

# SERVICE LETTER

DATE: 15 MAY 1995

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**TO:** ALL OWNERS AND OPERATORS OF McDONNELL DOUGLAS HELICOPTER SYSTEM (MDHS) MD900 SERIES HELICOPTERS.

**SUBJECT:** MAXIMUM UP FLAPPING AND CYCLIC DEFLECTION OF MAIN ROTOR FLEXBEAM DURING GROUND HANDLING, MAINTENANCE, AND PRE-FLIGHT OPERATIONS.

**REASON:** It has been determined that improper handling of the rotor system during ground handling, maintenance, and pre-flight operations may result in damage to the main rotor flexbeams. MDHS urges owners, operators and maintenance personnel to adhere to the instructions provided.

**RECOMMENDED PROCEDURES:** During startup and shutdown, ensure cyclic stick is centered using cyclic stick centering strap (ref. Figure 1). Do not exceed the maximum up limits for the main rotor hub flexbeam during ground handling, maintenance, and pre-flight operations. (See CAUTION below.)



**To prevent rotor component damage, the main rotor hub deflection for a non-operating rotor is not to exceed 4 feet up at the tip of the rotor blade measured from static rest. With the blade removed, maximum up for the pitchcase is not to exceed 1.0 inch. (Measurement taken at out-board end of pitchcase on the upper surface of the pitchcase/blade attachment area.)**

## Ground Handling Procedures

1. Always ensure rotor brake is disengaged before attempting to turn the rotor system, to avoid excessive lead-lag loads on the flexbeams.
2. The main rotor should be rotated to clear objects rather than lifting the blade and possibly exceeding the maximum up deflection limit.
3. Tie down rotor blades, when the helicopter is parked, to prevent rotor damage from blade flapping as a result of air turbulence from other aircraft or wind gusts. The maximum blade tie down load is when the blade tip just begins to deflect downward.

## Maintenance Information

1. Do not sit on the main rotor pitchcase to perform maintenance.
2. Do not exceed the main rotor hub deflection maximum up or cyclic limits during ground handling, maintenance, and pre-flight operations.

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**Forces at tip of blade not to exceed 25 pounds. Do not remove or install blades when hydraulic pressure is applied to the aircraft. When rigging/testing is complete, ensure the cyclic stick is centered laterally and longitudinally (refer to attached figure for cyclic centered position in relation to the instrument panel) before disconnecting hydraulic pressure from aircraft.**

3. The main rotor hub assembly must always be lifted using the proper hub sling (special tool T901, P/N: 900G1400101-101). Refer to the Rotorcraft Maintenance Manual for proper hub sling usage. Using strap slings or manually lifting the hub at the pitchcases can exceed the maximum up limit on the flexbeam.

## Pilot Pre-Flight Checks

1. Observe ground handling precautions when performing pre-flight checks and other daily operations (refer to CSP-900RFM-1).

## OTHER PUBLICATIONS AFFECTED:

All affected MD900 Technical Publications are being revised to include the necessary information concerning, ground handling, maintenance, and pre-flight operations.



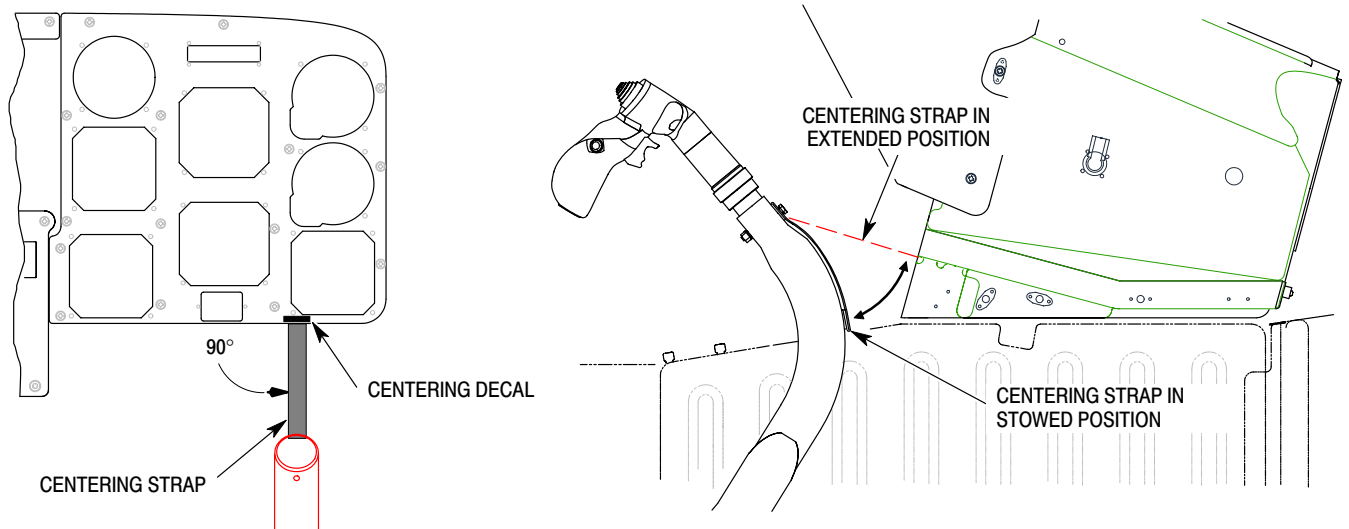
John Reagan, Dept. Manager,  
Commercial Customer Support  
McDonnell Douglas  
Helicopter Systems

**POINTS OF CONTACT:** For further assistance, contact your local MDHS Field Service Representative (refer to the latest revision of the Business Development and Customer Support handbook for address and telephone numbers) or contact the Field Service Department at MDHS, Mesa Arizona. Telephone: 1-800-388-3378 or (602) 891-6342. DATAFAX: (602) 891-6782.

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**CAUTION:** CYCLIC SHOULD BE TRIMMED TO THE NEUTRAL POSITION FOR START-UP AND SHUTDOWN.

NEUTRAL POSITION IS ACHIEVED WITH CENTERING STRAP EXTENDED, TOUCHING CENTERING DECAL WHEN PERPENDICULAR TO INSTRUMENT PANEL.

Figure 1. Cyclic Stick Position Equivalent To Zero Cyclic (Center)