

# MODEL MD900 SERIES SERVICE LETTER PACKAGE

# THIS PACKAGE CONTAINS A COMPLETE SET OF ALL MD900 SERIES SERVICE LETTERS ISSUED THROUGH:

**16 DECEMBER 2022** 



# MODEL MD900<sup>®</sup> ROTORCRAFT (MD EXPLORER<sup>®</sup>) SERVICE LETTERS

	MD900 Service Letters			
Publication	Issue/Reissue Date	Publication Title		
SL 900- <u>002R1</u>	22 Jun 2000	P&WC Publications Distribution Information		
SL 900- <u>003</u>	15 May 1995	Ground Handling Precautions		
SL 900- <u>005</u>	11 Nov 1995	Improved Rig Pin Access FOD Covers		
SL 900- <u>006</u>	11 Nov 1995	Pedal Return Springs		
SL 900- <u>007</u>	22 Sep 1995	Aircraft Modification Limitations and STC Installations		
SL 900- <u>009</u>	06 Dec 1995	Directional Control Inputs Information		
SL 900- <u>010</u>	19 Jan 1996	Integrated Instrumentation Software Upgrade		
SL 900- <u>011</u>	05 Apr 1996	Cockpit Door Latch Mechanism Modification		
SL 900- <u>013R1</u>	21 Mar 1997	Alternate Floor Panel Hardware Usage		
SL 900- <u>014</u>	21 May 1996	Trim Actuator Replacement		
SL 900- <u>015</u>	08 Jul 1996	Fastener Hardware Upgrade		
SL900- <u>018</u>	18 Dec 1996	Pedal Friction Hardware Option		
SL900- <u>019</u>	20 Dec 1996	Station 203 Ground Handling Hardware		
SL900- <u>020R1</u>	03 Jan 1997	Hoist Inspection Hole Installation		
SL900- <u>021R2</u>	09 Nov 2009	Four Point Passenger Restraint System		
SL900- <u>024</u>	03 Jan 1997	Baggage Door Window Installation		
SL900- <u>025R1</u>	23 Jan 1998	Cabin Door Handle Installation		
SL900- <u>029</u>	17 Mar 1997	Baggage Compartment Closeout Panel Installation for Utility Interiors		
SL900- <u>032</u>	05 May 1997	Strobe Light Circuit Breaker Change		
SL900- <u>033</u>	14 May 1997	Aft Jack Pad Access Hole		
SL900- <u>035</u>	26 Jun 1997	Vent System Air/Duct Addition Air Outlets Installation (Ref. Mod 9009500003)		
SL900- <u>036R1</u>	10 Mar 2000	Electronic Engine Control – P&WC SB 28111		
SL900- <u>038</u>	13 Feb 1998	Service Bulletin/Letter Designation		
SL900- <u>040</u>	13 Oct 1998	Structural Load Limits of MD900 Fuselage Handles		



MD900 Service Letters (Cont.)			
Publication	Issue/Reissue Date	Publication Title	
SL900- <u>041</u>	19 Feb1999	Transfer of Ownership	
SL900- <u>042R1</u>	14 Jan 2002	Integrated Instrumentation Display System (IIDS)	
SL900- <u>043</u>	23 May 2000	Availability of Federal Aviation Administration Airworthiness Directives Affecting MD Helicopters	
SL900- <u>044R1</u>	26 Jun 2000	Availability of Federal Aviation Administration Supplemental Type Certificates for MD Helicopters	
SL900- <u>045</u>	29 Jun 2000	Anti-Torque Fan Inlet Screen	
SL900- <u>047</u>	02 Mar 2001	New Standard Warranty Statement	
SL900- <u>048</u>	17 Sep 2002	Availability of New Engine Alignment Tool	
SL900- <u>049</u>	10 Dec 2002	Prolonging the Life of the Integrated Instrument Display (IIDS)	
SL900- <u>050</u>	21 Mar 2003	Integrated Instrumentation Display System (IIDS) Mod 3	
SL900- <u>051</u>	17 Sep 2003	Availability of MDHI Publications in Electronic Format	
SL900- <u>052</u>	29 Mar 2005	Calculation of One Engine Inoperative (OEI) Excursions Cumulative Log Time For 900A3720002–113 and 900A3720002–121 IIDS	
SL900- <u>053</u>	13 Sep 2005	Anti-Torque Control Pedal Separation	
SL900- <u>054</u>	06 Feb 2008	Main Rotor Hub Fretting Buffer and O-Ring Packing	
SL900- <u>055</u>	13 Feb 2007	Thruster Control Cables	
SL900- <u>056</u>	19 Jun 2007	Main Rotor Blade Retention Bolt Check	
SL900- <u>057</u>	30 Nov 2007	Collective Control Position Transducer Linkage	
SL900- <u>058</u>	27 Dec 2007	NOTAR® Fan Tension-Torsion Strap Replacement	
SL900- <u>059</u>	04 Jan 2008	Honeywell EFIS IFR STC (SR00436WI-D)	
SL900- <u>060R1</u>	20 Jun 2008	Better Oil Transmission Hoses	
SL900- <u>061</u>	13 Feb 2009	IIDS Maximum Number Limits	
SL900-062		Not Issued	
SL900- <u>063</u>	24 Jun 2009	Main Rotor Balde Retention Bolt Check	
SL900- <u>064</u>	29 Jul 2009	Main Rotor Balde Retention Bolt	
SL900- <u>065R2</u>	07 Apr 2011	Installation of Engine Ground Studs	
SL900- <u>066</u>	27 Oct 2009	Main Rotor Drive Plate O-Ring Packing	



MD900 Service Letters (Cont.)			
Publication	Issue/Reissue Date	Publication Title	
SL900- <u>067</u>	09 Nov 2009	Landing Gear Damper Assembly and Sealing Compound	
SL900- <u>068</u>	14 Jan 2010	Thruster Assembly Washer Modification	
SL900- <u>069</u>	26 Jan 2010	Bendix/King by Honeywell – Wingman Services: Database Downloads and EGPWS Updates	
SL900- <u>070</u>	06 May 2010	Helicopter Operation in Volcanic Ash Atmosphere	
SL900- <u>072</u>	23 Jul 2010	Air-Conditioning System Maintenance	
SL900- <u>073</u>	03 Aug 2010	Honeywell GPS Navigator	
SL900- <u>074</u>	15 Oct 2010	Servicing the Mast Support Base Assembly	
SL900- <u>075</u>	22 Dec 2010	Technical Publications Price Increase	
SL900- <u>076</u>	21 Apr 2011	Operation in a Corrosive Environment	
SL900- <u>077</u>	14 Oct 2011	Bendix King by Honeywell KRA 405B Radio Altimeter	
SL900- <u>078</u>	26 Mar 2013	Inspection of Goodrich Hoist Motors	
SL900- <u>080R1</u>	16 Dec 2022	Procedures for Service and Operations Reports	
SL900- <u>081</u>	11 Mar 2015	New Blade Retention Bolts Available	
SL900- <u>082</u>	20 Mar 2015	Repair for the Engine Control System Rotary Switch Knob	
SL900- <u>083</u>	31 Mar 2017	Transfer of All Technical Publications into MyMD.aero™	
SL900- <u>084</u>	15 May 2018	Addition of a Software Configuration List to the Rotorcraft Log Book	
SL900- <u>085</u>	15 Apr 2020	How to Clean and Disinfect the Helicopter	
SL900- <u>086</u>	26 May 2020	Use of Engine Fuel Biocides	
SL900- <u>087</u>	09 Oct 2020	Garmin GPS and TAWS Alerts Service Advisory	
SL900- <u>088</u>	25 Mar 2022	New Thruster Control Bearings Available	
SL900- <u>089</u>	06 Oct 2022	MD Helicopters Name Change	



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**DATE: 22 JUNE 2000** 

PAGE 1 OF 1

**SUBJECT:** P&WC POWERPLANT PUBLICATIONS AVAILABILITY, REQUIREMENTS AND DISTRIBUTION INFORMATION.

\* Supersedes SL900-002, dated 10 May 1995.

**MODELS AFFECTED:** All MD-900 Series helicopters.

The purpose of this letter is to inform all MD-900 owners and operators of the availability and requirements for Pratt & Whitney Canada technical publications.

To ensure the continued airworthiness of the powerplant and its accessories, the owner/operator must comply with the applicable powerplant publications. If your are not receiving powerplant publications updates or are unsure of your powerplant publication revision service status, please contact P&WC publications distribution personnel.

The initial set of powerplant publications are provided with the helicopter at delivery. At that time, the powerplant publications revision service is also coordinated between owner/operator and the powerplant manufacturer. This will ensure that the helicopter owner/operator receives updates to the powerplant publications (such as; Operation and Maintenance Manual, Parts Manual, Service Bulletins, Service Letters, etc.). These powerplant publications are available at the P&WC Technical Publications Extranet site on the Internet at: "www.pwc.ca". P&WC Service Information Letter No. GEN-060, dated 14 February 2000, provides instructions on obtaining access to the P&WC Technical Publications Extranet sire.



**DATE: 15 MAY 1995** 

PAGE 1 OF 3

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 outboard 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.



DATE: 15 MAY 1995 PAGE 2 OF 3

# CAUTION

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

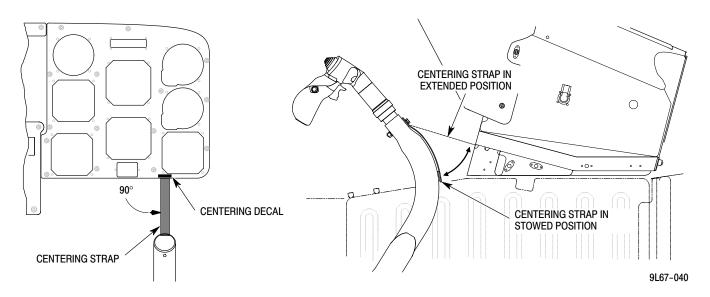
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McDonnell Douglas Helicopter Systems

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.



DATE: 15 MAY 1995 PAGE 3 OF 3



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)



DATE: 11 NOVEMBER 1995

PAGE 1 OF 2

**SUBJECT:** IMPROVED RIG PIN ACCESS FOD COVERS

MODELS AFFECTED: All McDonnell Douglas Helicopter Systems (MDHS) MD900 series helicopters.

The purpose of this letter is to inform all MD900 helicopter owners and operators of the optional modifications to two of the upper deck FOD covers, which can be accomplished by field maintenance.

Holes can be installed in specific positions on the collective/longitudinal and lateral FOD covers to eliminate the need to remove the covers for flight controls rigging and rigging verification. Rig pin insertion can be done through the respective access holes.

Hole plugs are to be installed when the aircraft is not being serviced and during normal flight operations to prevent foreign objects or debris from entering the rig pin access holes. Plugs can be procured by contacting MDHS Parts Sales.

The part number for the hole plug is: 11394M (5 required).

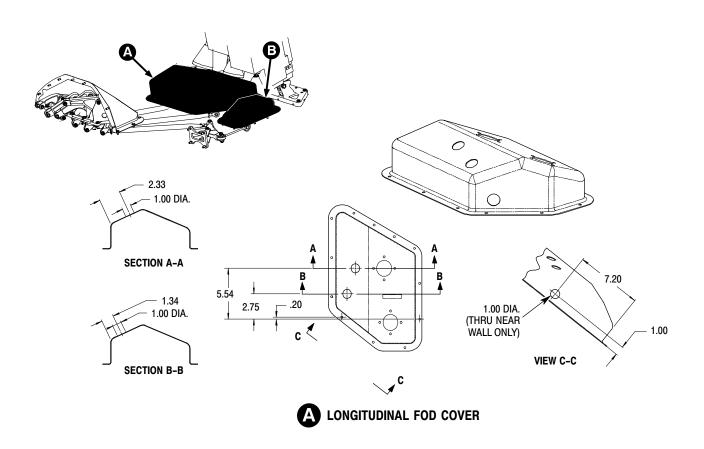
John Reagan, Dept. Manager, Commercial Customer Support McDonnell Douglas Helicopter Systems

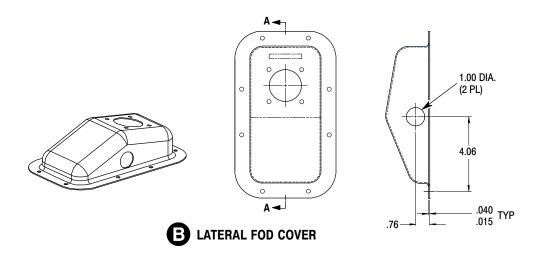
**POINTS OF CONTACT:** For further assistance, contact the Field Service Department at MDHS, Mesa Arizona. Telephone: 1-800-388-3378 or (602) 891-6342. DATAFAX: (602) 891-6782.



**DATE: 11 NOVEMBER 1995** 

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9L67-002

Figure 1. Improved Rig Pin Access FOD Covers



**DATE: 11 NOVEMBER 1995** 

PAGE 1 OF 2

**SUBJECT:** PEDAL RETURN SPRINGS

MODELS AFFECTED: All McDonnell Douglas Helicopter Systems (MDHS) MD900 series helicopters.

The purpose of this letter is to inform all MD900 helicopter owners and operators to remove the directional pedal return springs at their option.

MDHS engineering has determined the pedal return springs (which return the pedals to their full aft position during pedal adjustments) are not required. Aircraft in the future (S/N's 35 and subsequent) will be equipped with a new or re-identified pedal assembly without the provisions for the pedal return springs.

Owners and operators may continue to operate the aircraft with the return springs installed or, may remove the springs, arbors and attaching hardware at any time during normal maintenance practices.

If the springs are removed, the existing pedal assemblies should be re-identified as a 900C6012007 modified part using contrasting ink or paint.

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

**POINTS OF CONTACT:** For further assistance, contact the Field Service Department at MDHS, Mesa Arizona. Telephone: 1-800-388-3378 or (602) 891-6342. DATAFAX: (602) 891-6782.



9L67-001

# **SERVICE LETTER**

**DATE: 11 NOVEMBER 1995** 

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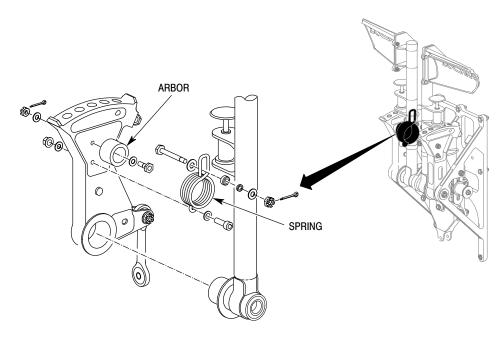


Figure 1. Pedal Return Springs Removal



**DATE: 22 SEPTEMBER 1995** 

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TO: All Owners and Operators of McDonnell Douglas Helicopter Systems

(MDHS) MD900 Series Helicopters.

**SUBJECT:** AIRCRAFT MODIFICATION LIMITATIONS AND STC INSTALLATIONS.

MDHS has received reports that MD900 helicopters are being modified by STC holders in a manner that may be affecting the structural integrity of the airframe and the fire safety provisions. Such modifications could jeopardize continued compliance with various FAA regulations to which the MD900 was type certified. Modifications to the MD900 airframe by altering, modifying by drilling holes, or installing kits not approved as part of the type design is not allowed without adequate substantiation submitted to the FAA by the STC applicant. Such alterations could pose potential safety problems.

Many design aspects of the MD900 cannot be modified or changed. Some of those design features are as follows:

**Fire safety protection** consists of flammable fluid containment devices (shields, deflectors, drip pans, etc.), shrouded fuel lines, flame resistant flexible oil bleed air and hydraulic lines, and secondary locking devices on all flammable fluid lines (FAR 27.861 and 27.863).

**Structural Integrity** is another design consideration. The MD900 is certified to FAR 27, Amendment 26. Particular attention should be given to FAR 27.561 (emergency landing) and FAR 27.562 (crash attenuating seats). The composite airframe structure must not be modified without adding reinforcement to return the modified structure to original strength. Areas requiring particular attention include:

- 1. The fuselage shell around the baggage compartment from station 230 (aft cabin frame) to the tailboom attach frame.
- 2. The cabin and baggage compartment floors.

**Tailboom** modifications are not allowed in the composite structure between the metal fuselage attach frame and the metal empennage attach frames. Modifications may be made to the tailboom fairing below the horizontal stabilizer.



**DATE: 22 SEPTEMBER 1995** 

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**POINTS OF CONTACT:** Please contact the MDHS Field Service Department for

assistance with recommended materials and processes for modifications. Telephone: 1-800-388-3378 or (602) 891-6342. DATAFAX: (602) 891-6782.

John Reagan, Dept. Manager, Commercial Customer Support

McDonnell Douglas Helicopter Systems





**DATE: 6 DECEMBER 1995** 

PAGE 1 OF 1

SUBJECT: MD 900 DIRECTIONAL CONTROL INPUTS

This Service Letter provides MD900 flight crews with information that should enable pilots to fly more smoothly and improve passenger comfort.

In the MD 900 helicopter, directional control inputs are required for airspeed and power changes; however, little or no directional control input is required for a coordinated turn in forward flight. Significant sideslip may occur if the directional axis is overcontrolled. Accordingly, pilots should take advantage of the inherent low workload in the MD 900 directional axis and minimize pedal activity.

Excessive sideslip can result in insufficient lateral cyclic for the desired roll response. As an example, large left sideslip angles will reduce the left cyclic margin. In a flight condition with large sideslip angles, MD 900 directional characteristics can be used to enhance lateral control. If lateral cyclic margin appears to be inadequate, pedal should be applied in the desired roll direction.

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.



**DATE: 19 JANUARY 1996** 

PAGE 1 OF 1

SUBJECT: INTEGRATED INSTRUMENTATION DISPLAY SYSTEM (IIDS) -

CMA2055

MODELS AFFECTED: All McDonnell Douglas Helicopter Systems (MDHS) MD900 Series helicopters equipped with IIDS, P/N 900A3720002-105.

MDHS has discovered that existing software for the BMS system may permit the BMS board to freeze occasionally. This cover letter is to inform all owners/operators of a software problem and the means by which an interim corrective measure can be implemented.

The Balance Monitoring System (BMS) database can become corrupted, whereby the existing software permits the BMS board to freeze occasionally. One symptom is the inability to enter the BMS menus using the IIDS keypanel. Another is BMS malfunction when providing track and balance monitoring or display. BMS malfunctions only affect maintenance functions of the MD900 helicopter. None of the operational functions of the helicopter are affected.

Canadian Marconi Company Service Information Letter (S.I.L. No. 95–05, dated December 8, 1995 or later) provides operators with an interim solution to the problem. The S.I.L. is attached to this cover letter.

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.



**DATE: 05 APRIL 1996** 

PAGE 1 OF 5

SUBJECT: COCKPIT DOOR LATCHING MECHANISM MODIFICATION

**INSTRUCTIONS** 

MODELS AFFECTED: All McDonnell Douglas Helicopter Systems (MDHS) MD900 series helicopters, serial numbers up to and including 900–00040, that have not been modified at MDHS.

