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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0734; Directorate Identifier 2012-SW-080-AD; Amendment 39-18494; AD 2016-08-17]

RIN 2120-AA64

Airworthiness Directives; Bell Helicopter Textron Canada Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2010-19-51 for Bell Helicopter Textron Canada (Bell) Model 222, 222B, 222U, 230, and 430 helicopters. AD 2010-19-51 required inspecting parts of the main rotor hydraulic servo actuator (servo actuator) for certain conditions and replacing any unairworthy parts before further flight. This new AD requires installing a servo actuator with a new stainless steel piston rod. This AD was prompted by a collective servo actuator malfunction. We are issuing this AD to detect corrosion on a piston rod, which could result in failure of the servo actuator and consequent loss of helicopter control.

DATES: This AD is effective May 31, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain document listed in this AD as of December 9, 2010 (75 FR 71540, November 24, 2010).

ADDRESSES: For service information identified in this final rule, contact Bell Helicopter Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J1R4; telephone (450) 437-2862 or (800) 363-8023; fax (450) 433-0272; or at <http://www.bellcustomer.com/files/>. You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. It is also on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2013-0734.

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-2013-0734; 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 Transport Canada Civil Aviation (TCCA) AD, any incorporated-by-reference information, the

economic evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Matt Wilbanks, Aviation Safety Engineer, Regulations and Policy Group, Rotorcraft Directorate, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email matt.wilbanks@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

On August 12, 2013, we issued a notice of proposed rulemaking (NPRM) that was published in the Federal Register on August 20, 2013 (78 FR 51123). The NPRM proposed to remove AD 2010-19-51, Amendment 39-16523 (75 FR 71540, November 24, 2010) and add a new AD for Bell Model 222, 222B, 222U, 230, and 430 helicopters. The NPRM proposed to require inspecting servo actuator part number (P/N) 222-382-001-107 using a 10X or higher magnifying glass to determine whether the piston rod has any pitting or penetration of the base metal. If the piston rod had any pitting or penetration of the base metal, the NPRM proposed replacing servo actuator P/N 222-382-001-107 with servo actuator P/N 222-382-001-111 or P/N 222-382-001-111FM. Thereafter, the NPRM proposed overhauling servo actuator P/N 222-382-001-111 or P/N 222-382-001-111FM at intervals not to exceed 10 years or 10,000 hours time-in-service (TIS), whichever comes first. The NPRM was prompted by AD No. CF-2010-29R1, dated July 26, 2012, issued by TCCA, which is the aviation authority for Canada. TCCA AD No. CF-2010-29R1 requires an inspection of the servo actuator and either overhauling or replacing the piston rod with a stainless steel piston rod. Replacement of the piston rod extends the overhaul interval of the servo actuator to 10,000 hours TIS or 10 years, whichever comes first. TCCA AD No. CF-2010-29R1 allows different compliance times for overhaul or replacement of the piston rod, depending on the condition of the piston rod when inspected.

After the NPRM was published, we received comments from Bell requesting we mandate replacement of servo actuator P/N 222-382-001-107 with servo actuator part number P/N 222-382-001-111 even if no pitting or penetration of the base metal is found during the inspection, in accordance with the replacement provisions in its Alert Service Bulletin (ASB) 430-11-46, Revision A, dated June 20, 2012. In light of those comments, we determined that our AD should retain all of the inspection requirements of AD 2010-19-51 and also include compliance times specified in Revision A of the ASB for replacing servo actuator P/N 222-382-001-107 with servo actuator P/N 222-382-001-111 or -111FM. Therefore, we revised the proposed actions accordingly. Because those changes expanded the scope of the original NPRM, we determined that it was necessary to reopen the comment period to provide additional opportunity for the public to comment. A supplemental notice of proposed rulemaking (SNPRM) was published in the Federal Register on June 16, 2015 (80 FR 34332).

Since the SNPRM was issued, the FAA Southwest Regional Office has relocated and a group email address has been established for requesting an FAA Alternative Method of Compliance for a helicopter of foreign design. We have updated this information throughout this AD.

We have also removed the proposed paragraph (f)(7) from the Required Actions section, which would have required overhauling servo actuator P/N 222-382-001-111 or P/N 222-382-001-111FM at intervals not to exceed 10 years or 10,000 hours TIS, whichever occurs first. Because replacement of servo actuator P/N 222-382-001-107 with P/N 222-382-001-111 or -111FM corrects the unsafe condition, we have determined that AD action for this overhaul requirement is not appropriate.

Comments

We gave the public the opportunity to participate in developing this AD, but we received no comments on the SNPRM (80 FR 34332, June 16, 2015).

