted by reports of cracked and corroded barrel nuts found at the mid-spar location of the horizontal-stabilizer-to-vertical-stabilizer attachment joint, and the issuance of new service information that includes a terminal modification. The NPRM proposed to continue to require repetitive detailed inspections of each barrel nut and cradle, a check of the bolt torque of the PLI washers, and corrective action if necessary. The NPRM also proposed to require modifying the airplane by installing a sealing disk to a certain location and replacing certain barrel nuts. We are issuing this AD to address cracked and corroded barrel nuts, which could compromise the structural integrity of the vertical-stabilizer attachment joints and lead to loss of control of the airplane.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF–2015–13R1, dated June 26, 2017 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for certain Bombardier, Inc., Model DHC–8–400 series airplanes. The MCAI states:

There has been one in-service report of a cracked and corroded barrel nut, part number (P/N) DSC228–12, found at the mid-spar location of the horizontal stabilizer to vertical stabilizer attachment joint. There have also been two other reports of corroded barrel nuts found at mid-spar locations.

Preliminary investigation determined that the cracking is initiated by corrosion. Further investigation confirmed that the corrosion was caused by inadequate cadmium plating on the barrel nuts. Failure of the barrel nuts could compromise the structural integrity of the joint and could lead to loss of control of the aeroplane.

The original version of this [Canadian] AD was issued to mandate the initial and repetitive inspections of the barrel nuts [and cradles for cracks and corrosion] at each of the horizontal stabilizer to vertical stabilizer attachment joints.

Revision 1 of this [Canadian] AD is issued to terminate the repetitive inspection requirement by requiring the incorporation of a modification to install a sealing disc at the middle spar location of the horizontal stabilizer to vertical stabilizer attachment joint, and the replacement of the DSC228 series barrel nuts with B0203073 series barrel nuts that are more resistant to corrosion. The applicability has been changed to account for the introduction of the modifications in production.


EXAMINING THE AD DOCKET


SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2016–24–03, Amendment 39–18720 (81 FR 88623, December 8, 2016) (“AD 2016–24–03”). AD 2016–24–03 applied to certain Bombardier, Inc., Model DHC–8–400 series airplanes. The NPRM published in the Federal Register on March 9, 2018 (83 FR 10408). The NPRM was prompted by reports of cracked and corroded barrel nuts found at the mid-spar location of the horizontal-stabilizer-to-vertical-stabilizer attachment joint, and the issuance of new service information that includes a terminal modification. The NPRM proposed to continue to require repetitive detailed inspections of each barrel nut and cradle, a check of the bolt torque of the PLI washers, and corrective action if necessary. The NPRM also proposed to require modifying the airplane by installing a sealing disk to a certain location and replacing certain barrel nuts. We are issuing this AD to address cracked and corroded barrel nuts, which could compromise the structural integrity of the vertical-stabilizer attachment joints and lead to loss of control of the airplane.

For service information identified in this final rule, contact Bombardier, Inc., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416–375–4000; fax 416–375–4539; email thd.qseries@aero.bombardier.com; internet http://www.bombardier.com. You may view this referenced service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206–231–3195. It is also available on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA–2018–0160.

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Wednesday, October 24, 2018
we are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: ‘‘General requirements.’’ Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

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

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2016–24–03, Amendment 39–18720 (81 FR 88623, December 8, 2016), and adding the following new AD:


(a) Effective Date

This AD is effective November 28, 2018.

(b) Affected ADs

This AD replaces AD 2016–24–03, Amendment 39–18720 (81 FR 88623, December 8, 2016) ("AD 2016–24–03").

(c) Applicability

This AD applies to Bombardier, Inc., Model DHC–8–400, -401 and -402 airplanes, certificated in any category, serial numbers 4001 and subsequent.

(d) Subject

Airworthiness Association (ATA) of America Code 55, Stabilizers.

(e) Reason

This AD was prompted by reports of cracked and corroded barrel nuts found at the mid-spar location of the horizontal-stabilizer-to-vertical-stabilizer attachment joint, and the issuance of new service information that includes a terminal modification. We are issuing this AD to address cracked and corroded barrel nuts, which could compromise the structural integrity of the vertical-stabilizer attachment joints and lead to loss of control of the airplane.

(f) Compliance

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

(g) Retained Detailed Inspection of Barrel Nuts for Cracks and Corrosion, With No Changes

This paragraph restates the requirements of paragraphs (g)(1) and (g)(2) of AD 2016–24–03, with no changes.

(1) For airplanes that have accumulated 5,400 flight hours or more, or have been in service 32 months or more since the date of issuance of the original certificate of airworthiness or the date of issuance of the original export certificate of airworthiness, as of January 12, 2017 (the effective date of AD 2016–24–03): Within 600 flight hours or 4 months, whichever occurs first after January 12, 2017, do a detailed visual inspection for signs of cracks and corrosion of the barrel nut and cradle, in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Alert Service Bulletin 84–55–04, Revision C, dated May 3, 2016.