#### 1. PLANNING INFORMATION:

- **A.** <u>Assembly/Components Affected by this Notice</u>: Cockpit Door Latching Mechanism, P/N 900F3305181-101.
- **B.** Reason: The purpose of this letter is to inform all MD900 helicopter owners and operators of the optional modification that upgrades the cockpit door latching mechanism to the new and improved latch system configuration. This task can be accomplished by normal field maintenance. In the future, only the new configuration latching mechanism components will be provided as a spare. Customers will need to perform this modification if repairs are required to the old configuration components.
- **C.** <u>Description</u>: Procedures in this Letter provide operators with instructions to modify the existing Cockpit Door Latching Mechanism, P/N 900F3305181-101/-102 to the upgraded configuration, P/N 900F3305187-101/-102.
- **D.** <u>Manpower</u>: Accomplishment of this modification will require approximately three (3) manhours.
- **E.** <u>Time of Compliance</u>: At owner/operators discretion. NOTE: "No Cost" parts for this modification will be available until 31 December, 1996.
- **F.** <u>Interchangeability</u>: Early configuration parts are not interchangeable with current (upgraded) configuration parts.
- **G.** Warranty Policy: N/A
- **H.** <u>Tooling</u>: No special tooling required.
- I. Weight and Balance: N/A
- J. Electrical Load Data: N/A
- **K.** Other Publications Affected: Rotorcraft Maintenance Manual (CSP-900RMM-2), Illustrated Parts List (CSP-900IPL-4) and Manufacturers Installation and Rigging Instructions (included with modification kit).



**DATE: 05 APRIL 1996** 

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**L.** <u>Material/Part Availability</u>: Replacement parts will be made available to owners/operators at no cost until 31 December, 1996.

#### **NOTE**

- Quantities reflect both LH and RH door latch modifications.
- Items agree with accomplishment task items.

# Cockpit Door Latching Mechanism Modification Kit P/N 900F3305187-101/-102

REPLACEMENT PARTS/SUPPLIES				
Items	Nomenclature	Part No.	Qty.	Source
17	Clevis, LH	(70180–1)	1	MDHS
16	Tube, Connecting	(66110-41)	2	MDHS
2	Clevis, RH	(70180–2)	1	MDHS
15	Clevis	(70181)	2	MDHS
21	Spring, Extension	(70136)	2	MDHS
7	Spring, Compression	(32142)	2	MDHS
25	Spacer	(70185)	2	MDHS
24	Screw, Pan Head (20021-414)	MS51957-48	2	MDHS
22	Clevis Pin (20063-213)	MS9463-07	2	MDHS
19	Clevis Pin	(70184)	2	MDHS
18	Washer, Flat	(31560)	4	MDHS
23	Washer, Flat (20027-206)	AN960-C10L	2	MDHS
4	Washer, Flat (20027-205)	AN960-C8	2	MDHS
20	Cotter Pin (20001-208)	MS24665-86	4	MDHS
8	Cotter Pin (20001-105)	MS24665-1001	2	MDHS
Part numb	ers in parenthesis ( ) are vendor nu	mbers.	•	

#### 2. ACCOMPLISHMENT INSTRUCTIONS:

Door Latch Modification Procedure (Ref. Figure 1)



**DATE: 05 APRIL 1996** 

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#### **NOTE**

Before removal, mark latch block assembly locations to allow latch blocks to be refitted in the original location after rework. The entire latching mechanism should be removed and laid on a suitable work bench.

**A.** Remove screws that attach entire latching mechanism (1) to door structure (including screws from outside door handle assembly (3)).

#### **NOTE**

Ensure spacers from door handle assembly stay in place by replacing screws loosely in holes.

- **B.** Remove compression springs (5) from door handle (3) by releasing screws (6).
- **C.** Replace springs (5) with replacement compression springs (7) and secure with existing screws (6).
- **D.** From upper latch block assembly (11), remove and discard cotter pin (8). Remove and retain washer (9) and clevis pin (10).
- **E.** Except for that of the lower latch block assembly (12), remove and discard remainder of cotter pins (8).
- **F.** Remove and retain remainder of washers (9) and clevis pins (10).
- **G.** Remove link (13) from upper end of lower push/pull rod (14).
- **H.** Install clevis (15) onto connecting tube (16).
- **I.** Attach to upper latch block (11) using washer (9) and clevis pin (10). Install new cotter pin (8).
- **J.** Install LH clevis (17) onto upper end of lower push/pull rod (14).

#### **NOTE**

For right hand cockpit door latch modification use RH clevis (2).

- **K.** Attach to door handle assembly (3) using washer (18) and clevis pin (19). Install new cotter pin (20).
- **L.** Attach clevis (17) to connecting tube (16) and extension spring (21) using clevis pin (22) and washers (18 and 23). Install new cotter pin (20).
- M. Re-install modified latching mechanism (1) to door structure using original screws.
- **N.** Secure extension spring (21) to door structure in remaining unused hole using screw (24), spacer (25) and washer (4).



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**O.** Verify door latching mechanism operation per revised rigging instructions document provided with door modification kit.



DATE: 05 APRIL 1996 PAGE 5 OF 5

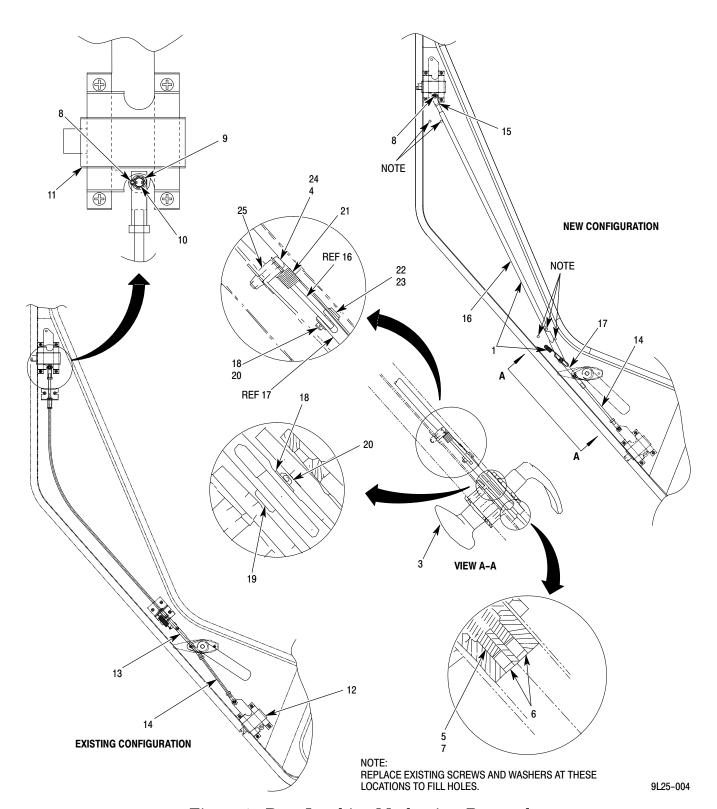


Figure 1. Door Latching Mechanism Removal



DATE: 05 APRIL 1996 PAGE 6 OF 5

#### Legend (Ref. Figure 1)

- 1. LATCHING MECHANISM
- 2. CLEVIS, RH \* (NOT SHOWN; ILLUSTRATION SHOWS LEFT HAND CONFIGURATION ONLY)
- 3. HANDLE ASSEMBLY
- 4. WASHER \*
- 5. COMPRESSION SPRING
- 6. SCREW
- 7. COMPRESSION SPRING \*
- 8. COTTER PIN \*
- 9. WASHER
- 10. CLEVIS PIN
- 11. UPPER LATCH BLOCK ASSEMBLY
- 12. LOWER LATCH BLOCK ASSEMBLY
- 13. LINK
- 14. PUSH/PULL ROD
- 15. CLEVIS \*
- 16. CONNECTING TUBE \*
- 17. CLEVIS, LH \*
- 18. WASHER\*
- 19. CLEVIS PIN \*
- 20. COTTER PIN \*
- 21. EXTENSION SPRING \*
- 22. CLEVIS PIN \*
- 23. WASHER \*
- 24. SCREW \*
- 25. SPACER \*

#### NOTE

#### 3. DISPOSITION OF PARTS REMOVED:

All removed parts shall be scrapped.

#### 4. COMPLIANCE RECORD:

Record compliance to this Service Letter in the Compliance Record section of the helicopter Log Book.

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.

<sup>\*</sup> Replacement/New Parts



**DATE: 21 MARCH 1997** 

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\* Supersedes Service Letter SL 900-013, dated 16 May 1996.

#### **USE OF ALTERNATE FLOOR PANEL HARDWARE**

MODELS AFFECTED: All McDonnell Douglas Helicopter Systems (MDHS) MD900 series helicopters.

Alternate hardware (screws and bolts) has now been approved for use when installing MD900 floor panels. Stainless steel screws and bolts (NAS7803 and AN3 CRES of varying length) can now be substituted for titanium screws (NAS7903 of varying length) if operators choose to do so. Some advantages of using the stainless steel screws or bolts are: better wear, cost and availability. The use of stainless screws or bolts will increase the weight of the aircraft by approximately 1.3 pounds (0.6 kg).



Fastener lengths vary at different locations around each floor panel. Failure to install the correct length fastener may damage nutplates in the floor substructure or cause loss of fastener and possible FOD contamination. During panel removal, keep track of fastener locations by pressing fasteners into a sheet of cardboard in a pattern following the original hardware installation.

POINTS OF CONTACT: For further assistance, contact your local MDHS Field Service Representative (refer to 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. FAX: (602) 891–6782.





DATE: 21 MAY 1996

PAGE 1 OF 1

TO: ALL OWNERS AND OPERATORS OF McDONNELL DOUGLAS

HELICOPTER SYSTEM (MDHS) MD900 SERIES HELICOPTERS.

SUBJECT: TRIM ACTUATOR ASSEMBLY REPLACEMENT FOR AUTOPILOT

**OPTION** 

REASON: 900C3010004-107 trim actuators are required to be installed on aircraft

that are configured with a Bendix/King IFR package or with Bendix/King auto-pilot options installed. Any aircraft equipped with a -107 actuator that requires an actuator replacement, must be retrofitted with the -107 or later configuration actuators. Failure to install a -107 trim actuator will

result in the auto-pilot being unable to perform it's functions.

The Rotorcraft Maintenance Manual (CSP-900RMM-2) contains instructions regarding the removal and installation of lateral and

longitudinal trim actuator assemblies.

#### **NOTE**

These procedures require removal of a resistor and splicing of the wires in the electrical system when installing a -107 or later configuration actuator. Failure to remove the resistor will result no or very slow trim actuator operation.

John Reagan, Manager,

flellon-

Commercial Customer Support

McDonnell Douglas Helicopter Systems



**DATE: 08 JULY 1996** 

PAGE 1 OF 2

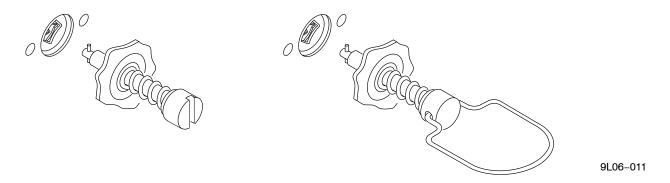
TO: ALL OWNERS AND OPERATORS OF MCDONNELL DOUGLAS

HELICOPTER SYSTEMS (MDHS) MD900 SERIES HELICOPTERS.

SUBJECT: TRANSMISSION ACCESS DOORS AND BATTERY DOOR FASTENER

UPGRADE. (REF. CR #110679)

MDHS is now offering upgraded locking hardware for the main transmission access doors and the battery access door. The improved locking hardware allows the operator to open those access doors without the use of any tools.



All slotted recess Camloc® fasteners used on the transmission access doors and battery access door may be replaced with the following folding bail handle type fasteners:

PARTS/SUPPLIES – BATTERY ACCESS DOOR				
Nomenclature Part No. Qty. Source				
Stud, Folding Bail Handle 26S22-4B or (HS4431-4G) 2 Camloc® or (MDHS)				
Retaining Ring, Solid	2600-LW or (HS4432-2)	2	Camloc® or (MDHS)	

PARTS/SUPPLIES - TRANSMISSION ACCESS DOORS						
Nomenclature	Part No. Qty.		Source			
Stud, Folding Bail Handle	40S47-5A or (HS4436F5N)	20	Camloc® or (MDHS)			
Grommet, 1/4 Turn Fastener *	4002-NS or (HS4434-4C)	20	Camloc® or (MDHS)			
Snap Ring, Retaining *	40G26-1 or (HS4424-1C)	20	Camloc® or (MDHS)			

<sup>\*</sup> **NOTE:** Original grommets and snap rings need not be replaced unless damaged.



**DATE: 08 JULY 1996** 

PAGE 2 OF 2

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.



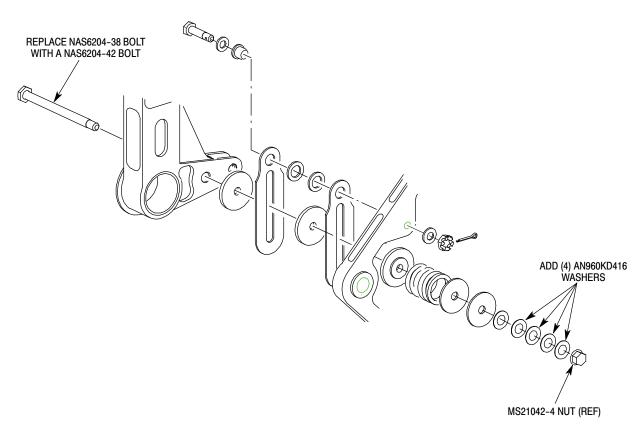
**DATE: 18 DECEMBER 1996** 

PAGE 1 OF 1

#### PEDAL FRICTION HARDWARE OPTION

**MODELS AFFECTED:** All McDonnell Douglas Helicopter Systems (MDHS) MD900 Series Helicopters.

Operators are now allowed to make a change to MD900 pedal assembly hardware that will allow pedal breakout forces to be maintained by providing additional adjustment capability. The NAS6204–38 bolt may be replaced with a NAS6204–42 bolt. Additionally, four AN960KD416 washers must be added under the MS21042–4 nut as shown in Figure 1. Removal of any number of AN960KD416 washers is acceptable to achieve required breakout forces.



9L67-016

Figure 1. Pedal Friction Hardware Change.



DATE: 20 DECEMBER 1996

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### **Station 203 Forward Ground Handling Wheel Location**

**MODELS AFFECTED:** All McDonnell Douglas Helicopter Systems (MDHS) MD900 Series Helicopters.

MD 900 operators having a normal aircraft operational loading which is at or near the limit of forward C.G. may find using the station 203 forward ground handling wheel attachment point beneficial for increased ease of ground handling. If during ground handling, it is found that the aircraft is nose heavy and difficult to handle, the use of the forward ground handling wheel location will give a more balanced location for ground handling.

If an operator elects to use the station 203 forward ground handling wheel location, they must perform the additional inspection requirements identified in the latest revision of CSP-900RMM-2, Section 05-00-00.

Record compliance to this Service Letter in the Compliance Record section of the helicopter Log Book.



DATE: 3 JANUARY 1997

PAGE 1 OF 2

\* Supersedes Service Leter SL 900-020, dated 20, December 1996.

### **Hoist Inspection Hole Installation**

MODELS AFFECTED: All McDonnell Douglas Helicopter Systems (MDHS) MD900 Series Helicopters having a hoist installed.

**1. <u>DESCRIPTION:</u>** This Letter provides operators with instructions to modify their hoist fairing to provide access for inspection.

MATERIAL				
Nomenclature	Source			
Primer MIL-P-23377	Commercial			
Topcoat to match hoist fairing	Commercial			
280 grit sandpaper or finer	Commercial			
2 inch diamond tipped hole saw	Commercial			

#### 2. ACCOMPLISHMENT INSTRUCTIONS:

(Ref. Figure 1)

**A.** Locate hole as shown in Figure 1.

**CAUTION: Protective Equipment** 



- **B.** Cut hole in fairing bulkhead.
  - 1). Pilot hole with a high speed drill to match hole saw pilot size.
  - 2). Cut hole to size with a 2 inch diamond tipped hole saw.
  - 3). Smooth edge with 280 grit sandpaper or finer.

**CAUTION: Epoxy Primer and Coating** 









- 4). Seal edge of hole with primer and topcoat.
- **3.** <u>COMPLIANCE RECORD:</u> Record compliance to this Service Letter in the Compliance Record section of the helicopter Log Book.



DATE: 3 JANUARY 1997

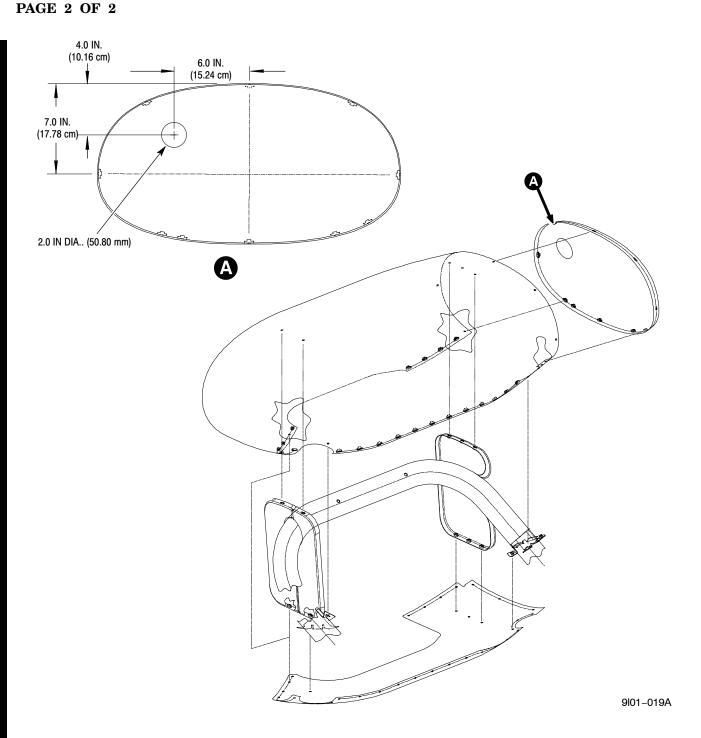


Figure 1. Inspection Hole location



DATE: 09 NOVEMBER 2009

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\*Supercedes Service Letter SL 900-021R1, dated 3 January 1997.

### **CABIN SEAT - 4 POINT RESTRAINT SYSTEM OPTION**

**MODELS AFFECTED:** All MD900 helicopters that have the 3 point cabin seat restraint system installed.

\*MDHI has certified an upgraded 4 point cabin seat restraint system as a replacement to the 3 point system. The 900N3202141-101, -103, and-105 cabin seat can be changed to accept the new 4 point restraint. The four point restraint can be installed on the 900N3202141-107 cabin seat without change. New 4 point restraints (4-01-225501, 4-01-115501) are to be procured directly from the manufacturer, refer to Replacement Parts/Supplies.

