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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-1137; Directorate Identifier 2010-SW-079-AD; Amendment 39-16523; AD 2010-19-51]

RIN 2120-AA64

Airworthiness Directives; Bell Helicopter Textron Canada Model 222, 222B, 222U, 230, and 430 Helicopters

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This document publishes in the Federal Register an amendment adopting Airworthiness Directive (AD) 2010-19-51, which was sent previously to all known U.S. owners and operators of the specified model Bell Helicopter Textron Canada (Bell) helicopters by individual letters. This AD requires inspecting parts of the main rotor hydraulic servo actuator (servo actuator) for certain conditions and replacing any unairworthy parts before further flight. This AD is prompted by a collective servo actuator malfunction and a subsequent investigation that revealed the output piston rod assembly (piston rod) had fractured at the threaded end because of stress corrosion cracking. Also, during the investigation of that servo actuator malfunction, a nonconforming grind relief was discovered on a separate piston rod. The actions specified by this AD are intended to detect corrosion or a nonconforming piston rod that, if not detected and corrected, could result in failure of the piston rod, failure of the servo actuator, and subsequent loss of control of the helicopter.

DATES: Effective December 9, 2010, to all persons except those persons to whom it was made immediately effective by Emergency AD 2010-19-51, issued on August 31, 2010, which contained the requirements of this amendment.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of December 9, 2010.

Comments for inclusion in the Rules Docket must be received on or before January 24, 2011.

ADDRESSES: Use one of the following addresses to submit comments on this AD:

- 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.

You may get the service information identified in this AD from Bell Helicopter Textron Canada, 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/.

Examining the Docket: You may examine the docket that contains the AD, any comments, and other information on the Internet at http://www.regulations.gov, or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Operations office (telephone (800) 647-5527) is located in Room W12-140 on the ground floor of the West Building at the street address stated in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: J.R. Holton, Jr., Aviation Safety Engineer, Rotorcraft Directorate, Safety Management Group, 2601 Meacham Blvd., Fort Worth, Texas 76137, telephone (817) 222-4964, fax (817) 222-5961.

SUPPLEMENTARY INFORMATION: On August 31, 2010, the FAA issued Emergency AD 2010-19-51 for the specified model helicopters, which requires inspecting parts of the servo actuator for certain conditions and replacing any unairworthy parts before further flight. That action was prompted by a collective servo actuator malfunction and a subsequent investigation that revealed the output piston rod assembly (piston rod) had fractured at the threaded end because of stress corrosion cracking. Also, during the investigation of that servo actuator malfunction, a nonconforming grind relief was discovered on a separate piston rod. This condition, if not detected and corrected, could result in failure of the piston rod, failure of the servo actuator, and subsequent loss of control of the helicopter.

Transport Canada, the airworthiness authority for Canada, has issued Canadian AD No. CF-2010-29, dated August 26, 2010 to correct an unsafe condition for the Bell Model 222, 222B, 222U, 230, and 430 helicopters. Transport Canada advises that it has been determined that the piston rods of the servo actuators "may be corroded and, consequently, prone for corrosion cracking." Also, in one case, "an unapproved repair was found on the piston rod." This situation, if not corrected, could result in loss of control of the helicopter.

Bell has issued Alert Service Bulletin (ASB) No. 222-10-109 for the Model 222 and 222B helicopters, ASB No. 222U-10-80 for the Model 222U helicopters, ASB No. 230-10-41 for the Model 230 helicopters, and ASB No. 430-10-44 for the Model 430 helicopters. Each ASB is dated August 18, 2010, and specifies a one-time inspection of all affected servo actuators to verify the condition of the piston rod. Woodward HRT also issued ASB No. 141600-67-02, dated August 18, 2010, attached to each Bell ASB, which specifies inspecting the piston rod for corrosion and nonconforming grind relief. It also contains instructions for reworking and reassembling the unit for operation. Transport Canada classified the ASBs as mandatory and issued AD No. CF-2010-29, dated August 26, 2010, to ensure the continued airworthiness of these helicopters.