(2) For airplanes that have less than 5,400 flight hours, and have been in-service for less than 32 months since the date of issuance of the original certificate of airworthiness or the date of issuance of the original export certificate of airworthiness, as of January 12, 2017: Before the accumulation of 6,000 total flight hours or 36 months since the date of issuance of the original certificate of airworthiness or the date of issuance of the original export certificate of airworthiness, whichever occurs first, do a detailed visual inspection of the barrel nut for signs of cracks and corrosion of the barrel nut and cradle, in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Alert Service Bulletin 84–55–04, Revision C, dated May 3, 2016.

(b) Retained Corrective Actions, Detailed Inspection, and Repetitive Inspections, With New Service Information, Reference to Terminating Action, and Reference to Corrective Actions

This paragraph restates the requirements of paragraph (h) of AD 2016–24–03, with new service information and terminating action. Depending on the findings of any inspection required by paragraphs (g) and (j) of this AD, do the applicable actions in paragraphs (h)(1), (h)(2), (h)(3), and (h)(4) of this AD. Accomplishment of the actions required by paragraphs (l) and (m) of this AD, as applicable, terminates the requirements of this paragraph.

(1) If any barrel nut or cradle is found cracked or broken, before further flight, replace the barrel nut and associated hardware, in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Service Bulletin 84–55–08, Revision A, dated August 2, 2017.


(ii) Within 600 flight hours or 4 months, whichever occurs first, after the replacement of a cracked barrel nut, replace the remaining barrel nuts and their associated hardware at the horizontal-stabilizer-to-vertical-stabilizer attachment joints, in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Service Bulletin 84–55–08, Revision A, dated August 2, 2017.

(2) If any corrosion is found on any barrel nut on the front or rear-spar joints, before further flight, replace the barrel nut in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Service Bulletin 84–55–08, Revision A, dated August 2, 2017.

(3) If any corrosion above level 1, as defined in Bombardier Alert Service Bulletin 84–55–04, Revision C, dated May 3, 2016, is found on a barrel nut at the mid-spar joint, before further flight, replace the barrel nut and accomplish corrective actions in accordance with the procedures specified in paragraph (q)(2) of this AD.

(4) If all corrosion found is at level 1 or below, as defined in Bombardier Alert Service Bulletin 84–55–04, Revision C,
(m) New Requirement of This AD: Replacement of DSC228 Series Barrel Nuts

For Bombardier, Inc., Model DHC–8–400, –401 and –402 airplanes, serial numbers 4001 through 4524 inclusive: Within 8,000 flight hours or 48 months, whichever occurs first, after the effective date of this AD, replace all DSC228 series barrel nuts at the horizontal-stabilizer-to-vertical-stabilizer attachment joints with B0203073 series barrel nuts in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Service Bulletin 84–55–08, Revision A, dated August 2, 2017.

Accomplishment of the actions required by paragraphs (l) and (m) of this AD, as applicable, terminates the requirements of paragraphs (h), (i), and (j) of this AD.

(n) Parts Installation Prohibition

After modification of an airplane as required by paragraphs (l) and (m) of this AD, no person may install a DSC228 series barrel nut at the horizontal-stabilizer-to-vertical-stabilizer attachment joint on the modified airplane.

(o) Terminating Actions for Paragraphs (h), (i), and (j) of This AD

Accomplishment of the actions required by paragraphs (l) and (m) of this AD, as applicable, terminates the requirements of paragraphs (h), (i), and (j) of this AD.

(p) Credit for Previous Actions

(1) This paragraph provides credit for actions required by paragraphs (g)(1), (g)(2), (h)(1), (h)(1)(i), (h)(1)(ii), (h)(2), (b)(3), (b)(4), (i), and (k) of this AD, if those actions were performed before the effective date of this AD using the service information identified in paragraphs (p)(1)(i) through (p)(1)(iii) of this AD.

(i) Bombardier Alert Service Bulletin A84–55–04, dated May 21, 2015, which is not incorporated by reference in this AD.

(ii) Bombardier Alert Service Bulletin A84–55–04, Revision A, dated June 2, 2015, which is not incorporated by reference in this AD.

(iii) Bombardier Alert Service Bulletin A84–55–04, Revision A, dated July 30, 2015, which is not incorporated by reference in this AD.

(2) This paragraph provides credit for actions required by paragraphs (h)(1), (h)(1)(i), (h)(1)(ii), (h)(2), and (k) of this AD, if those actions were performed before the effective date of this AD using the service information identified in paragraphs (p)(2)(i) and (p)(2)(ii) of this AD.