REPLACEMENT PARTS/SUPPLIES				
Item*	Nomenclature	Part No. Qty.		Source
8	Restraint Assembly	4-01-225501 4-01-115501 (Preferred Part)	1	Schroth Restraint Systems 1942 Broadway Suite 400 Boulder, CO 80302 (303) 447–1700
7	Bushing	900N5202000-5 or 5MD42103-001	1	MDHI
12	Bushing	900N5202000-7 or 5MD42002-006	2	MDHI
9	Screw	MS27039-4-28	2	Commercial
13	Nut	MS21042-4	4	Commercial
11	Washer	AN960C416L	2	Commercial
10	Washer	AN960KD616	2	Commercial
2	Spring Pin	MS16562-18	4	Commercial
6	Rivet	CR3213-5-3	11	Commercial
15	Washer	AN60-616L	4	MDHI or Commercial
16	Washer	AN60KD416	2	MDHI or Commercial
3	Fabric Assembly Clip	5MD42110-511	N/A	MDHI or Commercial
4	Hinge Fitting Assembly	5MD42110-509	N/A	MDHI or Commercial
14	Headrest	5MD42130-503	1	MDHI or Commercial

\*NOTE:REF. FIGURE 1 OF THIS SERVICE LETTER



DATE: 09 NOVEMBER 2009 SERVICE LETTER

PAGE 2 OF 4

MATERIAL				
Nomenclature Source				
Epoxy Primer (MIL-P-23377)	Commercial			

#### 1. ACCOMPLISHMENT INSTRUCTIONS:

(Ref. Figure 1)

- (1). Remove cabin seat (1) (Ref. CSP-900RMM-2, Section 25-20-00).
- (2). Remove 3 point restraint from seat (1). Keep removed hardware for installation of 4 point restraint.
- (3). Modify the 900N3202141-101, -103, -105 and -107 cabin seat as follows:
  - (a). Disconnect fabric clips (3) from hinge fitting (4).

**NOTE:** Headrest (14) can be removed to make it easier to change frame tube (5). To remove headrest remove spring pins (2).

- (b). Remove rivets (6) from fittings (4).
- (c). Remove frame tube (5).
- (d). Remove rivets (6) from fitting (4) on right side of frame tube (5).
- (e). Remove fitting (4) on right side of frame tube (5).
- **NOTE:** Drill pilot holes for bushing (12) and rivets (6) aligned the same as on left side of frame tube.
  - (f). Drill **0.20 in. (5.08 mm)** pilot hole for bushing (12) in frame tube (5).
  - (g). Drill **0.10 in. (2.54 mm)** pilot holes for rivets (6) in frame tube (5).
  - (h). Put bushing (7) in frame tube (5).
  - (i). Align pilot holes for bushing (12) in bushing (7) and frame tube (5).
  - (j). Drill four rivet holes, use a number 21 drill **0.159 in. (4.0386 mm**).

#### **Epoxy Primer and Coating**









- (k). Install rivets (6). Install wet with epoxy primer.
- (l). Align hole for bushing (12) to match installation on left side of frame tube assembly.
- (m). Drill a **0.355-0.356 in. (9.017-9.0424 mm)** hole through frame tube (5) and bushing (7).
- (n). Identify tube (5) as 900N5202000-3.



DATE: 09 NOVEMBER 2009

PAGE 3 OF 4

(o). Install tube (5) and fitting assemblies (4) in seat (1).

#### **Epoxy Primer and Coating**









- (p). Install rivets (6). Install wet with epoxy primer.
- (q). Install fabric clips (3) on fittings (4).
- (r). If removed, install headrest (14). Use new spring pins (2).
- (4). Install new restraint (8) on seat frame.
  - (a). Install Upper attachments hardware. Ref Figure 1 detail C
  - (b). Install Lower attachments hardware. Ref Figure 1 detail D
  - (c). Torque Nuts (Ref. CSP-SPM, Section 20-10-00)
- (5). Identify seat (1) as 900N5202000-103 adjacent to name plate.
- (6). Install cabin seat (Ref. CSP-900RMM-2, Section 25-20-00).

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.



DATE: 09 NOVEMBER 2009

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# **SERVICE LETTER**

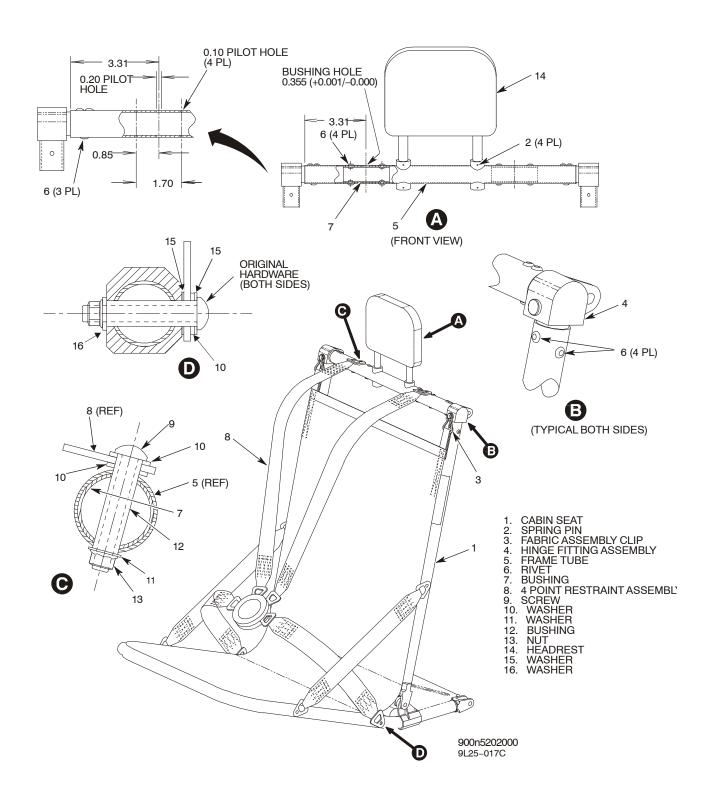


Figure 1. Seat Modification for 4 Point Restraint System



**DATE: 3 JANUARY 1997** 

PAGE 1 OF 3

### BAGGAGE DOOR WINDOW INSTALLATION

MODELS AFFECTED: All McDonnell Douglas Helicopter Systems (MDHS) MD900 Series Helicopters.

At the discretion of the owner/operator, the baggage door vent cover may be removed and replaced with transparent window material. Instructions in this Letter provide customers with details to modify the baggage door vent opening to eliminate airflow either in or out of the baggage area.

REPLACEMENT PARTS/SUPPLIES					
Nomenclature Part No. Qty. Source					
Window, Baggage Door	900P2250135-101	1	Field Fabricate Locally		
Gasket, Door Window	900P2250136-101	1	Field Fabricate Locally		
Doubler, Door Window	900P2250137-101	1	Field Fabricate Locally		

#### 1. ACCOMPLISHMENT INSTRUCTIONS:

(Ref. Figure 1)

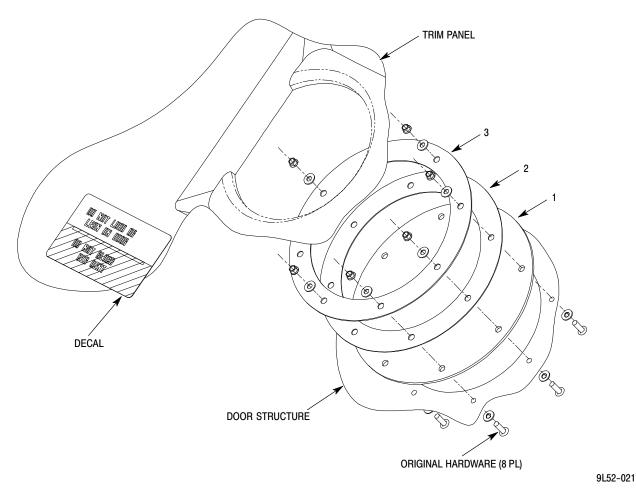
- **A.** Remove baggage door interior trim panel (Ref. CSP-900RMM-2, Section 25-50-00, Door Trim Panel Removal).
- **B.** Remove vent cover and retain original hardware for installation of window.
- **C.** Fabricate window, gasket and doubler per information in Figure 2.
- **D.** Install window (1), gasket (2) and doubler (3) onto door structure using original hardware per Figure 1.
- **E.** Install baggage door interior trim panel (Ref. CSP-900RMM-2, Section 25-50-00, Door Trim Panel Installation).
- **F.** Remove lower portion of existing decal, or paint over lower portion using flat black paint. Remaining decal should read: "Do Not Load Or Lean On Door."

POINTS OF CONTACT: For further assistance, contact your local MDHS Field Service Representative (refer to 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.



**DATE: 3 JANUARY 1997** 

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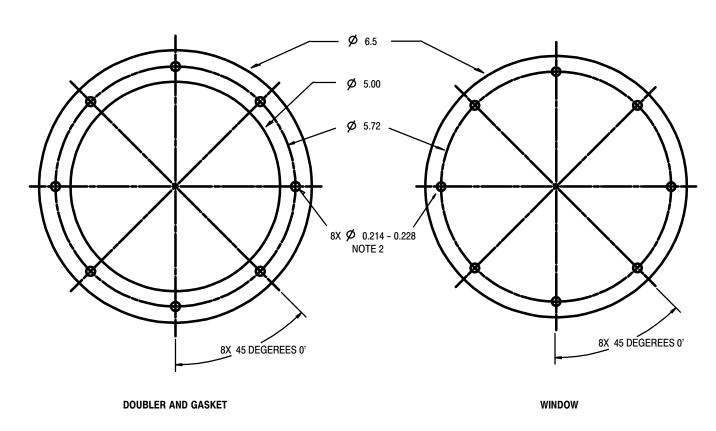
- 1. WINDOW
- 2. GASKET
- DOUBLER

Figure 1. Baggage Door Window Installation



**DATE: 3 JANUARY 1997** 

PAGE 3 OF 3



NOTES:

NOTE 1: ALL DIMENSIONS ARE IN INCHES

NOTE 2: USE EXISTING VENT AS TEMPLATE TO HELP DRILL HOLES

NOTE 3: DOUBLER MATERIAL; AL-ALY SH ALCD, 2024-T3, 0.040 INCH THK, QQ-A-250/5 OR EQUIVALENT
NOTE 4: GASKET MATERIAL; SILICONE SHEET, CL 2B GR 50 BLK, 0.031 INCH THK, ZZ-R-765 OR EQUIVALENT
NOTE 5: WINDOW MATERIAL; CLEAR POLYCARBONATE PLASTIC SHEET, 0.090 INCH THK, AMS3611 OR EQUIVALENT

9L25-023

Figure 2. Window, Doubler, Gasket, Fabrication and Layout



**DATE: 23 JANUARY 1998** 

PAGE 1 OF 2

\* Supersedes SL900-025 dated 08 January 1997. <u>Reason for Revision:</u> To allow installation of a spacer under the door handle to provide the handle better clearance from adjacent structure.

### CABIN DOOR HANDLE INSTALLATION

At the discretion of Boeing MD900 owners/operators, a cabin door handle may be installed to aid in closing the cabin door. Instructions in this Letter provide customers with details to fabricate a spacer, handle and install the handle and spacer to the cabin door.

#### 1. PLANNING INFORMATION:

#### A. Material/Part Availability:

All parts may be locally purchased from commercial sources.

REPLACEMENT PARTS/SUPPLIES					
Nomenclature Part No. Qty. Source					
Screw	HS4727-3-18 (or equivalent)	4	Commercial		
Polyetherimide Rod 1" Diameter	McMaster and Carr P/N - 8688K76	12 in.	Commercial		
Spacer, aluminum (field fabricate as shown in Figure 1.)	Aluminum plate, 0.375 in. thick	A/R	Commercial		

#### 2. ACCOMPLISHMENT INSTRUCTIONS:

(Ref. Figure 1)

The following tasks are typical for Left and Right Cabin Doors.

- (1). Fabricate handle per Figure 1, deburr holes and radius all edges.
- (2). Fabricate aluminum spacer as shown in Figure 1.
- (3). Remove screws from cabin door fitting indicated in Figure 1 and discard.
- (4). Install and tighten replacement screws, handle and spacer into screw holes of cabin door fitting indicated in Figure 1.

#### 3. COMPLIANCE RECORD:

Record compliance to this Service Letter in the Compliance Record section of the helicopter Log Book.



**DATE: 23 JANUARY 1998** 

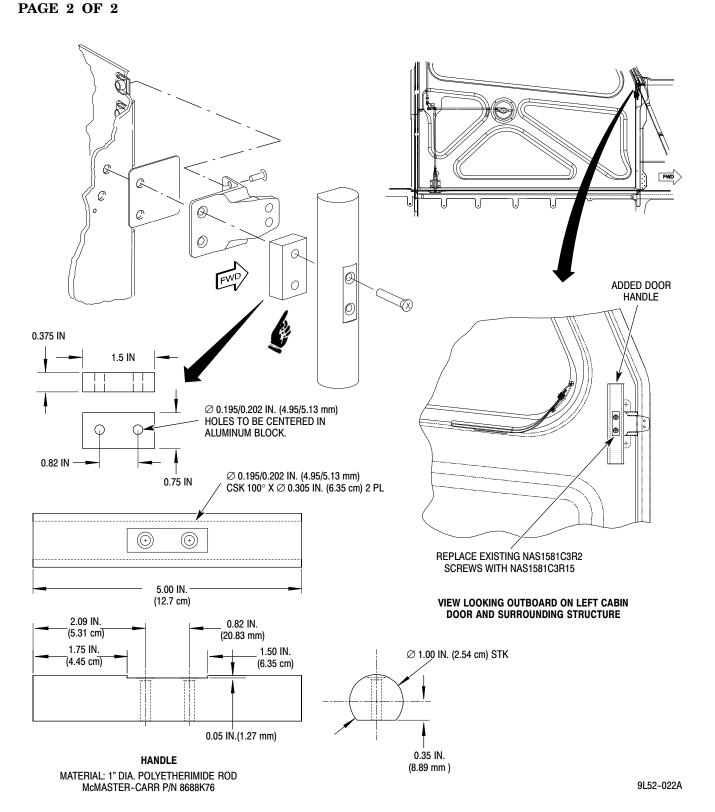


Figure 3. Cabin Door Handle Installation



**DATE: 17 MARCH 1997** 

PAGE 1 OF 1

# BAGGAGE COMPARTMENT CLOSEOUT PANEL INSTALLATION FOR UTILITY INTERIORS (NOISE REDUCTION)

MODELS AFFECTED: All McDonnell Douglas Helicopter Systems (MDHS) MD900 Series Helicopters equipped with utility style interiors.

MDHS is allowing MD900 operators to modify their utility interior configurations to incorporate the installation of the JEC 7144 closeout panel that is currently installed on commercial/executive version aircraft. This closeout panel will provide separation between the baggage compartment and cabin area and will reduce noise levels in the cabin area.

To incorporate this modification, operators must remove the existing JEC 7073-1 aft bulkhead panel prior to installing the JEC 7145-1 aft bulkhead panel and JEC 7144-1 baggage compartment closeout panel.

REPLACEMENT PARTS/SUPPLIES					
Nomenclature Part No. Qty. Source					
Panel, Baggage Closeout	JEC 7144-1	1	AIM Aviation Ltd., Jecco House, Boscombe Grove Road Bournemouth. Dorset. BH1 4PD, United Kingdom		
Panel, Aft Bulkhead	JEC 7145-1	1	AIM Aviation Ltd.		



**DATE: 05 MAY 1997** 

PAGE 1 OF 1

#### STROBE LIGHT CIRCUIT BREAKER

MODELS AFFECTED: All McDonnell Douglas Helicopter Systems (MDHS) MD900 Series Helicopters Serial number 00002 thru 00051.

- **1. <u>DESCRIPTION:</u>** This Letter provides operators with instructions to replace the 5 AMP strobe light circuit breaker with a 7.5 AMP circuit breaker at the discretion of the owner/operator.
- **2. REASON:** When starting the aircraft, using battery power with the strobe light on, the increased current drawn by the light may trip the 5.0 AMP strobe light circuit breaker which causes the strobe light to become inoperative.

REPLACEMENT PARTS/SUPPLIES					
Nomenclature Part No. Qty. Source					
Circuit Breaker 7.5 AMP MS3320-7-1/2 1 MDHS					

#### 3. ACCOMPLISHMENT INSTRUCTIONS:

**REFERENCE PUBLICATIONS:** CSP-900RMM-3 Section 96-00-00 and 96-30-00.

#### NOTE

These instructions are for a standard aircraft. Optional equipment installations may have previously changed the configuration of the A620 panel.

- **A.** Modify the A620 electrical load center circuit breaker panel.
  - 1). Access the A620 panel.
  - 2). Remove the existing 5 AMP CB22 (strobe light power).
  - 3). Install new 7.5 AMP CB22.
  - 4). Secure the A620 panel.
- **4.** <u>COMPLIANCE RECORD:</u> Record compliance to this Service Letter in the Compliance Record section of the helicopter Log Book.



**DATE: 14 MAY 1997** 

PAGE 1 OF 2

### AFT JACK PAD ACCESS HOLE

**MODELS AFFECTED:** All McDonnell Douglas Helicopter Systems (MDHS) MD900 Series Helicopters.

**1. <u>DESCRIPTION:</u>** This Letter provides operators with instructions to modify their aft landing gear crosstube fairing to allow aft jack pad installation without removing the fairing.

REPLACEMENT PARTS/SUPPLIES					
Nomenclature Part No. Qty. Source					
Hole Saw, 1 1/4 in. diameter or equivalent		1	Commercial		
Primer	MIL-P-23377	AR	Commercial		
Chemical Film	Iridite 14-2 or equivalent	AR	Commercial		

#### 2. ACCOMPLISHMENT INSTRUCTIONS:

(Ref. Figure 1)

- **A.** Remove aft landing gear fairing (Ref. CSP-900RMM-2, Section 06-00-00).
- **B.** Modify fairing as follows:
  - 1). Locate holes in fairing and cut holes.

#### **NOTE**

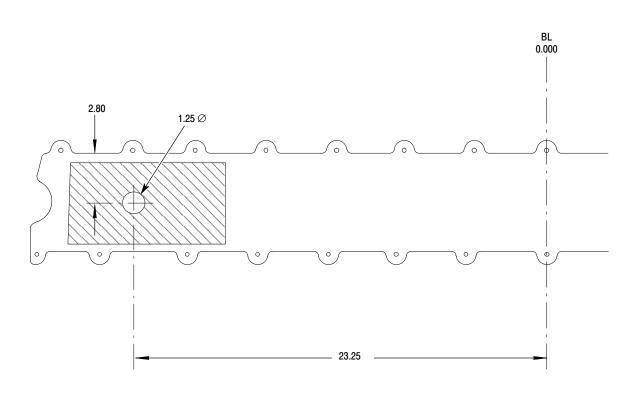
Hole location is not accurate for all aircraft. Check dimension on aircraft from BL 0.000 screw hole to insert in landing gear saddle fitting.

- 2). Deburr holes and touch up with chem film and primer.
- **C.** Reinstall fairing.
- **3.** <u>COMPLIANCE RECORD:</u> Record compliance to this Service Letter in the Compliance Record section of the helicopter Log Book.



**DATE: 14 MAY 1997** 

PAGE 2 OF 2



NOTE: DIMENSIONS SHOWN IN INCHES.

