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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2006-26050; Directorate Identifier 2006-NM-078-AD; Amendment 39-14890; AD 2007-02-03]

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 revising the airplane flight manual (AFM) to advise the flightcrew of appropriate procedures to follow in the event that a main landing gear (MLG) fails to extend following a gear-down selection. That AD also currently requires repetitive replacement of the left and right MLG uplock assemblies with new assemblies; and an inspection of the left and right MLG uplock rollers for the presence of an inner low friction liner, and corrective actions if necessary. This new AD revises the requirement for replacing the left and right MLG uplock assemblies by allowing replacement with alternative parts. For a certain MLG uplock assembly, this new AD requires repetitive inspections of the uplock hatch lower jaw for the presence of a wear groove and replacement with an improved part if necessary. For a certain MLG uplock assembly, this new AD requires repetitive inspections of the uplock roller to ensure that it rotates freely and replacement with a new part if necessary. This new AD allows optional replacement of the left and right MLG uplock assemblies with improved parts, which ends the requirements of the AFM revision and repetitive replacement and inspections. This new AD removes airplanes from the applicability. This AD results from development of a terminating action. We are issuing this AD to ensure that the flightcrew has the procedures necessary to address failure of an MLG to extend following a gear-down selection; and to detect and correct such failure, which could result in a gear-up landing and possible injury to passengers and crew.

DATES: This AD becomes effective March 1, 2007.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of March 1, 2007.

On April 23, 2002 (67 FR 19101, April 18, 2002), the Director of the Federal Register approved the incorporation by reference of Bombardier DHC-8 Alert Service Bulletin A84-32-15, dated February 4, 2002.

ADDRESSES: You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC.

Contact Bombardier, Inc., Bombardier Regional Aircraft Division, 123 Garratt Boulevard, Downsview, Ontario M3K 1Y5, Canada, for service information identified in this AD.

FOR FURTHER INFORMATION CONTACT: Ezra Sasson, Aerospace Engineer, Systems and Flight Test Branch, ANE-172, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7320; fax (516) 794-5531.

SUPPLEMENTARY INFORMATION:

Examining the Docket

You may examine the airworthiness directive (AD) docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the street address stated in the ADDRESSES section.

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that supersedes AD 2002-08-05, amendment 39-12713 (67 FR 19101, April 18, 2002). The existing AD applies to certain Bombardier Model DHC-8-400 series airplanes. That NPRM was published in the Federal Register on October 13, 2006 (71 FR 60450). That NPRM proposed to continue to require revising the airplane flight manual (AFM) to advise the flightcrew of appropriate procedures to follow in the event that a main landing gear (MLG) fails to extend following a gear-down selection. That NPRM also proposed to continue to require repetitive replacement of the left and right MLG uplock assemblies with new assemblies; and an inspection of the left and right MLG uplock rollers for the presence of an inner low friction liner, and corrective actions if necessary. That NPRM also proposed to revise the requirement for replacing the left and right MLG uplock assemblies by allowing replacement with alternative parts. For a certain MLG uplock assembly, that NPRM also proposed to require repetitive inspections of the uplock hatch lower jaw for the presence of a wear groove and replacement with an improved part if necessary. For a certain MLG uplock assembly, that NPRM also proposed to require repetitive inspections of the uplock roller to ensure that it rotates freely and replacement with a new part if necessary. That NPRM also proposed to allow optional replacement of the left and right MLG uplock assemblies with improved parts, which would end the requirements of the AFM revision and repetitive replacements and inspections. That NPRM also proposed to remove airplanes from the applicability.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the one comment that has been received on the NPRM.

Request To Provide Additional Terminating Action

Horizon Air requests that we revise paragraph (k) of the NPRM to provide an additional terminating action by allowing replacement with a new or overhauled uplock assembly having part number (P/N) 46500-9. Paragraph (k) of the NPRM proposed only to allow replacement of uplock assemblies having P/N 46500-3 or -5 with new or overhauled uplock assemblies having P/N 46500-7.

As justification, the commenter states that P/N 46500-9 is the latest version of the uplock assembly. The commenter also points out that Bombardier DHC-8 Service Bulletin 84-32-46, dated July 4, 2006, provides instructions for modifying an uplock assembly having P/N 46500-7 and reidentifying it as P/N 46500-9.