(i) Bombardier Alert Service Bulletin 84–55–08, dated January 27, 2017, which is not incorporated by reference in this AD.


(q) 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.

For airplane as required by paragraphs (l) and (m) of this AD, as applicable, terminates the requirements of paragraphs (h), (i), and (j) of this AD.
DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39


RIN 2120–AA64

Airworthiness Directives: Viking Air Limited Model DHC–3 Airplanes

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

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for Viking Air Limited Model DHC–3 airplanes. This AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as pitting corrosion on the shank of the wing strut attach bolts. We are issuing this AD to require actions to address the unsafe condition on these products.

DATES: This AD is effective November 28, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of November 28, 2018.


For service information identified in this AD, contact Viking Air Limited Technical Support, 1959 De Havilland Way, Sidney, British Columbia, Canada, V8L 5V5; telephone: (North America) (800) 663–8444; fax: (250) 656–0673; email: technical.support@vikingair.com; internet: http://www.vikingair.com/support/service-bulletins. You may view this referenced service information at the FAA, Policy and Innovation Division, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at NARA, call (816) 220–5944. It is also available on the internet at http://www.regulations.gov by searching for Docket No. FAA–2018–0189.

FOR FURTHER INFORMATION CONTACT: Aziz Ahmed, Aerospace Engineer, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone: (516) 287–7329; fax: (516) 794–5531; email: aziz.ahmed@faa.gov.

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 Viking Air Limited Model DHC–3 airplanes. The NPRM was published in the Federal Register on March 13, 2018 (83 FR 10809). The NPRM proposed to correct an unsafe condition for the specified products and was based on MCAI originated by an aviation authority of another country. The MCAI states:

Pitting corrosion has been found on the shank of the wing strut attach bolts: C3W114–3, C3W129–3 and C3W128–3. These bolts are manufactured using a standard AN12 bolt. Metallurgical evaluation concluded that pitting corrosion was present on the affected AN12 bolts prior to forming of the bolt head and threads. The pitting and un-plated voids could cause a surface condition that may have a detrimental effect on fatigue and corrosion resistance, leading to bolt failure and consequent failure of the wing.

Viking has not been able to confirm the affected batch numbers or specific manufacture date range. New wing strut bolts manufactured after 21 March 2016 are affected AN 12 bolts prior to forming of the bolt head and thread. Corrosion pitting was found on airplanes when doing the inspections per Transport Canada’s finding of an unsafe condition.

For the corrective actions in a service bulletin to become mandatory and to correct the unsafe condition, the FAA must issue an AD. Based on the manufacturer’s metallurgical evaluation, the pitting corrosion was present on the affected AN 12 bolts prior to forming of the bolt head and thread. Corrosion pitting was found on airplanes when\n
Request To Issue SAIB Instead of an AD

Christopher Campbell requested that we withdraw the AD and issue a special airworthiness information bulletin (SAIB) instead. The commenter stated this AD is unnecessary and redundant since the manufacturer has already addressed this issue with a mandatory service bulletin and all affected bolts should now be removed. The commenter stated the affected bolts are 3/4-inch diameter bolts and only the surface cadmium plating is compromised, not the strength of the bolt. The commenter also disagreed with the manufacturer that the compromised cadmium plating would cause accelerated corrosion because the bolts are treated with anti-corrosion grease on installation. The commenter further stated an AD is unnecessary because the defect would be obvious to any installing mechanic. Lastly, the commenter stated that the proposed AD does little to further enhance safety but adds unwelcome recordkeeping and cost for owners.

We do not agree. We concur with Transport Canada’s finding of an unsafe condition, as explained in Transport Canada AD No. CF–2017–11, dated March 23, 2017. An SAIB would not be an appropriate solution. An SAIB contains information and recommended actions that are voluntary and not regulatory. Moreover, an SAIB is issued only for airworthiness concerns that do not rise to the level of an unsafe condition. Similarly, while an operator may incorporate the procedures described in a manufacturer’s service bulletin into its maintenance program, not all operators are required to do so. For the corrective actions in a service bulletin to become mandatory and to correct the unsafe condition, the FAA must issue an AD. Based on the manufacturer’s metallurgical evaluation, the pitting corrosion was present on the affected AN 12 bolts prior to forming of the bolt head and thread. Corrosion pitting was found on airplanes when doing the inspections per Transport Canada’s AD CF–2017–11. Specifically, the pitting was discovered on the bolt shanks of both wing strut fitting to wing spar lug bolts. Relying on an assumption that the corrosion will be obvious at the time of bolts installation, as suggested by the commenter, is not a reliable method to correct an unsafe condition. We have not changed this AD based on this comment.