This AD differs from the Transport Canada AD in that we require the initial inspection before further flight rather than no later than 5 hours air time upon receiving the AD. Also, this AD requires replacing unairworthy parts with airworthy parts if certain conditions are found and this AD does not add a life limit for the servo actuator rod. Also, this AD does not require a one time rectification and a complete overhaul of the servo actuator after the initial inspection. This AD is an interim action.

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, they have notified us of the unsafe condition described in the Transport Canada AD. We are issuing this AD because we evaluated all information provided by Transport Canada and determined the unsafe condition exists

and is likely to exist or develop on other helicopters of these same type designs. Therefore, this AD requires, before further flight:

- Disassembling the actuator to gain access to the piston rod.
- Cleaning the entire piston rod and nut using Acetone and a nylon bristle brush removing all contaminates to allow for inspection.
- Inspecting the grind relief configuration for the piston rod and nut. If the grind relief is unacceptable, replacing the piston rod and the nut with airworthy parts.
- Using a 10x or higher magnifying glass, visually inspecting the nut for corrosion or damage to the threads. If you find any corrosion or damage to the threads, replacing the nut with an airworthy nut.
- Using a 10x or higher magnifying glass, visually inspecting the piston rod for any corrosion, visible lack of cadmium plate (gold or grey color), or damage to the piston rod. If you find any corrosion, visible lack of cadmium plate (gold or grey color), or damage to the piston rod in the "Critical Areas," replacing the piston rod with an airworthy piston rod.
- If you find any corrosion or visible lack of cadmium plate on the piston rod in areas that are not considered "Critical Areas," reworking the piston rod by removing any surface corrosion that has not penetrated into the base material by lightly buffing with scotch-brite. Cleaning the part using Acetone and a nylon bristle brush to remove any residue.
- If you find any corrosion that is red or orange in color, magnetic particle inspecting the piston rod for a crack. If you find a crack, replacing the piston rod with an airworthy piston rod.
- Inspecting the portion of the piston rod for any bare base metal that is not coated with cadmium plate. If you find any bare base metal on the piston rod in this area, reworking the piston rod by applying brush cadmium plating to all bare and reworked areas.
- Reassembling the servo actuator.
- After reassembling the servo actuator, marking it with the letter "B" following the serial number on the name plate using a scribe or vibrating stylus.
- Performing a hydraulic system check.

These actions must be accomplished by following specified portions of the ASBs described previously.

The short compliance time involved is required because the previously described critical unsafe condition can adversely affect the structural integrity and controllability of the helicopter. Therefore, inspecting parts of the servo actuator for certain conditions and replacing any unairworthy parts are required before further flight, and this AD must be issued immediately.

Since it was found that immediate corrective action was required, notice and opportunity for prior public comment thereon were impracticable and contrary to the public interest, and good cause existed to make the AD effective immediately by individual letters issued on August 31, 2010 to all known U.S. owners and operators of Bell Helicopter Textron Canada Model 222, 222B, 222U, 230, and 430 helicopters. These conditions still exist, and the AD is hereby published in the Federal Register as an amendment to 14 CFR 39.13 to make it effective to all persons. However, we have made a change to Note 1 of this AD, and we have also clarified that we are not adopting a reduced life limit for the piston rod assembly. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

We estimate that this AD will affect 146 helicopters of U.S. registry. There are three servo actuators per helicopter. For a servo actuator that is inspected and does not require rework or repair, removing each servo actuator, performing the inspections, and re-installing it will take approximately four work hours at an average labor rate of $85 per hour. For a servo actuator that is inspected and requires a servo actuator rod to be replaced, removing each servo actuator, performing the inspections, and re-installing an airworthy servo actuator rod will also take approximately four work hours. Each replacement servo actuator rod is estimated to cost $9,000. Based on these figures, we assume that the total cost impact of the AD on U.S. operators will be $289,020, assuming 10% of the fleet (15 helicopters) will need to replace one servo actuator rod per helicopter.

Comments Invited

This AD is a final rule that involves requirements that affect flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to submit any written data, views, or arguments regarding this AD. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2010-1137; Directorate Identifier 2010-SW-079-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD. We will consider all comments received by the closing date and may amend the AD in light 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 with FAA personnel concerning this AD. Using the search function of our docket Web site, you can find and read the comments to any of our dockets, including the name of the individual who sent the comment. You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78).