9L53-026

Figure 1. Crosstube Fairing Modification (Typical LH and RH)



**DATE: 26 JUNE 1997** 

PAGE 1 OF 1

#### **VENT SYSTEM AIR DUCT / ADDITIONAL AIR OUTLETS INSTALLATION**

MODELS AFFECTED: ALL McDonnell Douglas Helicopter Systems (MDHS) MD900 Series Helicopters, serial numbers 00010 thru 00038.

MDHS has assembled two kits (Vent System Air Duct Installation, P/N 900P5250305 and Additional Air Outlets Installation, P/N 900P5250308) which, when installed, will improve environmental conditions inside the helicopter during operation. These kits will increase output flow and provide additional air outlets in the vent and air conditioning system.

Contact MDHS Warranty and Repair Department to procure the kits listed above. Refer to Modification Instructions for Vent System Air Duct / Additional Air Outlets Installation, MOD MD9009500003 for installation instructions of the two kits.

**POINTS OF CONTACT:** For further assistance, contact your local MDHS Field Service Representative (refer to the "At Your Service" 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.



**DATE: 10 MARCH 2000** 

PAGE 1 OF 1

\* Supersedes SL900-036, dated 09 October 1997. Reason for Revision: To remove reference to Pratt & Whitney Canada Service Bulletin 28122 (Cancelled) and add reference to Pratt & Whitney Canada Service Bulletin 28111.

### **ELECTRONIC ENGINE CONTROL (EEC) P&WC S.B. 28111**

**MODELS AFFECTED:** All MD900 Series Helicopters, serial numbers 00002 thru 00051.

Pratt & Whitney Canada (P&WC) Service Bulletin 28122 is cancelled and superseded by P&WC Service Bulletin 28111, which requires that the 3116655–12 EEC replace all previous configurations. MD900 operators should review P&WC Service Bulletin 28111 for compliance requirements.

**NOTE:** 3116655-12 EEC is one-way interchangeable with all prior EEC configurations.

POINTS OF CONTACT: For further assistance, contact your local MDHI Field Service Representative (refer to the latest version of the "At Your Service" handbook for address and telephone numbers) or contact the Field Service Department at MDHI, Mesa, Arizona. Telephone: 1–800–388–3378 or (480) 346–6387. DATAFAX: (480) 346–6813.



**DATE: 13 FEBRUARY 1998** 

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### SERVICE LETTER AND BULLETIN DESIGNATIONS

Light Helicopter Division Technical Publications has restructured service information documents in anticipation of document electronic access and transmittal. The service document letterhead has changed to reflect the current document designation. A Technical Bulletin designation has been added to the existing Service Bulletins and Service Letters and the document designation criteria has been defined below.

Document identification by the compliance requirements must be used and not the paper or border color; since, color information in a document can not be verified with local printing capabilities using black and white fax, dot matrix or laser printers for service documents transmitted electronically.

Older documents have been scanned and in some cases the format rearranged to match the current format; however the document technical content has remained the same.

Individual divider tabs are available for Service Bulletins, Technical Bulletins and Service Letters and will be mailed with this letter and can also be ordered separately.

#### 1. SERVICE INFORMATION DOCUMENT DESIGNATION

**Service Bulletins** are service documents containing technical procedures, generally affect aircraft safety, requires urgent attention by the operator, requires <u>mandatory compliance</u> and requires a record of accomplishment, and are issued for;

- special inspections/checks required to maintain the aircraft and/or components in safe operating condition (such as; special inspections/checks to detect a flaw or manufacturing error which could be one-time or performed until corrective action can be taken).
- reduction of existing life limits.
- to provide instructions and authority for inspection, repair, alteration, and/or rework of the helicopter and/or its components.
- to provide instructions and authority for retrofit of the helicopter or its components by modifying existing and/or incorporating new components.

**Technical Bulletins** are service documents containing technical procedures, not safety related, <u>no compliance requirement</u> (completed at owner/operator option), requires a record of accomplishment when instructed, and are issued for;

- providing instructions and authority for inspecting, repair, alteration, and/or rework of the helicopter and/or its components.
- providing instructions and authority for retrofit of the helicopter or its components by modifying existing and/or incorporating new components.



**DATE: 13 FEBRUARY 1998** 

PAGE 2 OF 2

### SERVICE LETTER

**Service Letters** are information documents which do not have a compliance requirement and are issued for;

- discussing field problems and highlight information already or scheduled to be incorporated in existing documentation.
- notifying operators of interchangeable or future spare part numbers of equipment which have no effect on aircraft safety, performance, maintainability and reliability.
- providing preliminary information of an impending Service Bulletin or Technical Bulletin.
- notifying operators of available or forthcoming modifications.
- notifying operators of changes in material finishes, protective coatings, etc.

#### 2. SERVICE INFORMATION NUMBERING EXPLANATION

The existing document numbering will remain as originally published to ensure traceability and verification of compliance; however, as the document is superseded by either a revision/reissue, its numbering will change to conform with current service document numbering. Service document numbering and type designation, during revision/reissue, will be based on the information designation criteria defined on the previous page.

**NOTE:** The document designation (SB, TB, SL) and the helicopter model designation are currently being used in the numbering prefix.

HELICPTER MODEL DESIGNATION		SERVICE DOCUMENT		
FAA	Marketing	SB	ТВ	SL
MD-900	MD Explorer	SB900-	TB900-	SL900-



**DATE: 13 OCTOBER 1998** 

PAGE 1 OF 1

### STRUCTURAL LOAD LIMITS OF MD900 FUSELAGE HANDLES

This letter is applicable to all McDonnell Douglas Helicopter Systems (MDHS) MD900 helicopters, serial number 00001 thru 00078.

This letter is to inform operators that there is a limit as to the amount of weight that can be applied to the forward and aft fuselage handles located at the edges of the transmission deck (WL 158). The forward handle weight limit is 100 pounds and the aft handle has a limit of 250 pounds. These handles should not be used as steps or as supports for platforms when performing maintenance or other functions.

Unit 00079 and subsequent forward and aft handles will each have a weight limit of 250 pounds. These handles should not be used as steps or as supports for platforms when performing maintenance or other functions.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.



**DATE: 19 FEBRUARY 1999** 

PAGE 1 OF 1

### TRANSFER OF OWNERSHIP OF LIGHT HELICOPTER LINE

In February of 1998, McDonnell Douglas Helicopter Company (MDHC), an indirect subsidiary of The Boeing Company, announced they were going to sell the commercial helicopter manufacturing business. During the ensuing months, MDHC received and evaluated several offers from other companys interested in purchasing our commercial helicopter product lines. In January 1999, MDHC and MD Helicopters Inc., (MDHI) an indirect subsidiary of RDM Holding, Inc., signed an agreement on an asset purchase of Boeing's MD500, MD600N® and MD Explorer® series of light helicopter product lines.

MD Helicopters, Inc. has stated that it will initially operate from existing Boeing facilities at Mesa, Arizona. MDHC will continue to provide technical and engineering support under contract to MD Helicopters.

Current MDHC employees will remain in their current positions in support of the light helicopter program for up to 120 days. Following that period, MDHC will be under agreement to provide various support (parts and technical) for two years, followed by an additional three years of technical support on an as needed basis. With the transition period, followed by the support agreements, we fully expect production, spares support, field support and publications will be uninterrupted.

In regards to certification and production issues, both H3WE (MD369/500N/600N series) and H19NM (MD900) Type Certificates (TC's) have been transferred to MDHI. This sales contract action requires MDHC to terminate the use of Production Certificate No. 410, which was in continuous use since the 1960's. MDHI intends to make application for their own PC, however that process could take upwards of six months. Therefore, MDHI has licensed back the rights of the TC's to MDHC who has already received a new Production Certificate No. 714NM. Please be aware that this new Production Certificate Number (714NM) will be evident on various documents to include sales orders and helicopter airframe data plates in the near future as newly manufactured parts and helicopters are built and delivered. Components, parts and helicopters manufactured before February 19, 1999 are identified by the old PC number (410) and should be considered totally acceptable.

MD Helicopters can be contacted at (602)891–8014, FAX (602)891–8018. MD Helicopters can also be located on the Internet at www.mdhelicopters.com.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.



**DATE: 10 JANUARY 2002** 

PAGE 1 OF 1

 $^{\ast}\,$  Supersedes SL900-042, dated 12 August 1999. Revised to ass new IIDS part numbers.

SUBJECT: INTEGRATED INSTRUMENTATION DISPLAY SYSTEM (IIDS)

**MODELS AFFECTED:** MD900 helicopters with P/N 900A3720002-107, -109, -111, -115, -117 or -119 IIDS.

MDHI has discovered that software for the -107 -109, -111, -115, -117 and -119 IIDS can in some cases lose the menu functions if the MENU button is pressed immediately after pressing the CLR button. This is to inform all owners/operators of a software problem and the means by which an interim corrective measure can be implemented.

After clearing a warning/caution advisory message in the two line alphanumeric display by pressing the CLR button, personnel should pause for a minimum of 2 seconds before pressing the MENU button. Failure to pause may result in a loss of IIDS menu functions. No IIDS operational functions including displays, fault recording, or exceedence recording are affected. Should the menu be lost, the problem can be cleared by cycling IIDS circuit breaker on the ESSENTIAL BUS panel. Do not recycle the IIDS circuit breaker during engine operation. The IIDS display functions will be lost during the power cycling.

None of the other operational functions of the helicopter are affected.

CMC Electronics, Inc. is aware of the software problem and proposes to fix the malfunction during the next software update.

POINTS OF CONTACT: For further assistance, contact your local MDHI Field Service Representative (refer to the latest version of the "At Your Service" handbook for address and telephone numbers) or contact the Field Service Department at MDHI, Mesa, Arizona. Telephone: 1–800–388–3378 or (480) 346–6387. DATAFAX: (480) 346–6813.



**DATE: 23 MAY 2000** 

PAGE 1 OF 1

# AVAILABILITY OF FEDERAL AVIATION ADMINISTRATION AIRWORTHINESS DIRECTIVES AFFECTING MD HELICOPTERS

TO: ALL OWNERS AND OPERATORS OF MD HELICOPTERS.

Federal Aviation Administration Airworthiness Directives affecting MD helicopters can be viewed and printed from the Internet at: "http://av-info.faa.gov/".

If Internet access is not available, owners and operators can contact the Federal Aviation Administration for information on obtaining paper or microfiche copies at the following address.

U.S. Department of Transportation Federal Aviation Administration Regulatory Support Division Airworthiness Program Branch, AFS-610 P.O. Box 26460 Oklahoma City, OK 73125-0460 FAX 405-954-4104



**DATE: 26 JUNE 2000** 

PAGE 1 OF 1

# AVAILABILITY OF FEDERAL AVIATION ADMINISTRATION SUPPLEMENTAL TYPE CERTIFICATES FOR MD HELICOPTERS

\* Supersedes Service Letter SL900-044, dated 05 June 2000. Revision 1 is issued to correct Internet address

#### TO: ALL OWNERS AND OPERATORS OF MD HELICOPTERS.

A listing of Federal Aviation Administration Supplemental Type Certificates for MD Helicopters can be viewed and printed from the Internet at: "http://www.faa.gov/avr/air/stc/stc/default.htm".

If Internet access is not available, owners and operators can contact the Federal Aviation Administration for information on obtaining paper or microfiche copies at the following address.

U.S. Department of Transportation Federal Aviation Administration Regulatory Support Division Airworthiness Program Branch, AFS-610 P.O. Box 26460 Oklahoma City, OK 73125-0460 FAX 405-954-4104

The listing provides a summary of FAA Supplemental Type Certificates (STC) for optional kit items applicable to MD helicopters. Contact the STC holder to obtain a copy of a particular STC.



**DATE: 29 JUNE 2000** 

PAGE 1 OF 2

### ANTI-TORQUE FAN INLET SCREEN

TO: ALL OWNERS AND OPERATORS OF MD-900 HELICOPTERS.

This Service Letter is issued to advise all owners and operators of possible cracks occurring in certain P/N 900F2611850-101 anti-torque fan inlet screens. These screens can be identified by weld beads between the mesh on the aft screen frame and weld beads on the screen itself (Ref. Figure 1).

If any of these screens are found or any broken strands are noted during the pilot's daily preflight check or any maintenance activity, contact the Field Service Department at MDHI, Mesa, Arizona by telephone at (800) 388–3378 or (480) 346–6387 for information on obtaining a replacement screen.



**DATE: 29 JUNE 2000** 

PAGE 2 OF 2

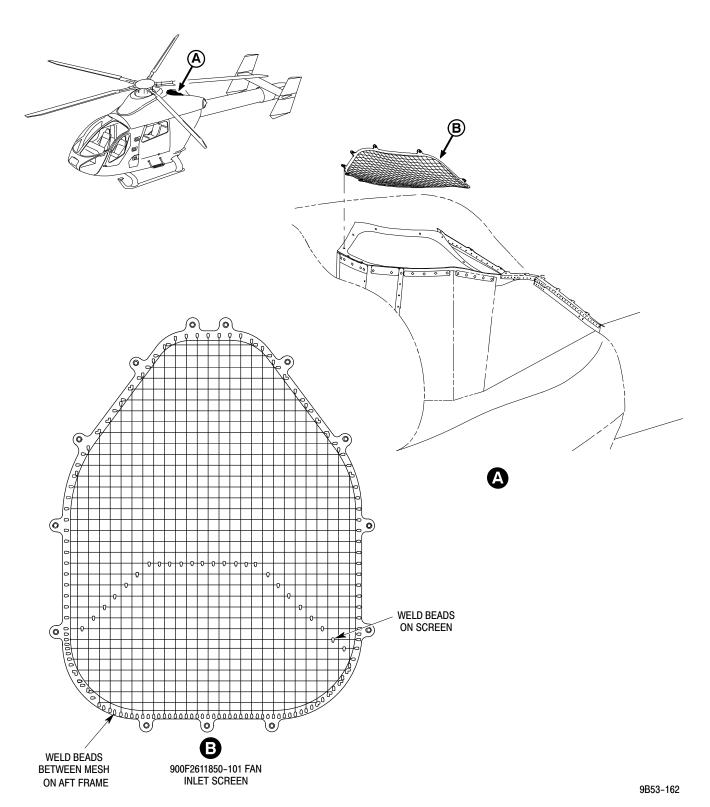


Figure 1. Anti-Torque Fan Inlet Screen





**DATE: 02 MARCH 2001** 

PAGE 1 OF 1

TO: ALL OWNERS AND OPERATORS OF MD HELICOPTERS.

**SUBJECT:** NEW STANDARD WARRANTY STATEMENT

The purpose of this letter is to inform all owners and operators of the new standard helicopter warranty of 2 years or 2,000 hours, prorated. This warranty applies to new helicopters and parts and does not supersede or or replace existing warranties. The new warranty is fully described in the revised Warranty & Exchange Program Information pamphlet (CSP-A-2), dated 1 November 2000, or later. The Warranty & Exchange Program Information pamphlet now includes information regarding the component exchange program and a labor allowance chart specifically for the MD900 series helicopter.



DATE: 17 SEPTEMBER 2002

PAGE 1 OF 1

TO: ALL OWNERS AND OPERATORS OF MD900 HELICOPTERS.

**SUBJECT:** AVAILABILITY OF NEW ENGINE ALIGNMENT TOOL

The purpose of this letter is to inform all MD900 owners and operators of the availability of the new Engine Alignment Tool (P/N 900P7600001-IG1) which replaces Engine Alignment Tool (P/N 900P7600001).

Use of the old tool could allow the driveshaft to be installed in compression, creating an unstable contact condition of the input quill lip seal during helicopter operation. Continued use of the old tool could result in oil leakage at the transmission inputs.

If an owner or operator purchased the old tool from MD Helicopters, Inc. (MDHI) and can provide MDHI proof of purchase, a new tool will be provided at not cost. To receive a new tool at no cost, an owner or operator must submit a Service Operations Report (SOR) with proof of purchase and return the old tool to MDHI.

Owners and operators that would like to purchase the new tool should submit a request for quote or a purchase order to MDHI through an MDHI Service Center.

The Engine Alignment Tool (P/N 900P7600001-IG1) is the only engine alignment tool currently approved by MDHI.





DATE: 10 DECEMBER 2002

PAGE 1 OF 1

TO: ALL OWNERS AND OPERATORS OF MD900 HELICOPTERS.

SUBJECT: PROLONGED THE LIFE OF THE INTEGRATED INSTRUMENT DISPLAY

SYSTEM (IIDS)

To enhance the life expectancy of the Integrated Instrument Display System (IIDS), it is recommended that all power be removed from the IIDS during extended ground power operations/maintenance when engine operation is not required. This is accomplished by opening the **IIDS** Circuit Breakers located on the Essential Bus Circuit Breaker Panel and Electrical Load Center. Ensure that the circuit breakers are reset after completion of the ground power operations/amiantenance.



**DATE: 21 MARCH 2003** 

PAGE 1 OF 1

### **INTEGRATED INSTRUMENT DISPLAY SYSTEM (IIDS) MOD 3**

**MODELS AFFECTED:** MD900 helicopters with P/N 900A3720002-107, -109, -111, -113, -115, -117, -119 or -121 IIDS.

MD Helicopters Inc. (MDHI) has discovered that under high temperature and high ambient light conditions, there is a possibility of the IIDS erroneously declaring a lamp failure of either one or both display backlighting lamps and turning off the lamp(s) with the erroneous failure detection. If this occurs, the IIDS is still operating, but the display will be either dim (one lamp off) or not visible (both lamps off). It takes approximately five minutes for the IIDS to turn the lamp off after the false lamp failure detection. Cycling electrical power to the IIDS will restart the lamps. There will be a fault log generated with the fault code message: IIDSFALT2 = 9 and/or 10, which are IIDS Primary and/or Secondary Filament Failure. Note that the IIDS detects the cockpit ambient light level using the light sensor in the upper center of the IIDS faceplate.

CMC Electronics, the manufacturer of the IIDS, has determined that this occurs due to an erroneous threshold level in the lamp failure detection logic. An IIDS modification that revises the threshold level has been approved to reduce the possibility of this event occurring. An IIDS with this modification is identified as MOD 3 level on the modification level label on the unit. All new IIDS will be the MOD 3 configuration. All IIDS that are returned for maintenance or other upgrades will be modified to the MOD 3 configuration.

For further assistance, contact your local MDHI Field Service Representative or contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1–800–388–3378 or (480) 346–6387. DATAFAX: (480) 346–6813.



DATE: 17 SEPTEMBER 2003

PAGE 1 OF 1

#### AVAILABILITY OF MDHI PUBLICATIONS IN ELECTRONIC FORMAT

MD Helicopters, Inc. has received numerous requests for electronic technical manuals. In an effort to provide owners and operators with the most up to date information, MDHI is pleased to announce that Technical Manuals and Rotorcraft Flight Manuals for all MDHI model helicopters are available electronically on the MDHI website http://www.mdhelicopters.com. In addition, and in order to promote safety and reduce incidents, MDHI will provide e-mail notification of Service Bulletins and changes to Technical Manuals or Rotorcraft Flight Manuals. To register and obtain a password for this service go to http://www.mdhelicopters.com/pubs/etmhome.htm. There is no charge to register for either the e-mail notification service or access to the online electronic format Technical and Rotorcraft Flight Manuals.

