EMERGENCY AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

www.faa.gov/aircraft/safety/alerts/

DATE: August 14, 2008
AD #: 2008-17-51

This Emergency Airworthiness Directive (AD) is prompted by three reports of in-flight failure of the forward directional control cable (control cable) and loss of yaw control resulting in emergency landings and subsequent damage to the MD900 helicopters. On November 14, 2007, one of the MD900 helicopters experienced failure of the control cable. The control cable had 186 hours time-in-service (TIS). On July 21, 2008, another MD900 helicopter experienced failure of the control cable. The helicopter had 55 hours TIS. We were investigating the cause of the control cable failures when we received notice of a third failure. Failure of the control cable could result in loss of yaw control and subsequent loss of control of the helicopter.

We have reviewed MDHI Service Bulletin SB900-108R1, dated August 13, 2008, which describes procedures for magnetic particle inspecting and modifying the control cable and rotating cone control rod installation.

This unsafe condition is likely to exist or develop on other helicopters of the same type design. Therefore, this AD requires the following before further flight:

- Remove the rotating cone, the thruster extension, and the rotating cone control rod, and NAS1193K4CP lock device (2 parts).

- Do a fluorescent magnetic particle inspection for a crack in the aft threads of the control cable. If you find a crack, replace the control cable with an airworthy part. If you do not find a crack, demagnetize the cable threads until you reach a gauss level of +/-3.

- Visually inspect the aft cable attach bracket for a crack. Inspect for interference with the movement of the control cable or for deformation of the aft cable attach bracket. If a crack or interference with the movement of the control cable or deformation of the aft cable attach bracket exists, replace the bracket with an airworthy part.

- Cut and modify the aft end of the control cable conduit.

- Modify the rotating cone control rod by drilling lock wire holes. Using permanent ink, identify the rotating cone control rod with part number 900C2010582-105.

- Inspect the control cable for proper adjustment.

- Install the rotating cone control rod.

- Install the thruster extension.

- Install the rotating cone. If you adjust the control cable at the attach brackets, inspect for interference with the movement of the control cable or for deformation of the aft cable attach bracket. If interference with the movement of the control cable or deformation of the aft cable attach bracket exists, replace the bracket with an airworthy part.

- Rerig the antitorque directional control system.

Do the actions by following specified portions of the service bulletin described previously.

This rule is issued under 49 U.S.C. Section 44701 pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this emergency AD.

2008-17-51 MD HELICOPTERS, INC.: Directorate Identifier 2008-SW-49-AD.

Applicability: Model MD900 helicopters, serial numbers 900-00008 through 900-00128, with part number (P/N) 900C3010045-105 forward directional control cable (control cable), P/N 900C2010582-103 rotating cone control rod, and P/N 9000F2318021 (all dash numbers) tailboom assembly, installed, certificated in any category.

Compliance: Before further flight, unless done previously.

To prevent loss of yaw control and subsequent loss of control of the helicopter, do the following:

(a) Remove the rotating cone, the thruster extension, the rotating cone control rod, and the NAS1193K4CP lock device (2 parts). Do not reinstall the lock device. Use your hand and turn the telescopic part on the aft end of the control cable until it is fully forward on the control cable.

Note: The MDHI maintenance manuals CSP-900RMM-2, Sections 67-20-00, 29-00-00, 53-40-00; CSP-SPM, Section 20-30-00; and CSP-900IPL-4 Illustrated Parts pertain to the subject of this AD.

(b) Do a fluorescent magnetic particle inspection for a crack in the aft threads of the control cable as depicted in Figure 2 and by following MD Helicopters, Inc. (MDHI) Service Bulletin SB900-108R1, dated August 13, 2008, Section 2, Accomplishment Instructions (SB), paragraphs (5)(a) through 5(j). The inspection must be done by an inspector qualified under the guidelines established by MIL-STD-410E, ATA Specification 105, AIA-NAS-410, or an FAA-accepted equivalent for qualification standards of NDT Inspection/Evaluation Personnel. The inspector that accepts or rejects the inspected part must be certified to a Non-Destructive Testing (NDT) UT minimum Level II. The part must be inspected to the inspection facilities written procedure approved by a person certified to a Level III. For the magnetic particle examination process and qualifications, follow the American Society for Testing and Material (ASTM) E 1444.

(1) If you find a crack, replace the control cable with an airworthy part.

(2) If you do not find a crack, demagnetize the cable threads by following paragraphs (6)(a) or (6)(b) of the SB until you reach a gauss level of +/-3.

(c) Visually inspect the aft cable attach bracket, depicted in Figure 3 of the SB, for a crack. Inspect for interference with the movement of the control cable or for deformation of the aft cable attach bracket by following paragraphs (9)(a) through (9)(c) of the SB. If a crack or interference with the movement of the control cable or deformation of the aft cable attach bracket exists, replace the bracket with an airworthy part.

(d) Cut and modify the aft end of the control cable conduit as depicted in Figure 4 of the SB by following paragraphs (10)(a) through (10)(g) of the SB.

(e) Modify the rotating cone control rod by drilling lock wire holes as depicted in Figure 5 of the SB by following paragraphs (11)(a) through (11)(g) of the SB. Using permanent ink, mark the rotating cone control rod with "900C2010582-105."

(f) Inspect the control cable for proper adjustment by following paragraphs (12)(a) through (12)(c), of the SB.

(g) Install the rotating cone control rod as depicted in Figure 6 of the SB by following paragraphs (13)(a) through (13)(c) of the SB. Make sure the control cable threads are past the witness hole in the rotating cone control rod.

(h) Install the thruster extension.

(i) Install the rotating cone. If you adjust the control cable at the attach brackets, inspect for interference with the movement of the control cable or for deformation of the aft cable attach bracket by following paragraph (15) of the SB. If interference with the movement of the control cable or deformation of the aft cable attach bracket exists, replace the bracket with an airworthy part.

(j) Rerig the antitorque directional control system.

(k) 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, Los Angeles Aircraft Certification Office, FAA, ATTN: Eric D. Schrieber, Aviation Safety Engineer, Airframe Branch, 3960 Paramount Blvd., Lakewood, California 90712, telephone 562-627-5348, fax 562-627-5210, for information about previously approved alternative methods of compliance.

(l) Special flight permits will not be issued.

(m) Copies of the applicable service information may be obtained from MD Helicopters Inc., Attn: Customer Support Division, 4555 E. McDowell Rd., Mail Stop M615, Mesa, Arizona 85215-9734, telephone 1-800-388-3378, fax 480-346-6813, or on the web at www.mdhelicopters.com.

(n) Emergency AD 2008-17-51, issued August 14, 2008, becomes effective upon receipt.

FOR FURTHER INFORMATION CONTACT: Eric D. Schrieber, FAA, Los Angeles Aircraft Certification Office, Aviation Safety Engineer, Airframe Branch, 3960 Paramount Blvd., Lakewood, California 90712, telephone 562-627-5348, fax 562-627-5210

Issued in Fort Worth, Texas, on August 14, 2008.

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