

# EMERGENCY AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

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

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**DATE: October 23, 2008**

**AD #: 2008-22-52**

This superseding Emergency Airworthiness Directive (EAD) is prompted by several occurrences of failed adapter tubes. These incidents occurred on the MD900 helicopter Vertical Stabilizer Control System (VSCS); however, the same adapter tubes are used on 500N and 600N helicopter Yaw Stability Augmentation System (YSAS). We are issuing this EAD to prevent a reduction of yaw control and subsequent loss of control of the helicopter.

We have reviewed MDHI Service Bulletin (SB) SB500N-040R1/SB600N-047R1 dated August 27, 2008. The SB specifies de-energizing the YSAS, installing a placard that limits the airspeed, and replacing the YSAS adapter.

On August 20, 2008, we issued EAD 2008-18-51 for 500N, 600N, and MD900 helicopters. EAD 2008-18-51 was prompted by reports that two MD900 helicopters experienced failed VSCS adapter tubes. In one case, the helicopter experienced an uncommanded yaw, resulting in loss of a window and a door. The EAD required several actions related to the YSAS for the Model 500N and 600N helicopters and to the VSCS for the Model MD900 helicopters.

After we issued EAD 2008-18-51, we discovered that pulling the circuit breaker per the EAD caused impaired directional control, which could result in loss of control of the helicopter. Therefore, on August 27, 2008, we issued superseding EAD 2008-18-52, which requires, for Model 500N, 600N and MD900 helicopters, turning OFF the VSCS or YSAS switches instead of pulling the circuit breakers and installing placards that limit airspeed to 100 KIAS or  $V_{NE}$ , whichever is less. For the Model MD900 helicopters, limiting flight to VFR, prohibiting use of the autopilot, and making changes to the Emergency Procedures and Airworthiness (sic) Limitations sections of the Rotorcraft Flight Manual (RFM) are also required. For all of the helicopter models, EAD 2008-18-52 requires, within 45 days, terminating action by replacing the adapter tube with an airworthy adapter tube that has a date stamp of August 15, 2008 or later, and then removing the placards, removing the AD limitation changes from the RFM, and returning all switches and circuit breakers to their normal positions.

Since the issuance of EAD 2008-18-52, we have had additional occurrences of failed adapter tubes on the MD900 helicopters. The replacement adapter tube that was terminating action for the requirements of EAD 2008-18-52 failed on 2 of the MD900 helicopters. Furthermore, adapter tubes without a production date code stamp remain a safety concern on the 500N and 600N helicopters because they may not conform to the FAA-approved design. Therefore, we are separating the AD actions and issuing 2 superseding ADs; 2008-22-52 for the 500N and 600N helicopters, and 2008-22-53 for the MD900 helicopters.

This EAD 2008-22-52 applies to the 500N and 600N helicopters and continues to require the same actions as EAD 2008-18-52; however, we have made minor editorial changes as well as the following changes:

- We do not include any serial numbers in the applicability because this unsafe condition can occur on any helicopter with the affected adapter tube installed.
- We require that the limitations section of the RFM be revised to reflect the airspeed limitation required by the placard.
- We require that replacement adapter tubes have a production date code stamped on them to determine that the parts are airworthy (e.g., 08-08 indicates a production date of August 2008).

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

- Turning OFF the YSAS switch.
- Installing a placard on the instrument panel as close as practicable to the airspeed indicator that states:

**“YSAS SYSTEM IS OFF. AIRSPEED LIMIT 100 KIAS or  $V_{NE}$ , WHICHEVER IS LESS.”**

- Revising the limitations section of the RFM to limit the airspeed to 100 KIAS or  $V_{NE}$ , whichever is less.

This EAD also requires replacing adapter tubes without a production date code stamp with adapter tubes that have a production date code stamp within 45 days and is terminating action for the requirements of the EAD. After replacing the affected adapter tubes, the EAD requires removing the placards, removing the revisions that were made to the RFM because of this EAD, and returning the YSAS system to its normal position.

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.

**2008-22-52 MD HELICOPTERS, INC.:** Directorate Identifier 2008-SW-59-AD. Supersedes Emergency AD 2008-18-52, Directorate Identifier 2008-SW-52-AD.

Applicability: Model 500N and 600N helicopters, with a Yaw Stability Augmentation System (YSAS) adapter tube, part number 500N7218-1, installed, certificated in any category. Adapter tubes that have a production date code stamp are not included in the applicability of this AD.

Compliance: Required as indicated, unless accomplished previously.

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

- (a) Before further flight:

(1) Turn OFF the YSAS switch.

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

**“YSAS SYSTEM IS OFF. AIRSPEED LIMIT 100 KIAS or  $V_{NE}$ , WHICHEVER IS LESS.”**

Note: MDHI Service Bulletin SB500N-040R1/SB600N-047R1, dated August 27, 2008, and maintenance manual CSP-HMI-3, Section 96-00-00, pertain to the subject of this AD.

(3) Make pen and ink changes or place a copy of this AD in the limitations section of the rotorcraft flight manual (RFM) to revise the 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.”

(b) Within 45 days, replace each affected adapter tube with an airworthy adapter tube that has a production date code stamp. This replacement is terminating action for the requirements of this AD. Once this replacement has been done, remove the placards, remove the airspeed restriction revisions that were made to the RFM, and return the YSAS system to its normal position.

(c) 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.

(d) 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](http://www.mdhelicopters.com).

(e) Emergency AD 2008-22-52, issued October 23, 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 October 23, 2008.

Scott A. Horn,  
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