We agree to revise paragraph (k) of this AD to provide P/N 46500-9 as a terminating action. We have also revised paragraphs (g) and (i)(1) of this AD to allow replacement with P/N 46500-9. Bombardier DHC-8 Service Bulletin 84-32-46 modifies an uplock assembly having P/N 46500-7 by improving retention of the proximity sensor target. Therefore, we have determined that a new or overhauled uplock assembly having P/N 46500-9 is also adequate for addressing the unsafe condition of this AD.

Conclusion

We have carefully reviewed the available data, including the comment that has been received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

The following table provides the estimated costs, at an average labor rate of \$80 per work hour, for U.S. operators to comply with this AD.

Estimated Costs

Action	Work hours	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
AFM revision (required by AD 2002-08-05)	1	None	\$80	21	\$1,680
Replacement of uplock assemblies (required by AD 2002-08-05)	4	\$0 ¹	\$320, per replacement cycle	21	\$6,720 per replacement cycle
Inspection of uplock rollers (required by AD 2002-08-05)	1	None	\$80	21	\$1,680
Inspections of uplock assemblies and uplock rollers (new action)	5	None	\$400	21	\$8,400
Terminating action (new action)	4	\$0 ¹	\$320	21	\$6,720

\1\ The parts manufacturer states that it will supply required parts to operators at no cost.

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 39-12713 (67 FR 19101, April 18, 2002) and by adding the following new airworthiness directive (AD):



2007-02-03 Bombardier, Inc. (Formerly de Havilland, Inc.): Amendment 39-14890. Docket No. FAA-2006-26050; Directorate Identifier 2006-NM-078-AD.

Effective Date

- (a) This AD becomes effective March 1, 2007.

Affected ADs

- (b) This AD supersedes AD 2002-08-05.

Applicability

(c) This AD applies to Bombardier Model DHC-8-400 series airplanes, certificated in any category; serial numbers 4001 and 4003 through 4087 inclusive; equipped with main landing gear (MLG) uplock assembly part numbers (P/Ns) 46500-3 and -5.

Unsafe Condition

(d) This AD results from development of a terminating action. We are issuing this AD to ensure that the flightcrew has the procedures necessary to address failure of an MLG to extend following a gear-down selection; and to detect and correct such failure, which could result in a gear-up landing and possible injury to passengers and crew.

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.

Requirements of AD 2002-08-05

Revision of FAA-Approved Airplane Flight Manual (AFM)

(f) Within 3 days after April 23, 2002 (the effective date of AD 2002-08-05), amend all copies of the FAA-approved Bombardier Series 400 AFM, PSM 1-84-1A (for Models 400, 401, and 402), by adding the following procedure to the Limitations section of the AFM and opposite page 4-21-1 of the AFM; and advise all flightcrew members of these changes. (The revision may be accomplished by inserting a copy of this AD into the Limitations section of the AFM and affected paragraphs of the AFM.):

“If ONE main landing gear fails to extend after performing landing gear extension per normal procedures given in paragraph 4.3.7 and alternate extension procedures per paragraph 4.21.1 of the AFM:

1. Visually confirm that the affected gear has not extended and that the associated doors have opened.
2. Ensure No. 2 hydraulic system pressure and quantity are normal and the following landing gear advisory lights are illuminated: selector lever amber, gear green locked down (nose and non-affected main gear), red gear unlocked (affected main gear) and all amber doors open.
3. NOSE L/G RELEASE handle—Return to the stowed position.
4. LANDING GEAR ALTERNATE EXTENSION door—Close fully.
5. MAIN L/G RELEASE handle—Return to the stowed position.
6. LANDING GEAR ALTERNATE RELEASE door—Close fully.
7. LANDING GEAR lever—DN.
8. L/G DOWN SELECT INHIBIT SW—Normal and guarded. Check amber doors open advisory lights out (nose and non-affected main gear) and LDG GEAR INOP caution light out.
9. LANDING GEAR lever—UP Check all gear, door and LANDING GEAR lever advisory lights out.
10. With minimum delay, LANDING GEAR lever—DN. Check 3 green gear locked down advisory lights illuminate, all amber doors open, red gear unlocked and selector lever amber advisory lights out.
11. Items 9 and 10 may be repeated in an effort to achieve 3 gear down and locked.