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 an economic evaluation of the estimated costs to comply with this AD. See the AD docket to examine the economic evaluation.

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.

List of Subjects in 14 CFR Part 39

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

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by adding a new airworthiness directive to read as follows:

2010-19-51 Bell Helicopter Textron Canada: Amendment 39-16523. Docket No. FAA-2010-1137; Directorate Identifier 2010-SW-079-AD.

Applicability: Model 222, 222B, 222U, 230, and 430 helicopters, with an installed main rotor hydraulic servo actuator, part number 222-382-001-107 (servo actuator), manufactured by Woodward HRT, certificated in any category.

Compliance: Before further flight, unless accomplished previously. To detect corrosion or a nonconforming grind relief on the output piston rod assembly (piston rod), to prevent failure of the piston rod, failure of the servo actuator, and subsequent loss of control of the helicopter, do the following:

(a) Disassemble the 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).

Note 1: Bell Helicopter Textron Canada (Bell) Alert Service Bulletin (ASB) No. 222-10-109 for the Models 222 and 222B, ASB No. 222U-10-80 for the Model 222U, ASB No. 230-10-41 for the Model 230, and ASB No. 430-10-44 for the Model 430 helicopters, all ASBs dated August 18, 2010, which are not incorporated by reference, contain additional information about the subject of this AD.

(b) Clean the entire piston rod and nut using Acetone and a nylon bristle brush removing all contaminates 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.

(c) 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.

(d) 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 grey color), or damage to the piston rod.

Note 2: For the purposes of this AD, damage to the piston rod is defined as pitting, a visible scratch, a crack, or a visible abrasion.

(1) If you find any corrosion or visible lack of cadmium plate or any damage to the piston rod in the "Critical Areas," replace the piston rod with an airworthy piston rod.

(2) If you find any corrosion or visible lack of cadmium plate on the piston rod in areas that are not considered "Critical Areas," rework the piston rod by removing any surface corrosion that has not penetrated into the base material by lightly buffing with scotch-brite. Clean the part using Acetone and a nylon bristle brush to remove any residue.

(3) If you find any corrosion that is red or orange in color, magnetic particle inspect the piston rod for a crack. If you find a crack, replace the piston rod with an airworthy piston rod.

(e) Inspect the portion of the piston rod for any bare base metal, as shown in Figure 7 of the Woodward ASB, which is coated with cadmium plate. If you find any bare base metal on the piston rod in this area, rework the piston rod by applying brush cadmium plating to all bare and reworked areas by following the Accomplishment Instructions, paragraph B., Part II, 4.5. and paragraph C., Part III, C.1.1.1. through C.1.1.3., of the Woodward ASB, except we are not adopting the life limit for the piston rod assembly as stated in paragraph B, Part II, 4.5.

(f) 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) After reassembling the servo actuator, mark it with the letter "B" following the serial number on the name plate using a scribe or vibrating stylus.

(h) Perform a hydraulic system check.

(i) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Contact the Manager, Safety Management Group, FAA, ATTN: J. R. Holton, Jr., Aviation Safety Engineer, Rotorcraft Directorate, 2601 Meacham Blvd., Fort Worth, Texas 76137, telephone (817) 222-4964, fax (817) 222-5961, for information about previously approved alternative methods of compliance.

(j) The Joint Aircraft System/Component (JASC) Code is 6730: Rotorcraft Servo System.

(k) The actions shall be done in accordance with the specified portions of Woodward HRT Alert Service Bulletin No. 141600-67-02, dated August 18, 2010. The Director of the Federal Register approved this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Bell Helicopter Textron Canada, 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/. Copies may be inspected at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 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/code_of_federal_ regulations/ibr_locations.html. (l) This amendment becomes effective on December 9, 2010, to all persons except those persons to whom it was made immediately effective by Emergency AD 2010-19-51, issued August 31, 2010, which contained the requirements of this amendment.

Note 3: The subject of this AD is addressed in Transport Canada AD No. CF-2010-29, dated August 26, 2010.

Issued in Fort Worth, Texas, on November 9, 2010.
Kim Smith,
Manager, Rotorcraft Directorate,
Aircraft Certification Service.