FAA's Determination

These helicopters have been approved by the aviation authority of Canada and are approved for operation in the United States. Pursuant to our bilateral agreement with Canada, TCCA, its technical representative, has notified us of the unsafe condition described in the TCCA AD. We are issuing this AD because we evaluated all information provided by TCCA and determined the unsafe condition exists and is likely to exist or develop on other helicopters of these same type designs and that air safety and the public interest require adopting the AD requirements as proposed.

Differences Between This AD and the TCCA AD

The TCCA AD requires inspecting each servo actuator to determine the condition of the piston rod assembly no later than 5 hours upon receiving the original issue of its AD. This AD requires inspecting each servo actuator to determine the condition of the piston rod assembly before further flight.

Related Service Information Under 1 CFR Part 51

We reviewed Woodward HRT Service Bulletin 141600-67-02, dated August 18, 2010, which provides instructions for disassembling the servo actuator and for cleaning and inspecting the piston rod and nut. 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.

Other Related Service Information

We also reviewed Bell ASB 222-11-111 for Model 222 and 222B helicopters, ASB 222U-11-82 for Model 222U helicopters, ASB 230-11-43 for Model 230 helicopters, and ASB 430-11-46 for Model 430 helicopters, all Revision A and all dated June 22, 2012. The ASBs contain, and require compliance with, Woodward HRT Service Bulletin 141600-67-03, dated February 14, 2012, to upgrade the servo actuator by replacing the piston rod and then re-identifying the servo actuator dash number with "-111FM." The compliance time for upgrading the servo actuator varies depending on the results of the inspections required by Woodward HRT Service Bulletin 141600-67-02, dated August 18, 2010. The Bell ASBs also provide an alternative inspection procedure for servo actuator P/N 222-382-001-107 that has not reached certain hours TIS and where the servo actuator cannot be upgraded. TCCA classified these ASBs as mandatory and issued AD No. CF-2010-29R1, dated July 26, 2012, to ensure the continued airworthiness of these helicopters.

Costs of Compliance

We estimate that this AD affects 146 helicopters of U.S. Registry and that labor costs average \$85 a work-hour. Based on these estimates, we expect the following costs:

- Inspecting a servo actuator requires 4 work-hours per actuator for a labor cost of \$340. No parts are needed for a total cost of \$1,020 per helicopter and \$148,920 for the U.S. fleet given 3 actuators per helicopter.
- Replacing a servo actuator requires 8 work-hours for a labor cost of \$680. Parts cost \$35,700 for a total cost of \$36,380 per actuator.

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),
- (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) 2010-19-51, Amendment 39-16523 (75 FR 71540, November 24, 2010), and adding the following new AD:



2016-08-17 Bell Helicopter Textron Canada: Amendment 39-18494; Docket No. FAA-2013-0734; Directorate Identifier 2012-SW-080-AD.

(a) Applicability

This AD applies to Bell Helicopter Textron Canada (Bell) Model 222, 222B, 222U, 230, and 430 helicopters, with a main rotor hydraulic servo actuator (servo actuator) part number (P/N) 222-382-001-107 installed, certificated in any category.

(b) Unsafe Condition

This AD defines the unsafe condition as corrosion or a nonconforming grind relief on the output piston rod assembly (piston rod). This condition could lead to failure of the piston rod, failure of the servo actuator, and subsequent loss of helicopter control.

(c) Affected ADs

This AD supersedes AD 2010-19-51, Amendment 39-16523 (75 FR 71540, November 24, 2010).

(d) Effective Date

This AD becomes effective May 31, 2016.

(e) Compliance

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

(f) Required Actions

Before further flight:

(1) Disassemble each servo actuator to gain access to the piston rod as shown in Figures 1 through 5 and by following the Accomplishment Instructions, paragraph 3.A., Part I., of Woodward HRT Alert Service Bulletin No. 141600-67-02, dated August 18, 2010 (Woodward ASB).

(2) Clean the entire piston rod and nut using acetone and a nylon bristle brush removing all contaminants to allow for inspection. Inspect the grind relief configuration for the piston rod and nut as shown in Figure 6 of the Woodward ASB. If the grind relief is unacceptable as shown in Figure 6, replace the piston rod and the nut with airworthy parts.

(3) Using a 10X or higher magnifying glass, visually inspect the nut for any corrosion or any damage to the threads. If you find any corrosion or any damage to the threads, replace the nut with an airworthy nut.

(4) Using a 10X or higher magnifying glass, visually inspect the piston rod as shown in Figure 7 of the Woodward ASB for any corrosion, visible lack of cadmium plate (gold or gray color), or

damage to the piston rod. For the purposes of this AD, damage to the piston rod is defined as pitting, a visible scratch, a crack, or a visible abrasion.