MDHI plans to continue offering manuals in conventional print formats. Printed versions, which include updates, can be obtained by contacting the MDHI Publications Order Desk. Subscription service fees apply for conventional printed manuals.

On-line availability of MDHI helicopters Technical Manuals gives maintenance personnel timely access to up-to-date information which can be printed locally as needed. The on-line publications are in Adobe® Acrobat® PDF format with embedded hyper@links, but retain the look of the original paper manuals content. The move to on-line document distribution eliminates the administrative task in updating publications. The electronic update notification service will notify registered users via e-mail of new or revised MDHI Technical Manuals, Rotorcraft Flight Manuals, Service Bulletins, Service Letters, Technical Bulletins and applicable FAA Airworthiness Directives.

Other publications currently available at the MD Helicopters, Inc. website are: Service Bulletins, Service Letters, Technical Bulletins, FAA Airworthiness Directives, Overhaul Manuals, Illustrated Parts Catalogs, Part Price Lists, Publication Indexes, Publication Order Forms, Logbook Forms, Service & Operations Reports, Publication Change Requests, Rotorcraft Technical Descriptions, Marketing Brochures, Warranty & Exchange Book, Training Center Brochure, Service Center Listing, Distributor Listing and Contact numbers for Customer Support, Customer Training and Marketing personnel.

CD-ROM Electronic Technical Manuals (ETM) for MDHI model helicopters are also available from two companies, Aircraft Technical Publishers (ATP) and Avantext. Both companies develop, market, sell and support their own versions of a CD-ROM ETM. If CD-ROM subscriptions are required, they must be purchased directly from these companies.

Aircraft Technical Publishers (ATP)	Avantext
Aircraft Technical Publishers (ATP)	Avantext, Inc
101 South Hill Driver	340 Morgantown Road
Brisbane, CA 94005-9966	Reading, PA 19611
To order by phone, please call: 800-227-4610 (US & Canada) 415-330-9500 (Worldwide)	To order by phone, please call: 800-998-8857 (US & Canada) 610-796-2383 (Worldwide)
For more information or for ordering online: http://www.atp.com	For more information or for ordering online: http://www.avantext.com



**DATE: 29 MARCH 2005** 

PAGE 1 OF 1

### CALCULATION OF ONE ENGINE INOPERATIVE (OEI) EXCURSIONS CUMULATIVE LOG TIME FOR 900A3720002-113 AND 900A3720002-121 IIDS

The INTEGRATED INSTRUMENT DISPLAY SYSTEMS (IIDS) P/N 900A3720002–113 and 900A3720002–121 (IIDS) cumulative log can incorrectly calculate the accumulated 2.5 minute One Engine Inoperative (OEI) time. The OEI time recorded in the cumulative log can be greater than the OEI time recorded in the associated Exceedance Log. This error is conservative and should not be considered a safety of flight issue. This may however, result in early engine inspections or overhauls based on this erroneous data.

The EGT threshold used in the Cumulative Log calculation of the 2.5 minute OEI excursions and total time values is set below the actual threshold value of 900° C. The IIDS Exceedance recording function uses the correct EGT threshold for determining 2.5 minute OEI engine EGT exceedances. Therefore it is possible to have 2.5 minute OEI excursions and total time values in the Cumulative Log with no accompanying Exceedance Log. It is also possible to have more 2.5 minute OEI excursion time recorded in the Cumulative Log than recorded by the Exceedance Log in an actual exceedance event.

The Pratt & Whitney maintenance manual (05–10–00) requires an engine logbook entry for excursions into the EGT 2.5 minute OEI rating. MDHI recommends that **only** the 2.5 minute OEI time recorded by the IIDS Exceedance Log be used for this purpose. Instructions on how to download this information and view these logs as text files can be found in the CSP–900RMM–2 S3, MD Explorer Ground Based Maintenance Computer (GBMC) User Guide.



DATE: 13 SEPTEMBER 2005

PAGE 1 OF 2

#### ANTI - TORQUE CONTROL PEDAL SEPARATION

This Service Information Letter is issued to inform owners and operators of MD900 helicopters of an accident where an anti-torque control pedal separated from the pedal shaft assembly. This incident is under investigation. A possible cause may be poor penetration on the fillet weld on the pedal support plate and fatigue (Ref. Figure 1).

If a pedal should separate from the shaft, anti-torque control can be maintained by the pilot placing his foot on the pedal shaft to maintain directional control. If this occurs in flight, perform a normal landing as soon as possible.



**DATE: 13 SEPTEMBER 2005** 

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# **SERVICE LETTER**

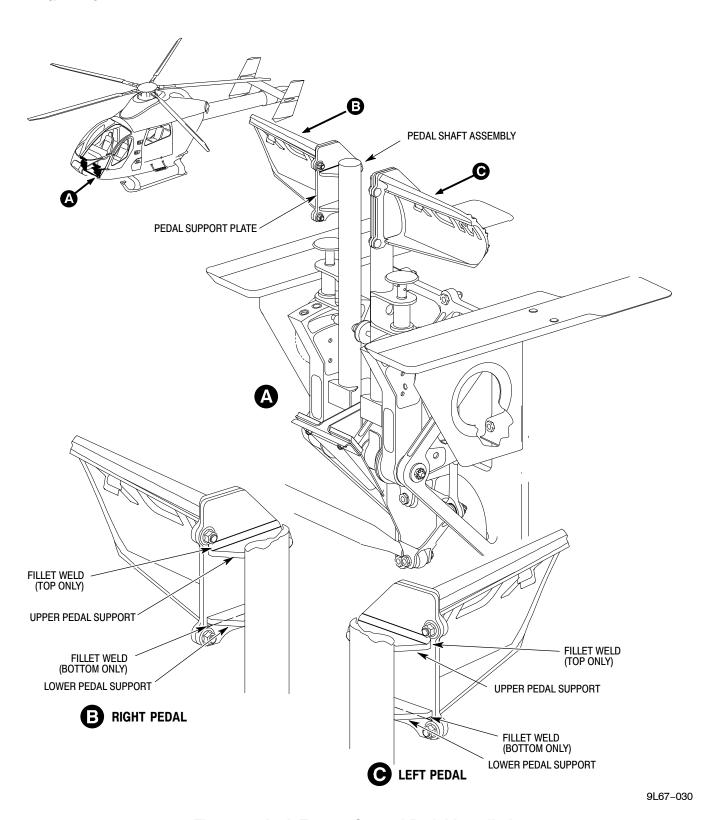


Figure 1. Anti-Torque Control Pedal Installation



DATE: 06 FEBRUARY 2008

PAGE 1 OF 2

#### MAIN ROTOR HUB FRETTING BUFFER AND O-RING PACKING

MODELS AFFECTED: MD900 helicopters serial numbers 900-00008 thru 900-00118.

This Service Letter is issued to inform owners and operators that the 900R2100012–101 Main Rotor Hub Fretting Buffer and M83248/1–166 O-ring Packing are being removed from the Main Rotor Installation. MDHI has done tests that show removal of the Fretting Buffer does not cause increased fretting between the Hub Assembly and the Main Rotor Drive Plate. The Fretting Buffer can be removed to make it easier to apply the environmental sealing compound around the Hub Assembly and the Main Rotor Drive Plate.

Do not reinstall the Fretting Buffer and O-ring Packing the next time they are removed for scheduled maintenance. A revision has been made to CSP-900RMM-2 to change the installation procedures. CSP-900IPL-4, Revision 11 will have the Fretting Buffer and O-ring Packing deleted.

**FAA Approval:** The technical design aspects of this Letter are FAA Approved.



**DATE: 06 FEBRUARY 2008** 

PAGE 2 OF 2

# **SERVICE LETTER**



DATE: 13 FEBRUARY 2007

PAGE 1 OF 1

#### THRUSTER CONTROL CABLES

**MODELS AFFECTED:** MD900 helicopters serial numbers 900-00008 and subsequent.

This Service Letter is issued to inform owners and operators that an operator of a 500N had a thruster cable fail in service. Other operators of 500N helicopters have found thruster control cables and pulleys with corrosion, fraying, wear, other damage, and pulleys that did not turn easily or smoothly. The MD900 has a thruster control cable installation that is almost the same as the 500N.

The Rotorcraft Maintenance Manual, CSP-900RMM-2, Sections 05-20-20 and 05-20-50 has inspections of the thruster control system that are necessary for continued airworthiness. The United States of America Federal Aviation Administration Advisory Circular AC43.13-1B gives inspection procedures for control cable systems. Maintenance technicians should carefully examine flight control cables and pulleys at the intervals specified in the maintenance manual. For more data on control cable system inspection procedures, refer to AC43.13-1B.



**DATE: 19 JUNE 2007** 

PAGE 1 OF 2

#### MAIN ROTOR BLADE RETENTION BOLT CHECK

**MODELS AFFECTED:** MD900 helicopters serial numbers 900–00008 and subsequent with 900R3100001–103 main rotor blade retention bolts installed.

This Service Letter is issued to recommend that operators do a visual check of the main rotor blade retention bolt before or after each flight. An operator with at least a private pilot certificate can do the visual check.

(Ref. Figure 1)

Visually examine the area around the hex hole in the spring clip for cracks. Make sure spring clip hex hole is fully engaged on hex nut. Visually examine the position of each main rotor blade retention bolt to make sure it has not moved up in the pitchcase. Make sure there is a gap between the main rotor blade retention bolt thrust washer and the retainer. Compare the gap between the main rotor blade retention bolt thrust washer and retainer to the gap at the other nine bolts. Each of the ten gaps must be almost the same.

If you think a main rotor blade retention bolt has cracks around the spring clip hex hole, spring clip hex hole is not fully engaged on hex nut, has moved up, or there is no gap under the thrust washer, have a certificated maintenance technician remove bolt and do a detailed inspection of the bolt (Ref. CSP-900RMM-2, Section 62-10-00). If no defects are found, install bolt (Ref. CSP-900RMM-2, Section 62-10-00).



**DATE: 19 JUNE 2007** 

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# **SERVICE LETTER**

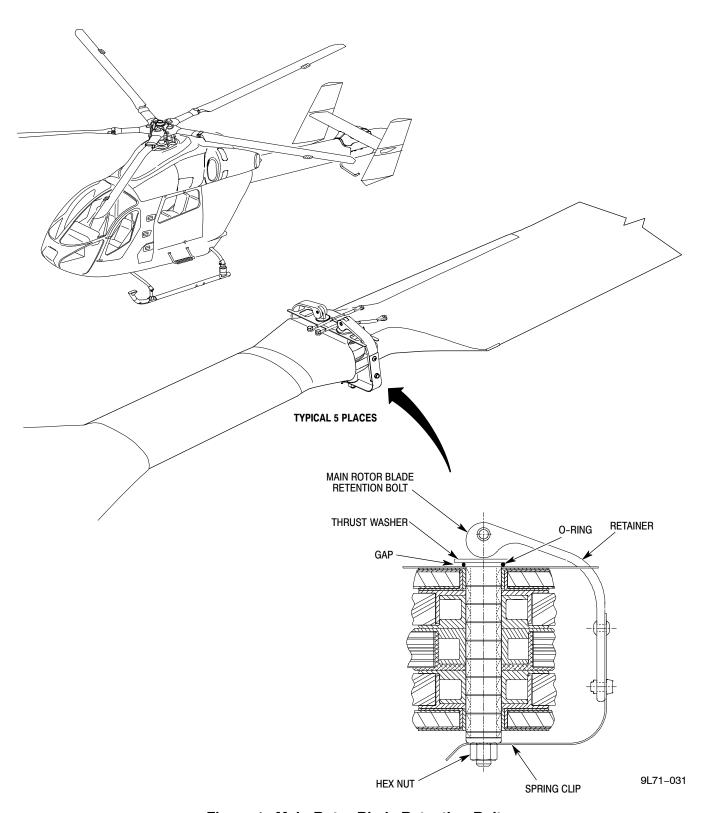


Figure 1. Main Rotor Blade Retention Bolt



DATE: 30 NOVEMBER 2007

PAGE 1 OF 2

#### COLLECTIVE CONTROL POSITION TRANSDUCER LINKAGE

MODELS AFFECTED: MD900 helicopters serial numbers 900-00008 thru 900-99999.

This Service Letter is issued to inform owners and operators that the 900C2010424–101 collective position sensor bellcrank and 900C2010428–101 collective position sensor link can go past center or become aligned. If collective position sensor link and collective sensor bellcrank go past center or become aligned, the collective controls can become locked or position sensor can send an incorrect signal to the vertical stabilization control system. If the collective controls become locked, the pilot can move the collective stick with an initial increase in force which causes the collective position transducer to shear. This condition is caused by an incorrect adjustment of the 900C3010010–101 cockpit collective tube and the 900C2010035–101 collective closet controls rod.

A revision is being made to CSP-900RMM-2 Rotorcraft Maintenance Manual to add cautions and maintenance instructions about this condition. Changes are being made to the installation, inspection, test, and rigging procedures.



**DATE: 30 NOVEMBER 2007** 

PAGE 2 OF 2

# **SERVICE LETTER**



**DATE: 27 DECEMBER 2007** 

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#### NOTAR® FAN TENSION-TORSION STRAP REPLACEMENT

MODELS AFFECTED: MD900 helicopters serial numbers 900-00008 thru 900-99999.

MD Helicopters, Inc. and Lord Corporation have determined that it will eventually be necessary to replace NOTAR® Fan Blade Tension–Torsion Straps as part of maintenance of the NOTAR® System. Lord Corporation has determined that the Tension–Torsion Straps can, over time, absorb moisture that can cause the straps to have decreased strength.

MD Helicopters, Inc. will start a program to replace the Tension-Torsion Straps. A Service Bulletin with details of the program and compliance time will be issued later. The Service Bulletin will use the manufacture cure date and serial number marked on each strap to determine the replacement compliance time. When maintenance is done on the NOTAR® Fan Assembly, record the serial number and cure date of each Tension-Torsion Strap installed in the fan assembly. This will make it easy to schedule helicopter maintenance when the Service Bulletin is issued.



**DATE: 27 DECEMBER 2007** 

PAGE 2 OF 2

# **SERVICE LETTER**



**DATE: 04 JANUARY 2008** 

PAGE 1 OF 2

### **HONEYWELL EFIS IFR STC (SR00436WI-D)**

MD Helicopters, Inc. (MDHI) is pleased to announce it has acquired the Honeywell EFIS IFR Supplemental Type Certificate (STC) for the MD900 helicopters (including 902 configuration) and the certification and availability of new part number Trim and VSCS actuators for the IFR system.

MDHI has completed negotiations with Honeywell and has signed an STC transfer agreement to purchase the Honeywell IFR STC (SR00436WI-D) installed in the MDHI Model MD900 (900 and 902 configurations) helicopter. The FAA is expected to reissue the STC to MDHI as soon as the STC transfer paperwork is processed. MDHI has also signed a long term agreement with Honeywell to provide Line Replaceable Units (LRUs) for the EFIS IFR STC.

This Service Letter also introduces the new 900C3010004-115 Trim Actuator and 165490-13 VSCS Actuator which are now approved for the IFR STC (SR00436WI-D). MDHI wants to ensure the continued future of the EFIS IFR STC, provide support to the many customers already using the existing Honeywell EFIS IFR system, and is committed to looking at future STC enhancements and upgrades.

The Honeywell EFIS with KFC 900 Automatic Flight Control System (AFCS) and IFR Avionics package provides the pilot the necessary equipment for IFR navigation, full three axis autopilot, and stability augmentation. Configurations include both Category A and Category B IFR with optional RDR 2000 Color Radar System.



**DATE: 04 JANUARY 2008** 

PAGE 2 OF 2

# **SERVICE LETTER**



**DATE: 20 JUNE 2008** 

PAGE 1 OF 2

\* Supersedes Service Letter SL900-060, dated 31 March 2008. Revised to correct oil hose nomenclature.

### BETTER TRANSMISSION OIL HOSES

MODELS AFFECTED: MD900 helicopters serial numbers 900-00008 thru 900-00124.

New 900D3409527-101 left oil in hose, 900D3409527-104 right oil in hose, and 900D3409528-101 oil out hose are now available from MD Helicopters, Inc. The new hoses will give better service life. Helicopter serial numbers 900-00119 and subsequent have the new oil out hoses installed. Helicopter serial numbers 900-00125 and subsequent have both the new oil out and oil in hoses installed. Helicopters serial number 900-00008 thru 900-00018 that do not have 900D3658501-103 heat exchangers installed, must install 900D3658501-103 heat exchangers before installation of the new oil in hoses. Contact MDHI Parts Sales Department to order new hoses.



**DATE: 20 JUNE 2008** 

PAGE 2 OF 2

# **SERVICE LETTER**



DATE: 13 FEBRUARY 2009

PAGE 1 OF 2

#### **IIDS MAXIMUM NUMBER LIMITS**

MODELS AFFECTED: All MD900 helicopters.

The IIDS function that monitors aircraft systems condition has maximum number limits. When the number is more than the limit, the IIDS will restart the number count at zero. When the IIDS restarts the number count, you must make a record in the Rotorcraft Log – Flight Log section of the Rotorcraft Log Book.

The IIDS has the number limits that follow:

- Maximum accumulated flight time 9999.99
- Maximum number of flights 9999
- Maximum number of engine starts 9999
- Maximum number of engine flights 9999
- Maximum engine total time 50,000.00
- Maximum engine time since new 50,000.00
- Maximum engine time since overhaul 50,000.00
- Maximum engine total cycles 32,767.



**DATE: 13 FEBRUARY 2009** 

PAGE 2 OF 2

# **SERVICE LETTER**



**DATE: 24 JUNE 2009** 

PAGE 1 OF 2

### MAIN ROTOR BLADE RETENTION BOLT CHECK

MODELS AFFECTED: MD900 helicopters serial numbers 900-00008 and subsequent with

Part Number 900R3100001-103 main rotor blade retention bolts

installed.

This Service Letter is issued to recommend that operators do the additional check of the main rotor blade retention bolt before or after each flight as recommended in EASA Safety Information Bulletin 2009–18.

(Ref. Attachment EASA Safety Information Bulletin 2009–18)



**DATE: 24 JUNE 2009** 

PAGE 2 OF 2

# **SERVICE LETTER**



#### **EASA Safety Information Bulletin**

SIB No.: 2009-18

Issued: 19 June 2009

Subject: Inspection of Main Rotor Blade Retention Bolts Part Number

(P/N) 900R3100001-103

**Ref. Publications:** Federal Aviation Administration (FAA) Airworthiness Directive (AD)

2003-14-51, Amendment 39-13255 dated 8 August 2003; and MD Helicopters Inc. (MDHI) Mandatory Service Bulletin SB900-092R2

dated 2 September 2004.

**Description:** The FAA originally issued the referenced AD as an Emergency AD

on 2 July 2003, to require repetitive checking and inspecting each P/N 900R3100001-103 main rotor blade retention bolt and, if a crack, fretting or corrosion was found, replacing the bolt with an airworthy bolt. These actions were intended to prevent failure of a bolt, loss of main rotor blade, and subsequent loss of control of the helicopter. The FAA AD and the referenced MDHI SB also indicate that installation of new bolts, effective June 2003, constitutes

terminating action for all of the AD requirements.