CAUTION

Should the LDG GEAR INOP caution light illuminate, or loss of no. 2 hydraulic system pressure or quantity, or any abnormality in landing gear system indication other than those associated with the affected main landing gear be experienced, see paragraph 4.21.1 ALTERNATE LANDING GEAR EXTENSION.”

Accomplishing the actions specified in paragraph (k) of this AD terminates the requirements of this paragraph, and after the replacement has been done, the AFM limitation may be removed from the AFM.

Replacement of Uplock Assembly With New Replacement Parts and Requirements

(g) At the later of the times specified in paragraph (g)(1) or (g)(2) of this AD: Replace the left and right MLG uplock assemblies, P/N 46500-3, with new or overhauled uplock assemblies having P/N 46500-3, -5, -7, or -9 according to a method approved by either the Manager, New York Aircraft Certification Office (ACO), FAA; or Transport Canada Civil Aviation (TCCA) (or its delegated agent). Using Tasks 32-31-21-000-801 and 32-31-21-400-801 of Chapter 32-31-21 of Bombardier Q400 Dash 8 Aircraft Maintenance Manual (AMM), PSM 1-84-2, is one approved method. For any uplock assembly having P/N 46500-3, repeat the replacement thereafter at intervals not to exceed 2,500 flight hours or 3,000 flight cycles, whichever occurs earlier. For any uplock assembly having P/N 46500-5, do the actions required by paragraph (i) of this AD. Replacing an uplock assembly with a new or overhauled uplock assembly having P/N 46500-7 or -9 terminates the requirements of this paragraph, for that uplock assembly only.

(1) Before the accumulation of 2,500 total flight hours or 3,000 total flight cycles on an uplock assembly, whichever occurs earlier; or

(2) Within 14 days after April 23, 2002.

One-Time Inspection of MLG Uplock Rollers With Added Inspection Definition

(h) Within 30 days after April 23, 2002, do a general visual inspection of the left and right MLG uplock rollers for the presence of an inner low friction (black-colored) liner, in accordance with the Accomplishment Instructions of Bombardier DHC-8 Alert Service Bulletin A84-32-15, dated February 4, 2002; and, before further flight, do the actions required by paragraph (h)(1) or (h)(2) of this AD.

Note 1: For the purposes of this AD, a general visual inspection is: “A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to ensure visual access to all surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or droplight and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked.”

Corrective Actions

(1) If a low friction liner is present, reinstall the existing uplock roller; or install a new uplock roller, P/N 46575-1, having a low friction liner; on the shock strut of the MLG in accordance with the service bulletin.

(2) If a low friction liner is not present, replace the existing uplock roller with a new uplock roller, P/N 46575-1, having a low friction liner, on the shock strut of the MLG in accordance with the service bulletin. After the effective date of this AD, if the low friction liner is not present, replace the uplock roller in accordance with paragraph (i)(2) of this AD.

Note 2: Bombardier DHC-8 Alert Service Bulletin A84-32-15, dated February 4, 2002, references Chapter 32-11-01 of Bombardier Q400 Dash 8 AMM, PSM 1-84-2, as an additional source of service information for procedures to replace an MLG uplock roller.

New Requirements of This AD

Repetitive Inspections and Replacement if Necessary of a Certain Uplock Assembly

(i) For any MLG uplock assembly having P/N 46500-5, do the inspections specified in paragraphs (i)(1) and (i)(2) of this AD at the later of the following compliance times: Before the accumulation of 2,500 total flight hours or 3,000 total flight cycles on the uplock assembly, whichever occurs first; or within 90 days after the effective date of this AD. Repeat the inspections thereafter at intervals not to exceed 400 flight hours or 480 flight cycles, whichever occurs first. Replacement of an uplock assembly in accordance with paragraph (i)(1) of this AD terminates the repetitive inspections of paragraphs (i)(1) and (i)(2) of this AD, for that uplock assembly only.

