

EMERGENCY AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

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

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

DATE: August 20, 2008

AD #: 2008-18-51

This Emergency Airworthiness Directive (AD) is prompted by reports that two Model MD900 helicopters experienced broken Vertical Stabilizer Control System (VSCS) adapter tubes. In one case, the helicopter experienced uncommanded yaw, resulting in loss of a window and a door. The same part-numbered adapter tube is used on the Model 500N and 600N helicopters Yaw Stability Augmentation System (YSAS). Some of the VSCS and YSAS adapter tubes were not manufactured to the required specifications and can fail. This condition, if not corrected, could result in loss of yaw control and subsequent loss of control of the helicopter.

We have reviewed MDHI Service Bulletins SB500N-040 for the Model 500N helicopters and SB600N-047 for the Model 600N helicopters, dated August 15, 2008, with YSAS adapter tubes installed. We have also reviewed Service Bulletin SB900-109, dated August 15, 2008, for the Model MD900 helicopters with VSCS adapter tubes installed. These service bulletins specify de-energizing the YSAS or the VSCS and installing a placard that limits the airspeed. The service bulletins specify removing the placard when the YSAS and VSCS adapter tubes are replaced with airworthy parts.

The manufacturer anticipates having airworthy YSAS and VSCS adapter tubes available within the next 30 to 60 days. The FAA anticipates requiring that the YSAS and VSCS adapter tubes be replaced with the airworthy parts as a terminating action to the requirements of this AD.

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

For Model 500N and 600N helicopters:

- De-energize the YSAS, pull the circuit breaker, and install a plastic cable tie on the circuit breaker to prevent accidental operation of the YSAS.
- Install a placard on the instrument panel as close as practicable to the airspeed indicator that states:

“YSAS SYSTEM DE-ENERGIZED. AIRSPEED LIMIT 100 KIAS or V_{NE} , WHICHEVER IS LESS.”

For Model MD900 helicopters:

- De-energize the VSCS.
- Disable the Autopilot/VSCS (AP/SAS) and install a placard stating that the AP/SAS is deactivated.
- Install a placard on the instrument panel as close as practicable to the airspeed indicator that states:

“VSCS SYSTEM DE-ENERGIZED. AIRSPEED LIMIT 100 KIAS or V_{NE} , WHICHEVER IS LESS.”

- Make pen and ink changes or place a copy of this AD in the airworthiness limitations section of the RFM to revise the airworthiness limitations as follows:
 - V_{NE} is limited to 100 KIAS or less as determined by referring to the airspeed V_{NE} placard already installed on the helicopter.
 - Use of the autopilot is prohibited.

For the Model MD900 helicopters, do the actions by following the 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.

2008-18-51 MD HELICOPTERS, INC.: Directorate Identifier 2008-SW-50-AD.

Applicability: Model 500N helicopters, serial numbers (S/N) -001 through -107 with a prefix of “LN,” Model 600N helicopters, S/N -003 through -076 with a prefix of “RN,” with Yaw Stability Augmentation System (YSAS) adapter tubes, part number (P/N) 500N7218-1, installed; and MD900 helicopters, S/N 900-00008 through 900-00128, with Vertical Stabilizer Control System (VSCS) adapter tubes, P/N 500N7218-1, 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) For Model 500N and 600N helicopters:

(1) De-energize the YSAS, pull the circuit breaker on the circuit breaker panel, and install a plastic cable tie on the circuit breaker to prevent accidental operation of the YSAS.

Note 1: MDHI maintenance manual CSP-HMI-3, Section 96-00-00, pertains to the subject of this AD.

(2) Install a placard on the instrument panel as close as practicable to the airspeed indicator that states:

“YSAS SYSTEM DE-ENERGIZED. AIRPSEED LIMIT 100 KIAS or V_{NE} , WHICHEVER IS LESS.”

(b) For Model MD900 helicopters:

(1) De-energize the VSCS by following the MDHI Service Bulletin SB900-109, dated August 15, 2008, Section 2 Accomplishment Instructions, paragraphs (1) through (3).

Note 2: The MDHI maintenance manual CSP-900RMM-3, Section 96-00-00, pertains to the subject of this AD.

(2) If installed, disable the Autopilot (AP)/VSCS (AP/SAS) as follows:

(i) Determine if the AP/SAS trim actuators are centered. If the AP/SAS trim actuators are not centered, center them. This is done as part of the normal aircraft shutdown procedure.

Note 3: The Rotorcraft Flight Manual (RFM) Supplement 006-00845-0000 Section 4-11 (Category B Configuration) or 006-00845-0004 (Category A Configurations) pertains to the subject of this AD. If the AP or VSCS has been engaged subsequent to the shutdown procedure, RFM Supplement 006-00845-0000 Section 4-4 (Category B Configuration) or 006-00845-0004 (Category A Configurations) contains the shutdown procedure that pertains to the subject of this AD.

(ii) After the AP/SAS trim actuators are centered:

(A) Turn the AP/SAS MSTR switch to the OFF position.

(B) Pull the following AP circuit breakers located on the A601 Essential Bus Circuit Breaker Panel, mounted in the cockpit console and install a plastic cable tie on each circuit breaker to prevent accidental energizing of the circuit:

(1) AP/SAS CMPTR (CB28),

(2) AP/SAS DISC (CB29), and

(3) AP/SAS ACCEL (CB30).

(C) Install a placard next to the AP Mode Select panel that contains the AP/SAS MSTR switch stating “AP/SAS DEACTIVATED.”

(3) Install a placard on the instrument panel as close as practicable to the airspeed indicator that states:

“VSCS SYSTEM DE-ENERGIZED. AIRPSEED LIMIT 100 KIAS or V_{NE} , WHICHEVER IS LESS.”

Note 4: The Rotorcraft Flight Manual (RFM) Airspeed Limitation Section contains information for operating with the VSCS inoperative.

(c) Make pen and ink changes or place a copy of this AD in the airworthiness limitations section of the RFM to revise the airworthiness limitations as follows:

(1) V_{NE} is limited to 100 KIAS or less as determined by referring to the airspeed V_{NE} placard already installed on the helicopter.

(2) Use of the autopilot is prohibited.

(d) 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.

(e) 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.

(f) Emergency AD 2008-18-51, issued August 20, 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 20, 2008.

Mark R. Schilling,

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Aircraft Certification Service.