However, since June 2003, the reported number of P/N 900R3100001-103 bolts failing in service has now risen to 11: ten in the United Kingdom (UK) and one in the United States. Despite the elapsed time period, the number of reported failures, or the data gathered as a result of the MDHI SB900-092 (referenced above) and associated FAA AD 2003-14-51, no clear cause has become evident.

With the tenth reported failure, on a Sussex Police (UK) helicopter in March 2009, the bolt migration was downward rather than upward, which had apparently been the case on the previous 9 occasions.

With the eleventh reported failure, on a South Yorkshire Police (UK) helicopter in May 2009, there was no vibration evident to the pilot or indicated on the 'check main rotor balance' caption of the IIDS (Integrated Instrument Display System) on the preceding flight, nor was there more than a couple of millimetres of upward migration of the broken bolt. What first revealed the failure was a very loose cam handle/spring clip.

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EASA SIB No: 2009-18

**Recommendations:** After reviewing the available information and pending further investigation to determine the cause(s) of these bolt failures and the availability of a permanent solution from the Type Certificate Holder MDHI, or Rotorcraft Flight Manual (RFM) instructions or limitations that attain an equal safety level. EASA recommends owners and operators of the affected helicopters to take the following actions:

> The visual check of bolt vertical position relative to its neighbour [ref. RFM Section IV: 4-2; ROTOR SYSTEM; "Blade attach pins (bolts)" should include the lower as well as the upper surface of the pitch case. Despite the instructions at the start of RFM paragraph 4-2 stating 'prior to the first flight of the day', in light of recent findings it is recommended to visually check/inspect the bolts prior to or after each flight.

The pre (or post) flight visual check should be accompanied by a simple 'touch check' (e.g. light hand pressure) of each blade bolt cam handle/spring clip to detect easy sideways movement, i.e. lack of bolt tension. It should be noted that the retainer (bolt antirotation strap) on the upper surface of the pitch case is designed to prevent more than a small amount of rotation of the bolt/clip assembly. However, this restraint should not prevent the effectiveness of this simple check, as any movement is likely to indicate a loss of bolt tension associated with a failure and should be investigated prior to further flight.

#### In summary:

- The visual check [ref. RFM Section IV; 4-2; ROTOR SYSTEM; "Blade attach pins (bolts)"] should be carried out before or after each flight.
- A failed bolt can migrate downwards as well as upwards, and the visual check should account for this.
- A touch check (light hand pressure) of each bolt assembly cam handle/spring clip should accompany each visual inspection, and should any movement be noted, the bolt assembly in question should be investigated further.

#### Applicability:

MD900 helicopters, all serial numbers, with main rotor blade retention bolt P/N 900R3100001-103 installed.

#### Contacts:

For further information contact the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA; E-mail: ADs@easa.europa.eu.

Copies of the referenced ASB or any other technical information and assistance may be obtained upon request from MDHI, Attn: Customer Support Division, 4555 E. McDowell Road, Mail Stop M615-GO48, Mesa, Arizona 85215-9734, United States of America. Telephone +1-480-346-6387, Fax +1-480-891-6782, or +1-480-346-6813.

E-mail pubs@mdhelicopters.com or download from the MDHI website at http://www.mdhelicopters.com/v2/directives.php

This is information only. Recommendations are not mandatory.

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**DATE: 29 JULY 2009** 

PAGE 1 OF 2

### MAIN ROTOR BLADE RETENTION BOLT

MODELS AFFECTED: MD900 helicopters serial numbers 900-00008 and subsequent with

Part Number 900R3100001-103 main rotor blade retention bolts

installed.

This Service Letter is issued as a notification to all operators to stop the annual disassembly, cleaning, and inspection of the MD900 main rotor blade retention bolts and to follow the installation and maintenance instructions of CSP-900RMM-2. This notification is necessary on the recommendation from the bolt manufacturer (Avibank Manufacturing, Inc.; CAGE 84256) and MDHI.

The disassembly and cleaning operation removes the dry-film lubrication and lets moisture get between the core bolt and the expanding collets, which can cause corrosion, pitting, and a start point for a fatigue crack. Numerous disassemblies and reassemblies increase the risk that the bolt can be incorrectly assembled. Incorrect assembly can cause incorrect operation of the bolt, and a loss of the integral locking feature of the bolt.

MDHI Service Bulletin SB900-092R2 and the FAA AD 2003-14-51, Main Rotor Blade, Retention Bolt Inspection, are one-time inspections. There is evidence that operators have done annual inspections of the retention bolts without continued maintenance action defined by MDHI and Avibank. Also, an alternate lubrication that is not approved to touch-up the bolts after inspection has been used. Only use approved lubricants in CSP-900RMM-2, 62-10-00, Main Rotor Blade Removal/Installation.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1–800–388–3378 or (480) 346–6387. DATAFAX: (480) 346–6813.



**DATE: 29 JULY 2009** 

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## **SERVICE LETTER**



DATE: 7 APRIL 2011 PAGE 1 OF 2

\* Supersedes Service Letter SL900-065R1, dated 15 October 2010. Changed to add washers Part Numbers (PN AN960JD616L) and (PN NAS1149D0663J).

### INSTALLATION OF ENGINE GROUND STUDS

**MODELS AFFECTED:** MD900 helicopter serial numbers 900-00008 thru 900-000143.

This Service Letter is issued to recommend that operators inspect starter/generator ground studs for arcing, corrosion, and looseness at the next annual inspection. This inspection is necessary to find loose ground studs, or corrosion or arcing that can cause a starter/generator problem. The ground studs are located on the engine deck: right-hand GS402 at STA 225.45 BL 23.12 and left-hand GS403 at STA 228.67 BL -5.15 (ref. Figure 1).

If arcing or corrosion is found, the wire lug and its interfaces must be cleaned.

Corrosion cannot be more than **0.012 inch (0.30 mm) deep**. If corrosion on the doubler is more than this limit, contact the Field Service Department at MDHI, and remove and replace the doubler.

If no corrosion is found, but the grounding stud is loose, torque the ground stud to **110** in-lb (12.4 Nm).

If there is no arcing, corrosion, or looseness, inspect again at the next annual inspection.

To decrease the possibility of incorrect torque, MDHI will no longer use NAS1635-6-16 Phillips-head screws with three AN960JD616L flat washers at each of the starter/generator grounds. AN6C7A hex-head bolts with three NAS1149D0663J flat washers will be used as alternative ground studs on Rotorcraft SN 900-000144 and subsequent. AN6C7A bolts and NAS1149D0663J washers can be purchased commercially by the operator and can be installed on all rotorcraft without modification.

**NOTE:** If the NAS1635-6-16 screws and AN960JD616L washers are replaced with AN6C7A bolts and NAS1149D0663J washers, you do not have to do the next or future annual inspections.

**NOTE:** Electrical Bond Test is to be preformed, Class R. (Ref CSP-SPM-20-50-00).

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.

#### Legend (Ref. Figure 1)

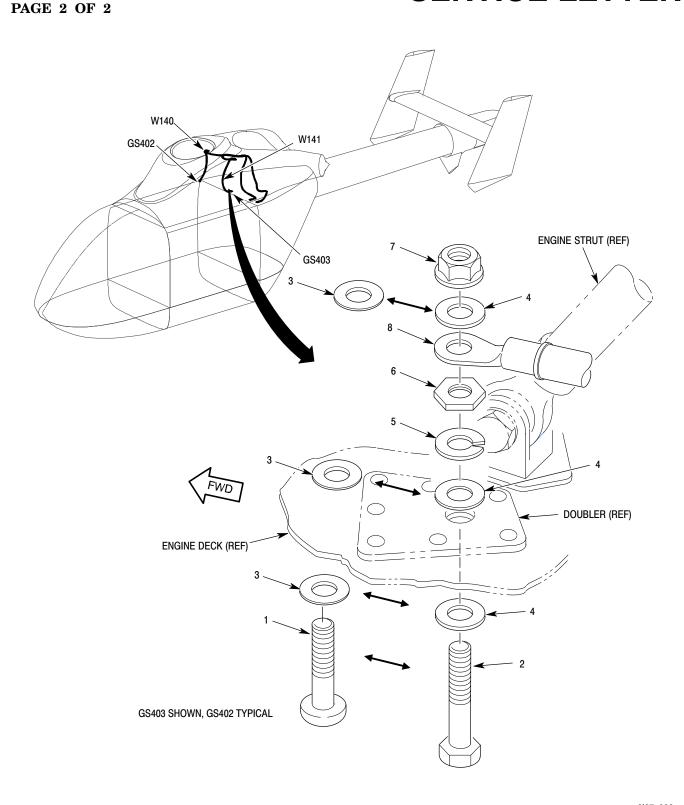
- 1. SCREW (NAS1635-6-16)
- 2. BOLT (AN6C7A)
- 3. WASHER (AN960JD616L)
- 4. WASHER (NAS1149D0663J)
- 5. LOCKWASHER (MS35338-141)
- 6. NUT (MS25082-6)
- 7. NUT (MS21042-6)
- 8. WIRING HARNESS (W141 SHOWN)

**NOTE:** If necessary add washer. (4).



**DATE: 7 APRIL 2011** 

## **SERVICE LETTER**



9167-003

Figure 1. Stack-up of Ground Studs at GS402 and GS403



**DATE: 27 OCTOBER 2009** 

PAGE 1 OF 2

### MAIN ROTOR DRIVE PLATE O-RING PACKING

MODELS AFFECTED: MD900 helicopter serial numbers 900-00008 thru 900-000143.

This Service Letter is issued to tell owners and operators that a new PN 900R2101129-101 O-ring packing is to be installed with the main rotor drive plate. Installation of the O-ring packing will help prevent moisture between the faying surfaces of the main rotor upper hub and drive plate, which can cause corrosion.

Install PN 900R2101129-101 O-ring packing the next time the main rotor drive plate is removed for maintenance (ref. CSP-900RMM-2, 63-10-00, Drive Shafts/Clutches/Couplings, Removal/Installation).

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.



**DATE: 27 OCTOBER 2009** 

PAGE 2 OF 2

## **SERVICE LETTER**



DATE: 9 NOVEMBER 2009

PAGE 1 OF 2

### LANDING GEAR DAMPER ASSEMBLY AND SEALING COMPOUND

**MODELS AFFECTED:** All MD900 helicopters.

This Service Letter is issued to tell owners and operators to be careful when the corrosion inhibitive sealing compound (C211) is applied to the landing gear damper assembly. Sealing compound (C211) is applied to external mating parts and all fasteners. Too much sealing compound (C211) can cause a blockage in the drain ports of the damper assembly (ref. Figure 1). The drain ports let moisture exit the damper assembly. Blocked drain ports can cause internal corrosion in the damper assembly. Corrosion can reduce the function and life of the damper assembly.

During installation of the damper assembly, be careful not to cover the four drain ports with sealing compound (C211) (ref. CSP-900RMM-2, 32-00-00, Landing Gear Damper Assembly Installation). Apply masking tape to the drain ports during installation of the damper assemblies to prevent blockage. Remove masking tape after the sealing compound has cured.

**CAUTION** Do not damage adjacent material if it is necessary to remove sealing compound (C211) (C211).

Inspect the damper assemblies at the next inspection to make sure there is no blockage. If there is blockage, use a brush or scribe or other tool to remove unwanted sealing compound (C211) from the drain ports. Make sure the drain ports are not clogged with unwanted material after repair.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.

### Legend (Ref. Figure 1)

- 1. DAMPER ASSY
- 2. AFT CROSSTUBE
- 3. SKID TUBE ASSY
- 4. FLAT WASHER
- 5. COUNTERSUNK WASHER
- 6. BOLT
- 7. NUT
- 8. FLAT WASHER
- 9. COUNTERSUNK WASHER
- 10. BOLT
- 11. NUT
- 12. FLAT WASHER
- 13. BOLT



DATE: 9 NOVEMBER 2009

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## **SERVICE LETTER**

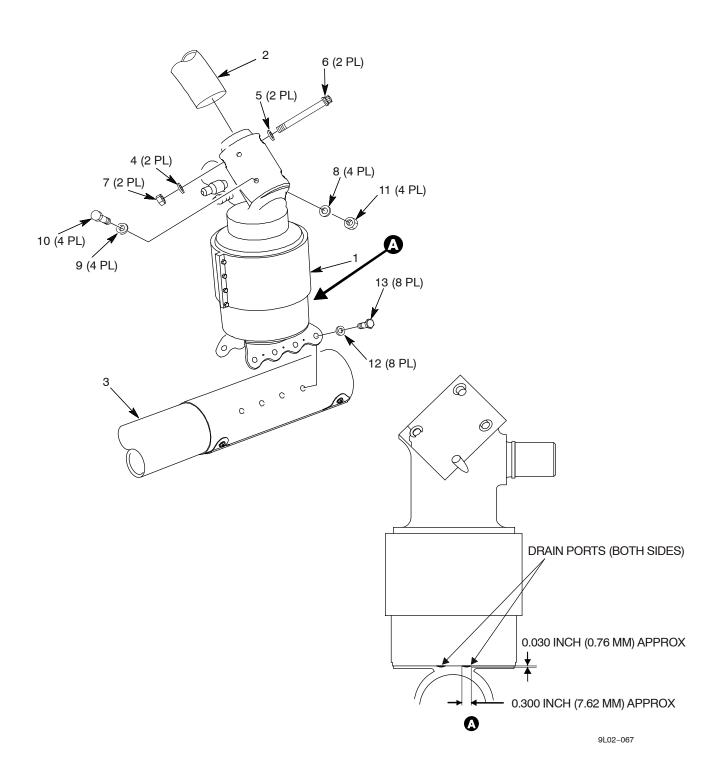


Figure 1. Location of Drain Ports and Installation of Damper Assembly



**DATE: 14 JANUARY 2010** 

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### THRUSTER ASSEMBLY WASHER MODIFICATION

MODELS AFFECTED: All MD900 helicopters.

This service letter is issued to tell owners and operators that the control bearing (ref. Figure 1) for the rotating cone assembly may not move freely because the attaching bolts have been over-torqued during installation. Torque more than **30 in-lb (3.4 Nm)** can cause the nylon flat washers to extrude and cause an interference with bearing rotation. At the next bearing inspection/replacement interval, MDHI recommends the removal of flat nylon washers, PN NAS1515H3L (5), and their replacement with corrosion-resistant steel (CRES) flat washers, PN NAS1149C0363R (6). The CRES flat washers are thicker and provide increased clearance from the face of the thruster bulkhead.

At the next access to, or during scheduled maintenance to the control bearings, replace flat nylon washers with CRES flat washers. Install control bearings with new washer in the thruster assembly. Correctly torque bolts **15 to 20 in-lb (1.7 to 2.3 Nm)** plus run-on torque to get the correct locking torque on the nutplate. If it is necessary to remove remaining axial play of the stack-up, torque bolts to **24 in-lb (2.7 Nm)** maximum.

Legend (Ref. Figure 1)

- 1. ROTATING CONE ASSY
- 2. UPPER BULKHEAD ASSY
- 3. LOWER BULKHEAD ASSY
- 4. NUTPLATE
- 5. FLAT NYLON WASHER
- 6. CRES FLAT WASHER
- 7. FLAT WASHER
- 8. CONTROL BEARING
- 9. BOLT



**DATE: 14 JANUARY 2010** 

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## **SERVICE LETTER**

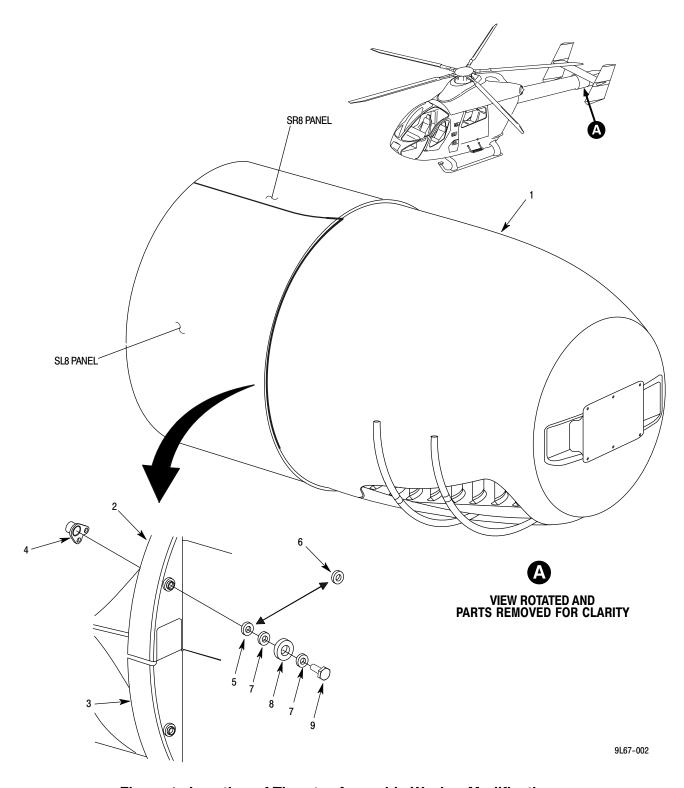


Figure 1. Location of Thruster Assembly Washer Modification



**DATE: 26 JANUARY 2010** 

PAGE 1 OF 1

# BENDIX/KING BY HONEYWELL – WINGMAN SERVICES: DATABASE DOWNLOADS AND EGPWS UPDATES

**MODELS AFFECTED:** All MD900 helicopters that utilize any of the following databases -

Reference: Databases for KLN 35A/KLN 88/KLN

MODELS AFFECTED: 89/KLN 89B/KLN 90/KLN 90A/KLN90B/KLN 94/KLX 100/KLX

135/KLX 135A/KLN 900.

Honeywell has issued an URGENT SAFETY BULLETIN dated 11 January 2010.

Honeywell was informed by their data supplier, Jeppesen, that the data file delivered to Honeywell contained incorrect Dynamic Magnetic Variations for all terminal and enroute waypoint records. For that reason, it is imperative that the incorrect databases NOT be used for arrival, departure, or approach operations.

The Honeywell Bulletin states; "To fix this issue, a corrected database must be installed prior to the next flight."

Detailed information regarding this Urgent Safety Bulletin and corrective actions can be found on the Bendix/King web site at:

 $https://www.bendixking.com/wingman/servlet/com.honeywell.brga.wingman.gps. GpsUser-Roles?page=database\_downloads$ 



SL369H-140 SL369D-119 SL369E-071 SL369F-064 SL500N-019 SL600N-017 SL900-070

**DATE: 06 MAY 2010** 

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### HELICOPTER OPERATION IN VOLCANIC ASH ATMOSPHERE

Helicopter operation in volcanic ash conditions can decrease engine performance and affect operation of the helicopter. This depends on the type and concentration of airborne particles which could increase the possibility of navigation system failures, partial power loss, engine flame out or pilot instrument malfunction. Air travel in such conditions can also reduce visibility and increase the chance of erosion of helicopter parts.

MDHI recommends owner/operators avoid flight in areas of volcanic ash contamination.