(1) Do a detailed dimensional inspection of the surface of the uplock hatch lower jaw for the presence of a wear groove and measure the wear groove depth to an accuracy of 0.001 inch, according to a method approved by either the Manager, New York ACO; or TCCA (or its delegated agent). Using Task 32-31-21-220-801 of the Bombardier Q400 Dash 8 AMM, PSM 1-84-2, is one approved method. If the groove depth exceeds 0.007 inch, before further flight, replace the uplock assembly with a new or serviceable uplock assembly, P/N 46500-7 or -9, according to a method approved by either the Manager, New York ACO; or TCCA (or its delegated agent). Using Tasks 32-31-21-000-801 and 32-31-21-400-801 of Chapter 32-31-21 of the Bombardier Q400 Dash 8 AMM, PSM 1-84-2, is one approved method.

(2) Do a general visual inspection of the uplock roller, P/N 46575-1, of the MLG uplock assembly to ensure that it rotates freely. If the uplock roller does not rotate freely, before further flight, replace the uplock roller with a new uplock roller, P/N 46575-1, in accordance with Bombardier Temporary Revision (TR) 32-191 and Bombardier TR 32-192, both dated May 29, 2006, both to Bombardier Q400 Dash 8 AMM.

(j) When the information in Bombardier TR 32-191 and Bombardier TR 32-192, both dated May 29, 2006, is included in the AMM, the AMM is approved as an acceptable method of compliance for the replacement specified in paragraph (i)(2) of this AD.

Optional Terminating Action for AFM Revision, Repetitive Replacements, and Repetitive Inspections

(k) Replacing the left and right MLG uplock assemblies having P/N 46500-3 or -5 with new or overhauled uplock assemblies having P/N 46500-7 or -9 according to a method approved by either the Manager, New York Aircraft Certification Office (ACO), FAA; or Transport Canada Civil Aviation (TCCA) (or its delegated agent); terminates the requirements of paragraphs (f), (g), (h), and (i) of this AD, as applicable. Using Tasks 32-31-21-000-801 and 32-31-21-400-801 of Chapter 32-31-21 of Bombardier Q400 Dash 8 Aircraft Maintenance Manual (AMM), PSM 1-84-2, is one approved method. After the replacements have been done, the AFM limitation required by paragraph (f) of this AD may be removed from the AFM.

Alternative Methods of Compliance (AMOCs)

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

(2) Before using any AMOC approved in accordance with § 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

(3) AMOCs approved previously in accordance with AD 2002-08-05, are approved as AMOCs for the corresponding provisions of this AD.

Related Information

(m) Canadian airworthiness directive CF-2002-13R2, dated May 19, 2005, also addresses the subject of this AD.

Material Incorporated by Reference

(n) You must use the service information listed in Table 1 of this AD to perform the actions that are required by this AD, unless the AD specifies otherwise.

Table 1 – Material Incorporated by Reference

Service Information	Revision Level	Date
Bombardier DHC-8 Alert Service Bulletin A84-32-15	Original	February 4, 2002

Service Information	Revision Level	Date
Bombardier Temporary Revision 32-191 to the Bombardier Q400 Dash 8 Airplane Maintenance Manual, PSM 1-84-2	Original	May 29, 2006
Bombardier Temporary Revision 32-192 to the Bombardier Q400 Dash 8 Airplane Maintenance Manual, PSM 1-84-2	Original	May 29, 2006

(1) The Director of the Federal Register approved the incorporation by reference of Bombardier Temporary Revision 32-191, dated May 29, 2006, to the Bombardier Q400 Dash 8 Aircraft Maintenance Manual; and Bombardier Temporary Revision 32-192, dated May 29, 2006, to the Bombardier Q400 Dash 8 Aircraft Maintenance Manual; in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) On April 23, 2002 (67 FR 19101, April 18, 2002), the Director of the Federal Register approved the incorporation by reference of Bombardier DHC-8 Alert Service Bulletin A84-32-15, dated February 4, 2002.

(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 Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov>; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the NARA, call (202) 741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on January 5, 2007.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E7-909 Filed 1-24-07; 8:45 am]