(i) If there is any corrosion or visible lack of cadmium plate or any damage to the piston rod in the Critical Areas as shown in Figure 7 of the Woodward ASB, replace the servo actuator with servo actuator P/N 222-382-001-111 or P/N 222-382-001-111FM before further flight.

(ii) If there is any corrosion or visible lack of cadmium plate on the piston rod in areas that are not considered Critical Areas as shown in Figure 7 of the Woodward ASB, rework the piston rod by removing any surface corrosion that has not penetrated into the base material by lightly buffing. Clean the part using acetone and a nylon bristle brush to remove any residue. Comply with paragraphs (f)(5) through (f)(6) of this AD. Within 1,200 hours time-in-service (TIS) or 1 year, whichever occurs first, replace the servo actuator with servo actuator P/N 222-382-001-111 or P/N 222-382-001-111FM.

(iii) If there is any corrosion that is red or orange in color, magnetic particle inspect the piston rod for a crack.

(A) If there is a crack, replace the servo actuator with servo actuator, P/N 222-382-001-111 or P/N 222-382-001-111FM before further flight.

(B) If there is no crack, comply with paragraphs (f)(5) through (f)(6) of this AD. Within 2,400 hours TIS or 2 years, whichever occurs first, replace the servo actuator with servo actuator P/N 222-382-001-111 or P/N 222-382-001-111FM.

(iv) If there is no corrosion, visible lack of cadmium plate, or damage to the piston rod, comply with paragraphs (f)(5) through (f)(6) of this AD. Within 3,000 hours TIS or 4 years, whichever occurs first, replace the servo actuator with servo actuator P/N 222-382-001-111 or P/N 222-382-001-111FM.

(5) Inspect the portion of the piston rod for any absence of cadmium plating (bare base metal), as shown in Figure 7 of the Woodward ASB. If there is any bare base metal on the piston rod in this area, apply brush cadmium plating to all bare and reworked areas using SPS5070 or equivalent 0.0002 to 0.0005 inch thick and rework the piston rod by following the Accomplishment Instructions, paragraph C., Part III, C.1.1.1. through C.1.1.3., of the Woodward ASB.

(6) Reassemble the servo actuator by following the Accomplishment Instructions, paragraph C, Part III, 1.1.4. through 3.3.4. of the Woodward ASB.

(g) Credit for Actions Previously Completed

Compliance with the Woodward ASB or with AD 2010-19-51 (75 FR 71540, November 24, 2010) before the effective date of this AD is considered acceptable for compliance with the corresponding inspections specified in paragraph (f) of this AD. If you replaced the piston rod pursuant to the Woodward ASB or paragraph (d)(1) or (d)(3) of AD 2010-19-51, apply the requirements of paragraph (f)(4)(iv) of this AD.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Safety Management Group, FAA, may approve AMOCs for this AD. Send your proposal to: Matt Wilbanks, Aviation Safety Engineer, Regulations and Policy Group, Rotorcraft Directorate, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email 9-ASW-FTW-AMOC-Requests@faa.gov.

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office, before operating any aircraft complying with this AD through an AMOC.

(i) Additional Information

(1) Bell Alert Service Bulletin (ASB) No. 222-11-111 for Model 222 and 222B helicopters, ASB No. 222U-11-82 for Model 222U helicopters, ASB No. 230-11-43 for Model 230 helicopters, and ASB No. 430-11-46 for Model 430 helicopters, all Revision A and all dated June 22, 2012, which are not incorporated by reference, contain additional information about the subject of this AD. For service information identified in this AD, contact Bell Helicopter Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J1R4; telephone (450) 437-2862 or (800) 363-8023; fax (450) 433-0272; or at <http://www.bellcustomer.com/files/>. You may review a copy of the service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177.

(2) The subject of this AD is addressed in the Transport Canada Civil Aviation (TCCA) AD No. CF-2010-29R1, dated July 26, 2012. You may view the TCCA AD on the Internet at <http://www.regulations.gov> in Docket No. FAA-2013-0734.

(j) Subject

Joint Aircraft Service Component (JASC) Code: 6730, Rotorcraft Servo System.

(k) 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 the AD specifies otherwise.

(3) The following service information was approved for IBR on December 9, 2010 (75 FR 71540, November 24, 2010).

(i) Woodward HRT Alert Service Bulletin No. 141600-67-02, dated August 18, 2010.

(ii) Reserved.

(4) For Woodward HRT service information identified in this AD, contact Bell Helicopter Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J1R4; telephone (450) 437-2862 or (800) 363-8023; fax (450) 433-0272; or at <http://www.bellcustomer.com/files/>.

(5) You may view this service information at FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

(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, call (202) 741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Fort Worth, Texas, on April 13, 2016.

Scott A. Horn,
Acting Manager, Rotorcraft Directorate,
Aircraft Certification Service.