Helicopter operation conducted in a contamination zone must be treated as flight operations in a sandy or contaminated atmospheric environment and specific maintenance requirements must be applied. The use of Mylar tape as noted in the references below is an option to reduce erosion damage. Engines operated in this environment can ingest increased foreign material. Refer to the engine manufacturer for detailed information regarding engine operation and maintenance in volcanic ash atmosphere.

MDHI recommends owner/operators hanger helicopters wherever possible.

Helicopters that are left outside should be covered to avoid any accumulation or penetration of particles and corrosive debris. Helicopters exposed to volcanic ash should be brush cleaned, have the crevices vacuumed, and be fresh water washed as if operated in salt water, sand, and dust environments. Owners/Operators should contact MDHI field service if unusual findings or unusual helicopter damage or reduced performance occurs during flight.

#### Reference:

CSP-HMI-2 Section 62-10-00, and 64-10-00.

TB900-006R1 Main Rotor Hub Pitchcase Abrasion Tape.

TB900-007R1 Main Rotor Blade Root End Abrasion Tape.

CSP-SPM Section 20-40-00 Corrosion Control Maintenance Practices.

CSP-A-3 Corrosion Control Manual.

Pratt & Whitney Service Representative. http://www.pw.utc.com/About+Us/Contact+Us

Rolls-Royce Service Representative. Toll-free (North America) +1-888-255-4766 or E-mail: model250custsupp@rolls-royce.com

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SL900-070

**DATE: 06 MAY 2010** 

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**DATE: 23 JULY 2010** 

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### AIR-CONDITIONING SYSTEM MAINTENANCE

MODELS AFFECTED: All MD900 helicopters.

This Service Letter is issued to make sure owners and operators correctly maintain the air-conditioning system. There has been a wide range of "times between failure" for refrigerant compressor assembly 900P3250303-105.

To make sure the air-conditioning system is correctly maintained and to keep the designed level of reliability, operators must follow the instructions for the maintenance, removal/replacement, and servicing of the compressor assembly.

**CAUTION** Failure to follow the instructions in Rotorcraft Maintenance Manual CSP-900RMM-2 (ref. Section 12-00-00 and Section 21-50-00) can have an effect on the warranty.

- (1). Make sure the personnel that maintain and service the air-conditioning system have the necessary education and experience. The air-conditioning system has complex and specialized components that require specific knowledge.
- (2). The receiver dehydrator must be replaced each time the air-conditioning system is opened.
- (3). When the air-conditioning system is charged or evacuated, use the refrigerant recovery and recycling station (T701) (ref. Section 12-00-00, Air-Conditioning System Charging/Evacuation).
- (4). Measure the refrigerant oil quantity removed during evacuation.
- (5). Use only approved refrigerant oil (ref. CSP-SPM) in the air-conditioning system:
  - (a). Use Daphne Hermetic Oil 150CX [daphne hermetic oil (C116)] for R12 refrigerant systems.
  - (b). Use RG20, RS20, or Daphne Hermetic Oil PR [daphne hermetic oil (C117)] for R-134A refrigerant systems.

CAUTION Do not over-service the air-conditioning system with R12 refrigerant (C806) or R-134A refrigerant (C815). MDHI recommends the air-conditioning system be serviced with **0.5** lb (**0.23** kg) less than recommended by the RMM of R12 refrigerant (C806) or R-134A refrigerant (C815) for the first maintenance operational check.

- (6). Follow the instructions in CSP-900RMM-2 (ref. Section 12-00-00 and Section 21-50-00).
- (7). There is a window at the top of the receiver dehydrator and on later systems a sight glass in the refrigerant line near the servicing parts, that is used to make sure the air-conditioning system is serviced correctly. Follow the procedures in the applicable Rotorcraft Flight Manual and CSP-900RMM-2 to start the right engine and operate the air-conditioning system.
  - (a). Monitor the window (or the tubes near the evaporator) for bubbles.



**DATE: 23 JULY 2010** 

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### **SERVICE LETTER**

- (b). Slowly add R12 refrigerant (C806) or R-134A refrigerant (C815) until all bubbles are removed.
- (c). Do not add more than the total quantity of R12 refrigerant (C806) or R-134A refrigerant (C815) shown in CSP-900RMM-2 for the applicable system.

**CAUTION**Be careful when you install or remove the compressor assembly on/from the engine drive pad. Do not apply a load or allow a shock or impact on the splined drive shaft. This can damage the shear pin and cause an early shear pin failure.

(8). After installation of the compressor assembly (ref. Section 21–50–00), you also must internally clean the condenser, evaporator, and all hoses and tubes; and replace the receiver dehydrator.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.



DATE: 3 AUGUST 2010

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### HONEYWELL GPS NAVIGATOR

**MODELS AFFECTED:** All MD900 rotorcraft that have MDHI Single-Pilot Instrument

Flight Rules (SPIFR) Supplemental Type Certificate (STC)

SR00436W1-D (formerly Honeywell) installed.

This Service Letter is issued to inform owners and operators that the Federal Aviation Administration (FAA) has released Special Airworthiness Information Bulletin (SAIB) CE-10-38, dated 15 July 2010 (attached), concerning an airworthiness issue of the Honeywell GPS software for eight-channel receivers. The FAA and MDHI recommend owners, operators, and flight crew of rotorcraft with Honeywell GPS Navigator (Model KLN-90B, PNs 066-04031-1121 and 066-04031-1122) installed to read FAA SAIB CE-10-38 and follow the FAA recommendation.

MDHI has contacted Honeywell and discussed the remote possibility that a MD900 may encounter the anomaly described in the attached SAIB. If the KLN-90B loses the required GPS signal, a "RAIM NOT AVAILABLE" message is displayed, acquisition of a new GPS signal is initiated, and the GPS resets. Interruption should not last more than a few minutes. Pilots should follow normal procedures for a "RAIM NOT AVAILABLE" message and rely on ground base navigation system until the GPS resets.

For further assistance, refer to attached FAA SAIB CE-10-38.



**DATE: 3 AUGUST 2010** 

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## **SERVICE LETTER**



**DATE: 15 OCTOBER 2010** 

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### SERVICING THE MAST SUPPORT BASE ASSEMBLY

**MODELS AFFECTED:** All MD900 helicopters.

This Service Letter is issued to tell owners and operators of a new preventive maintenance procedure for the mast support base assembly (mast assembly) to minimize potential corrosion damage.

Corrosion pitting and discoloration have been found on the upper and lower bearing bosses of the mast assembly. The mast assembly has a layer of nickel plate, then a top layer of silver plate. Contact between the mast assembly and upper hub liner can cause discoloration. Environmental factors can cause corrosion. Often, corrosion and contact is only on the nickel and silver plates, which can be cleaned with solvents. However, if the damage goes into the base metal, the mast assembly must be removed and sent to MDHI for repair.

#### (Ref. Figure 1)

MDHI is evaluating the application of a thin-film of mineral grease (C125) on the mast assembly to minimize corrosion and contact. This technique is similar to a process used on other MDHI models. At every access to the mast assembly, MDHI recommends:

(1). Examine the mast assembly (ref. CSP-900RMM-2, Section 63-30-00, Inspection).

#### Solvent Cleaner (C429)













(2). Clean the upper and lower bearing bosses to remove unwanted material and corrosion residue with solvent cleaner (C429) and non-lint cloth (C802).

#### Grease. Mineral (C125)













Make sure the mineral grease (C125) is not applied on the surfaces of the mast assembly below the lower bearing boss or above the upper bearing boss. Unwanted material can collect on the grease.

(3). Apply a thin layer of mineral grease (C125) to the upper and lower bearing bosses before you install the hub assembly.

**NOTE:** MDHI requests that operators give the MDHI Field Service Department information on the condition of the mineral grease (C125) and the boss areas during every access to the upper and lower bearing bosses of the mast assembly.

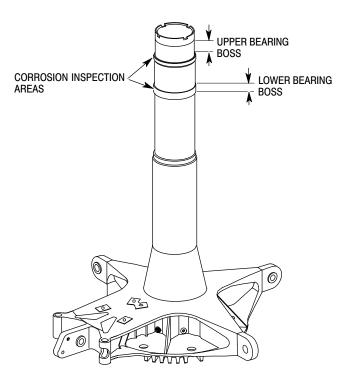
For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1–800–388–3378 or (480) 346–6387. DATAFAX: (480) 346–6813.



**DATE: 15 OCTOBER 2010** 

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## **SERVICE LETTER**



9L63-028

Figure 1. Inspection of the Mast Assembly



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**DATE: 22 DECEMBER 2010** 

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### TECHNICAL PUBLICATIONS PRICE INCREASE

Current costs require MDHI to increase the price of our technical publications allowing us to continue our publications improvement efforts to provide you with the most current and accurate manuals possible for maintenance, operation and modification of your MD helicopters.

The increase will be effective 1 February 2011. You can purchase a new subscription or renew/extend an existing subscription at the current price if your order is placed by 31 January 2011. A web site link is provided below to the publications price list/ order form available on the MDHI web site.

Reference: http://www.mdhelicopters.com/v2/pub\_orders.php

		<b>Current Price</b>	New Price
Rotorcraft Flight Manual	New Purchase (with 2 year Revision Service)	\$185.00	\$205.00
	New Purchase (with 5 year Revision Service)	\$390.00	\$430.00
	2 year Revision Service	\$130.00	\$145.00
	5 year Revision Service	\$290.00	\$320.00
	One Time Purchase (no Revision Service)	\$150.00	\$165.00
Rotorcraft Maintenance Manual Set	New Purchase (with 2 year Revision Service)	\$1,560.00	\$1,750.00
	New Purchase (with 5 year Revision Service)	\$2,990.00	\$3,300.00
	2 year Revision Service	\$1,040.00	\$1,150.00
	5 year Revision Service	\$1,950.00	\$2,150.00
	One Time Purchase (no Revision Service)	\$1,110.00	\$1,250.00
Service Bulletins, Technical Bulletins and Ser-	New Purchase (with 2 year Revision Service)	\$200.00	\$220.00
vice Letters.	New Purchase (with 5 year Revision Service)	\$330.00	\$365.00
	2 year Revision Service	\$130.00	\$145.00
	5 year Revision Service	\$260.00	\$290.00
	One Time Purchase (no Revision Service)	\$130.00	\$145.00

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SL900-075

**DATE: 22 DECEMBER 2010** 

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**DATE: 21 APRIL 2011** 

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### **OPERATION IN A CORROSIVE ENVIRONMENT**

**MODELS AFFECTED:** All MD900 helicopters.

This service letter is issued to advise owners and operators of MD 900 helicopters that information is provided in the technical manuals to assist in corrosion prevention during operation in harsh environments (abrasive dust, acidic or high-mineral-content soils, agricultural agents, extreme temperatures, industrial air pollution, or salt water). MDHI Technical Publication CSP-SPM, Section 20–20–00, Rotorcraft Rinse and Rotorcraft Wash, and Section 20–40–00, Corrosion Control and Preventive Maintenance, provide specific information to assist in corrosion prevention.

Operators should implement a corrosion control program suited to their unique environment that includes an increase in the frequency of inspections, preventative maintenance and corrosion protection methods (Ref. CSP-900RMM-2, Section 05-20-10, Table 202) after evaluation of the corrosive conditions of their specific operation environment and frequency of their operations. Diligent application of corrosion protection methods provided in these publications will make sure the continued airworthiness and operational availability of their helicopters, while reducing the costs of component replacement.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.



**DATE: 21 APRIL 2011** 

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## **SERVICE LETTER**



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**DATE: 14 OCTOBER 2011** 

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### BENDIX KING BY HONEYWELL KRA 405B RADIO ALTIMETER

**MODELS AFFECTED:** All helicopters equipped with the KRA 405B Radar Altimeter..

This Service Letter is issued as a notification of a potential undetected failure condition, wherein the Radar Altimeter may provide erroneous altitude information.

See attached FAA Special Airworthiness Information Bulletin: SW-11-61 Sept 29, 2011.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1–800–388–3378 or (480) 346–6387. DATAFAX: (480) 346–6813.

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SL900-077

**DATE: 14 OCTOBER 2011** 

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# SPECIAL AIRWORTHINESS INFORMATION BULLETIN

**SAIB:** SW-11-61

**SUBJ:** Honeywell (formerly Bendix King) KRA 405B Radio Altimeter **Date:** September 29, 2011

This is information only. Recommendations aren't mandatory.

#### Introduction

This Special Airworthiness Information Bulletin is to inform owners and operators of aircraft equipped with the KRA 405B Radar Altimeter of a potential undetected failure condition, wherein the Radar Altimeter may provide erroneous altitude information. At this time, this airworthiness concern is not an unsafe condition that would warrant airworthiness directive (AD) action under Title 14 of the Code of Federal Aviation Regulations (14 CFR) part 39.

#### **Background**

The KRA 405B Radar Altimeter may not detect the failure of certain internal components. Under these failure conditions, the KRA 405B might provide undetected erroneous altitude data. Since the failure is not detected, the probability of providing erroneous data without an associated warning is increased. This failure condition of unannunciated erroneous altitude has, thus far, become evident through the radar altitude height indication constantly drifting between approximately 800ft. to 1200ft. The altitude drift indication cycle is approximately four seconds to repeat. Once this failure condition occurs, it remains constant, so while unannunciated, it will become evident to the flying pilot through normal instrument scan. Barometric and GPS altitude indications are not affected by this failure condition. If other aircraft systems, such as Automated Flight Control System, utilize the radar altimeter altitudes, those systems behavior would be adversely affected by this failure condition.

Honeywell is actively working towards a design improvement of the monitor system that will address the undetected erroneous altitude data. When available, it will be implemented into the design of the KRA 405B system.

#### Recommendations

We recommend that owners and operators of aircraft equipped with the Honeywell KRA 405B radar altimeter system review their particular aircraft configuration and integration, to be freshly aware of which systems utilize radar altitude, and how the described failure condition would affect those systems. We also remind pilots that radar altitude information is supplemental to barometric altitude, and to fly conservatively, not relying solely on radar altitude information. Further, for pilots to be aware of the described failure condition, so it can be more readily identified in the event they experience this failure in their KRA 405B radar altimeter system. These same recommendations would also be applicable to any aircraft equipped with a radar altimeter, as a standard practice.

#### For Further Information Contact

George Schwab, Aerospace Engineer, FAA Rotorcraft Directorate, FAA Rotorcraft Standards Staff, Safety Management Group, 2601 Meacham Blvd., Ft. Worth, TX 76137; phone: (817) 222-5114; fax: (817) 222-5961; e-mail: george.schwab@faa.gov.



**DATE: 26 MARCH 2013** 

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### **INSPECTION OF GOODRICH HOIST MOTORS**

MODELS AFFECTED: MD900 Rotorcraft with a "Rescue Hoist" (STC SR09169 RC) Using a Goodrich Motor

This Service Letter is issued to tell owners and operators to do an inspection of the rescue hoist motors shown in the attached Goodrich Alert Service Bulletin 44301–10–15. Operators have had a failure of the overload clutch which caused the loss of the load and may cause injury to persons on the hoist or on the ground. This inspection is referenced in EASA Airworthiness Directive 2013–0077–E and FAA Emergency Airworthiness Directive 2013–06–51. Remove from service a hoist that does not pass inspection.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.



**DATE: 26 MARCH 2013** 

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## **SERVICE LETTER**



# **ALERT SERVICE BULLETIN**

Equipment/Furnishings - Load Check Inspection - Safety and Reliability

#### 1. Planning Information

#### A. Effectivity

This Alert Service Bulletin and the information it contains is applicable to all part numbers and serial numbers of the hoists listed in Table 1. These hoists are manufactured by Goodrich Sensors & Integrated Systems, Brea, CA. The only allowable exception to the compliance requirements of this ASB is for any hoist that has never been installed on an aircraft and has been in storage for less than 24 months.

TABLE 1.

Hoist Family	Test Load Lb (kg)	Serial Number Effectivity		
42315	950-1050 (430-477)	00001 thru 00652		
42325	950-1050 (430-477)	00001 thru 00197		
44301-10-4, -7, -9	950-1050 (430-477)	00001 thru 00670		
44301-10-1, -2, -5, -6, -8, -10, -11	835-925 (380-420)	00001 thru 00670		
44311	950-1050 (430-477)	00001 thru 00158		
44312	950-1050 (430-477)	00001 thru 00209		
44314	950-1050 (430-477)	00001 thru 00026		
44315	950-1050 (430-477)	00001 thru 00034		
44316	950-1050 (430-477)	00001 thru 00247 *		
44318	950-1050 (430-477)	00001 thru 00012		
* Hoists previously converted from -101 to -104 will have a serial number beginning with "2"				

<sup>\*</sup> Hoists previously converted from -101 to -104 will have a serial number beginning with "2"

#### B. Reason

Goodrich has received information from an Operator reporting an issue with a rescue hoist system. According to the information reported to Goodrich, during a flight check the hoist lost the ability to hold the load at maximum rated capacity, causing the test load to strike the ground. The information reported to Goodrich further stated that after the aircraft

landed, the hoist cable could be manually extracted from the hoist using a load of less than 20 pounds. Goodrich has examined the subject hoist, has confirmed the failure, and has determined that the overload clutch failed. The behavior seen in the effected hoist has never been seen in any other hoist, beginning with the fleet introduction in 1989. Taking this fleet experience into account, this event is unique to Goodrich, but it is being closely monitored in cooperation with EASA and the FAA.

#### C. Description

The overload clutch design is common to all externally-mounted rescue hoists. Due to the nature of the reported incident, Goodrich is requiring the following inspection and operational check procedure be performed to allow operators to check the rescue hoists in their fleets and to ensure that they remain in a serviceable condition.

#### D. Compliance

The actions in this Alert Service Bulletin shall be performed within thirty (30) days of the release date of this document. Hoists which are in storage do not need to meet this 30 day requirement, but will need to be tested IAW this document before their next operation. Record the performance of this ASB in the hoist log and send an email to ASB.SIS-CA@utas.utc.com indicating the hoist part number, serial number, test load, and the results of the test.

If the hoist fails the test, the hoist shall be considered non-airworthy and the test result email will be forwarded to Goodrich Customer Service which will contact the operator with an RMA to return the failed hoist for maintenance.

#### E. Approval

This service bulletin contains no modification information that revises the FAA approved configuration.

#### F. Manpower

(1) The estimated amount of labor to accomplish the instructions of this Alert Service Bulletin for Rescue Hoist Assembly is 1 hour, as follows:

Perform cable conditioning lift	30 minutes	
Perform load test	30 minutes	

(2) The inspection described in this Alert Service Bulletin shall be performed by the operator.

	• •	•	•	•	•
G.	Material — Cost	and Availability			

None.

H. Tooling - Price and Availability

None.

Weight and Balance

Not affected.

J. Electrical Load Data

Not affected.

K. Software Accomplishment Summary

None.

L. Reference

None.

M. Other Publications Affected

None.

#### 2. Accomplishment Instructions

Goodrich requires that the hoist and aircraft be inspected in accordance with the requirements of the Goodrich Component Maintenance Manual (CMM) and the aircraft's Aircraft Maintenance Manual (AMM).

