

2010-19-51 BELL HELICOPTER TEXTRON CANADA: 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, contain guidance pertaining to this AD.

(b) 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.

(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.

(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) Copies of the applicable service information 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/>.

(l) Emergency AD 2010-19-51, issued August 31, 2010, becomes effective upon receipt.

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

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