Upon successful completion of these inspections, Goodrich requires that a "Load Check" be performed to ensure that the hoist overload clutch does not operate with a load attached to the hook. This Load Check consists of raising, controlling, and lowering a weight with the hoist while the aircraft is on the ground.

The following load check operations ensure that the rescue hoist system is in a safe and operational condition for service:

A. To prevent the cable from being pulled between wraps on the outer layer of the cable drum, perform a cable conditioning lift before performing the load check. Cable conditioning can be accomplished by utilizing the following procedure:

- (1) From a hovering aircraft, fully extend the hoist cable to the down limit stop.
- (2) Reel in a load of approximately 500 lbs (227 kg), up to the maximum of the hoist rated capacity for of the full length of cable.

NOTE: Alternate methods of performing the load check can be used in lieu of the procedure below. Any alternate procedure can only be used if pre-approved by the airframe manufacturer.

- B. Park the aircraft and supply external power to the aircraft. Assure that the wheels are chocked or the parking brake is set.
- C. If the hoist is mounted to a movable boom, operate the boom to move the hoist as far out as required to lift the load without interfering with the aircraft. Extend the hoist cable (OUT) to the ground.

**WARNING:** Use of this procedure with a light helicopter has the potential to tilt over the aircraft when the boom is fully extended or the helicopter is in a very light configuration.

- D. Attach a weight of 880 lbs (400 kg) to the hoist cable hook. Locate the weight directly under the hoist to minimize the fleet angle and hence the lateral forces on the hoist and cable.
- E. Begin to slowly and carefully retract the hoist cable (IN) to lift the weight off the ground. While the cable is being retracted by the hoist, observe the hoist's performance to verify that the cable reels in a controlled manner.
- F. Stop retracting the hoist cable so that the weight is held suspended by the hoist. If a higher load is called for in accordance with Table 1, gently apply the additional load without imparting any shock loads. With the hoist in the stopped condition, observe the hoist's performance to verify that the load is being held secure and the load remains off the ground for a period of one (1) minute.
- G. After holding the load for one (1) minute, slowly extend the hoist cable (OUT) to lower the weight to the ground.
- H. Disconnect the load weight from the hoist cable hook.
- I. Inspect the first 30 feet (10 meters) of the cable for damage and size in accordance with the CMM. Fully retract the hoist cable.
- J. Load check complete.
- K. Perform the daily post-flight inspections required by both the Goodrich CMM and the aircraft AMM.

Mar 8/13

44301-10-15



#### L. Marking

(1) Document the incorporation of this ASB on the Hoist Log Card or maintenance record.

#### M. Point of Contact

Goodrich Corporation, Sensors & Integrated Systems (SIS-CA) Brea, CA 92821 Phone: 714-984-1461

### 3. <u>Material Information</u>

None



SL369H-147R1 SL369D-126R1 SL369E-078R1 SL369F-071R1 SL500N-027R1 SL600N-023R1 SL900-080R1

**DATE: 16 DECEMBER 2022** 

PAGE 1 OF 1

\* Supersedes Service Letter SL369H-147, SL369D-126, SL369E-078, SL369F-071, SL500N-027. SL600N-023, SL900-080 dated 09 August 2013. Updated Service and Operation Report Procedures.

### PROCEDURES FOR SERVICE AND OPERATIONS REPORTS

A Service and Operations Report (SOR) is used as a detailed record of service problems, solutions, and actions. It will:

- Improve report status
- Reduce confusion
- Improve document flow and visibility
- Improve final actions
- Improve turnaround time to satisfy customer need

Please complete the on-line SOR form (CF-7.57 SOR, latest revision) at <a href="https://www.mymd.aero/dashboard">https://www.mymd.aero/dashboard</a>. Select the following options to fill out a new SOR:

- Select the SUPPORT dropdown menu.
- Select New SOR.
- Select the Purpose of SOR submittal dropdown menu.
- Select Next to fill out a new SOR.

A complete form will immediately start the SOR procedure. The correct procedures for SOR submittal are:

### (1). SOR Procedure for Components Sent to MD Helicopters:

- (a). Complete the SOR form (CF-7.57 SOR, latest revision) on-line.
- (b). Attach a copy of the completed SOR form to the component to be sent to MD Helicopters.

# (2). SOR Procedures for All Other Situations With No Components Sent to MD Helicopters:

(a). Complete the SOR form (CF-7.57 SOR, latest revision) on-line.

For further assistance, contact the Field Service Department at MD Helicopters, LLC, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6300.



**DATE: 11 MARCH 2015** 

PAGE 1 OF 2

### NEW BLADE RETENTION BOLTS AVAILABLE

**MODELS AFFECTED:** All MD900 helicopters.

This Service Letter is issued to tell owners and operators that an improved blade retention bolt, Part No. (PN) 900R3100001-109, is available. The new bolt is made from Society of Automotive Engineers (SAE) Aerospace Material Specification (AMS) 5844 MP35N cobalt alloy for a higher tensile strength, the collets will distribute shear loads from the blade to the flexbeam better, the 12-point adjustment nut at the bottom of the bolt has a larger preload torque than the old cam mechanism and 6-point nut, and the handle has a stronger design. The new -109 blade retention bolt has a life-limit of 10,750 hours. The -109 bolts can be intermixed with -103 and -105 bolts. Procedures to install and remove the -109 bolts will be included in the next revision of CSP-900RMM-2, Servicing and Maintenance.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.



**DATE: 11 MARCH 2015** 

PAGE 2 OF 2

# **SERVICE LETTER**



**DATE: 20 MARCH 2015** 

PAGE 1 OF 2

# REPAIR FOR THE ENGINE CONTROL SYSTEM ROTARY SWITCH KNOBS

**MODELS AFFECTED:** All M900 Rotorcraft

This Service Letter is issued to tell owners and operators of a new repair procedure to prevent loose set screws in the rotary switch knobs of the engine / fuel control panel assembly, which can cause the knobs to come off. MDHI recommends that the knobs have an inspection, even if there is no indication of looseness. To make sure of the knob installation, do this rework for each knob:

(Ref. Figure 1 and CSP-900IPL-4, Subject 96-00-07)

- (1). Make sure the key switch is in the OFF position.
- (2). Remove power from the rotorcraft.
- (3). Remove the set screws from the knobs.

**NOTE:** Do not discard the set screws.

#### Sealant (C239)







- (4). Apply a small quantity of sealant (C239) (MIL-S-46163, Type 2, Grade N; or an equivalent alternative) to the threads of set screws.
- (5). Install the knobs with the set screws.
  - (a). Make sure that the set screws are installed in the groove of the shaft.
  - (b). Tighten with your hand the set screws.
  - (c). Then tighten the set screws with the applicable Allen wrench.
  - (d). Let the sealant cure for six (6) hours minimum, before flight operations.
- (6). Return power to the rotorcraft.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813.



**DATE: 20 MARCH 2015** 

PAGE 2 OF 2

## **SERVICE LETTER**

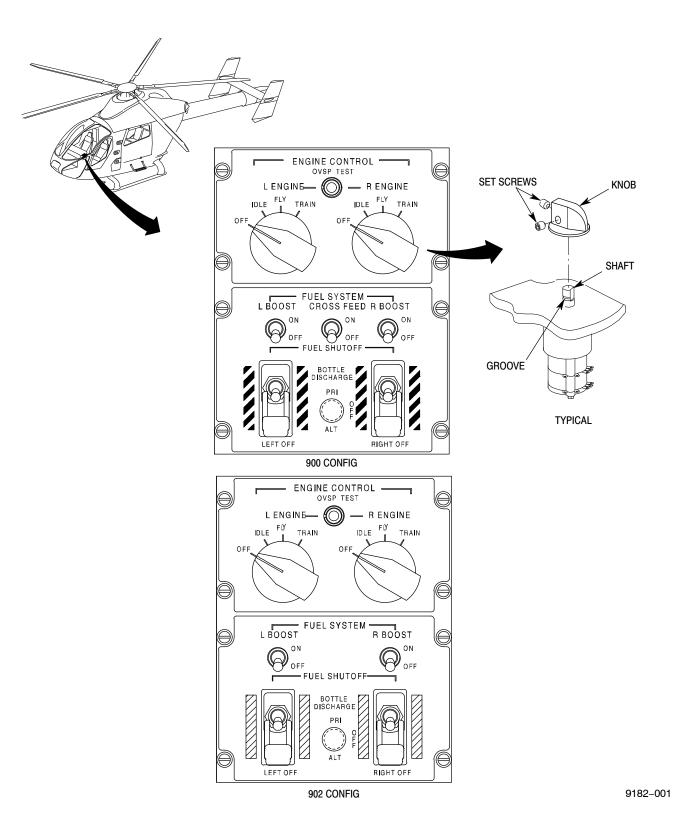


Figure 1. Repair of the Engine Control Knobs



SL369H-150 SL369E-085 SL500N-032 SL369D-132 SL369F-077 SL600N-026

SL900-083

**DATE: 31 MARCH 2017** 

PAGE 1 OF 2

# TRANSFER OF ALL TECHNICAL PUBLICATIONS INTO MyMD.aero™

**MODELS AFFECTED:** All MD Helicopters, Inc. (MDHI) Technical Publications.

Effective: 1 May 2017 all Technical Publications will no longer be accessible or free of charge through mdhelicopters.com.

MD Helicopters, Inc. has received numerous requests for updated electronic technical manuals. In an effort to provide owners and operators with the most up-to-date information, MDHI is pleased to announce that Technical Manuals and Rotorcraft Flight Manuals for all MDHI model helicopters will be available electronically on the MDHI customer portal MyMD.aero<sup>TM</sup>.

For customers to access MDHI technical publications users must sign up for a MyMD.aero<sup>TM</sup> login. Once your request for a login is approved, you will receive a confirmation e-mail with a link to the necessary steps to set up access to the on-line publications.

Annual subscription service fees will apply for all manuals and the user will have the ability to order individual publications rather than the entire package.

An electronic update notification service will notify registered users by e-mail of new or revised MDHI Technical Manuals, Rotorcraft Flight Manuals, Service Bulletins, Service Letters, Technical Bulletins, Overhaul Manuals, Illustrated Parts Catalogs, Part Price Lists, Publication Indexes, Publication Order Forms, Logbook Forms, Service Operations Reports, Publication Change Requests and applicable FAA Airworthiness Directives.

For further assistance, contact:

Aircraft Technical Publishers (ATP) Attn: Customer Service Dept. 101 South Hill Drive Brisbane, CA 94005

Office: 415-330-3730 Toll Free: 800-227-4610

www.atp.com

MD Helicopters, Inc. (MDHI) Attn: Customer Service Dept. 4555 East McDowell Road Mesa, AZ 85215

Office: 480–346–6300

http://www.mdhelicopters.com





SL369H-151 SL369D-135 SL369E-088 SL369F-079 SL500N-035 SL600N-028 SL900-084

**DATE: 15 MAY 2018** 

PAGE 1 OF 2

# ADDITION OF A SOFTWARE CONFIGURATION LIST TO THE ROTORCRAFT LOG BOOK

**MODELS AFFECTED:** All 369H, 369D, 369E, 369FF, 500N, 600N, and MD900 helicopters.

This Service Letter is issued to tell owners and operators that a Software Configuration List (CSP-RLB-L16) (ref. Figure 1 for an example sheet) will be added to the Rotorcraft Log Book (CSP-RLB). Write the serial number of the helicopter in the space on the top left-hand side of the page. The Software Configuration List has six columns:

**Date**: Write the date the software is installed, maintained, tested, updated, or removed.

**Nomenclature**: Write the name of the line-replaceable unit (LRU).

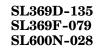
**OEM Serial Number**: Write the serial number of the OEM (original equipment manufacturer) LRU.

**MDHI Hardware Part Number**: Write the part number of the LRU the software is used with as shown in the part catalogs (ref. CSP-H-7, CSP-IPC-4, or CSP-900IPL-4 as applicable).

**MDHI Software Part Number**: Write the part number of the software as shown in the part catalogs (ref. CSP-H-7, CSP-IPC-4, or CSP-900IPL-4 as applicable).

**Notes**: Write applicable notes that can help future maintenance of the software.

For further assistance, contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1–800–388–3378 or (480) 346–6387. DATAFAX: (480) 346–6813.



**DATE: 15 MAY 2018** 

PAGE 2 OF 2



CSP-RLB-L16

# **SERVICE LETTER**

MDHI Software Part Number MDHI Hardware Part Number **OEM Serlal Number** Nomenclature Date

CSP-RLB-L16

Figure 1. Software Configuration List CSP-RLB-L16

ACFT/Serial No.



SL369H-152 SL369E-090 SL500N-037 SL900-085 SL369D-136 SL369F-081 SL600N-031

**DATE: 15 APRIL 2020** 

PAGE 1 OF 2

### HOW TO CLEAN AND DISINFECT THE HELICOPTER

**MODELS AFFECTED:** All 369H, 369D, 369E, 369F/FF, 500N, 600N, and 900 helicopters.

MDHI recommends owners and operators increase the frequency and level of cleaning to disinfect the cockpit, passenger, and cargo bays.

CAUTION Some commercial cleaning agents (for example, household cleaners) have chemicals (ammonia, bleach, or other harsh chemicals) that can cause corrosion or leave a residue that will also cause corrosion or cause damage to anti-reflective coatings. Examples of commercial products not to use are Fantastik® or Formula 409® or similar products with strong soap cleaners.



Do not use a vacuum cleaner or blower to clean the helicopter. This can create airborne particles that can be dangerous.

### General Cleaning:

- Cover your hands with disposable gloves, and wear protective face masks and eye wear.
- Clean oil and dirt deposits with dry-cleaning solvent, standard grade kerosene, or a solution of detergent soap and water.
- Clean dirt or dust from floors and metal surfaces with a moist cloth and small hand brush.
- A solution of 70 to 91% isopropyl alcohol can be use as a disinfectant, but there can be no ammonia in this solution.
- Be sure to clean surfaces of the helicopter interior and exterior and tools that are often touched during movement, entry and exit, and maintenance.

#### **Interior Trim and Upholstery**

- Clean knobs, buttons, and bezels with a moist cloth with soap and clean fresh water.
- Clean upholstery and trim panels with a mild soap and lukewarm water solution. Do not soak the upholstery or trim panels. Wipe the residue of the solution away with a soft cloth moistened with clean fresh water.
- Remove embedded dirt or grease from upholstery and carpet with a sponge or cloth moistened with an upholstery cleaner for the applicable fabric: leather, nylon, or vinyl.
- If necessary, dry-clean the seat upholstery with solvent. If the upholstery is dry-cleaned, the upholstery must be flameproofed again.
- Clean harnesses and seat belts with a soft-bristle brush and a mild solution of warm water and laundry detergent.

### Transparent Plastic

- Clean the exterior surface with a hand rub and clean fresh water. Remove oil spots and imbedded dirt with a mild soap and water solution. Flush the surface with clean fresh water and let the surface fully dry at ambient or use a soft damp chamois.
- Clean the interior surface with a cleaner made for aircraft plastic and soft paper wipes.

SL369H-152 SL369D-136 SL369E-090 SL369F-081 SL500N-037 SL600N-031 SL900-085



**SERVICE LETTER** 

**DATE: 15 APRIL 2020** 

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For further assistance, email or speak to MDHI Field Service, or go to <a href="https://www.mdhelicopters.com/contact.html">https://www.mdhelicopters.com/contact.html</a>.



SL369H-153 SL369D-137 SL369E-091 SL369F-082 SL500N-038 SL600N-032 SL900-086

**DATE: 26 MAY 2020** 

PAGE 1 OF 2

### **USE OF ENGINE FUEL BIOCIDES**

**MODELS AFFECTED:** All 369H, 369D, 369E, 369F/FF, 500N, 600N, and 900 helicopters.

MDHI recommends owners and operators to carefully use engine fuel biocide additives. The European Union Aviation Safety Agency (EASA) and the United States of America (USA) Federal Aviation Administration (FAA) have issued Continued Airworthiness documents:

- EASA Safety Information Bulletin 2020-06, Use of DuPont KATHON™ FP 1.5 Biocide, dated 20 March 2020 (attached)
- FAA Special Airworthiness Information Bulletin NE-20-04, Engine Fuel Jet Fuel Biocide Additive, dated 25 March 2020 (attached)

MDHI does not recommend or have procedures for fuel biocides in the applicable flight manuals or maintenance manuals. However, engine manufacturers do have recommendations and procedures in their manuals and supplements for biocide use for engine fuel systems installed in MDHI helicopters.

MDHI recommends that owners and operators examine and evaluate their use of fuel biocides in accordance with engine technical documentation. Use the guidelines and methods of the respective regulatory authorities to make sure biocides are correctly recorded in maintenance records and correctly used in aerospace systems.

For further assistance, email or speak to MDHI Field Service, or go to <a href="https://www.mdhelicopters.com/contact.html">https://www.mdhelicopters.com/contact.html</a>.

SL369H-153 SL369D-137 SL369E-091 SL369F-082 SL500N-038 SL600N-032 SL900-086



**SERVICE LETTER** 

DATE: 26 MAY 2020 PAGE 2 OF 2

EASA SIB No.: 2020-06



# Safety Information Bulletin

Airworthiness – Operations – Aerodromes

SIB No.: 2020-06

Issued: 20 March 2020

**Subject:** Use of DuPont Kathon™ FP 1.5 Biocide

#### **Ref. Publications:**

- EASA Certification Memorandum (CM) CM-PFIS-009 issue 1 "Fuel Specification Change".
- IATA Guidance Material on Microbiological Contamination in Aircraft Fuel Tanks.

### **Applicability:**

Type Certificate (TC) and Supplemental Type Certificate (STC) holders, maintenance personnel, owners and operators of turbine engine powered aircraft, aerodrome operators.

### **Description:**

The purpose of this SIB is to notify affected stakeholders of the recent occurrences related to the use of Kathon™ FP 1.5 biocide, including multi engine loss of thrust control. First investigations may indicate a higher susceptibility of some engine fuel control systems to Kathon™ FP 1.5 biocide as well as improper application and dosage of biocide during aircraft maintenance.

Several recent events have been documented showing adverse engine effects on the ground and in flight after application of a biocide treatment of the aeroplane. Two of these events were the result of overdosing the fuel system beyond the recommended dosage, however one event has found no evidence of misapplication. As a result, DuPont, the manufacturer of Kathon™ FP 1.5 biocide, sent a letter to distributors, customers and end-users of the product, requiring an immediate halt to all use of Kathon™ FP1.5 biocide for aviation fuel products.

Microbiological contamination is caused by micro-organisms (bacteria, moulds, yeasts) that grow in water and feed off the hydrocarbons in the fuel. Good housekeeping is the first measure to prevent water accumulation in the fuel tanks. In case microbiological contamination is detected and needs to be treated with biocides, all maintenance personnel, aircraft owners and operators are expected to follow up-to date instructions from the aircraft TC holder and (as applicable) STC holder(s) and to ensure that the correct method and dosage is applied. In case of discrepancies, e.g. due to different update cycles of aircraft documentation, the TC/STC holder should be contacted for further advice.

All TC and STC holders of turbine engine powered aircraft are expected to ensure that applicable engine limitations regarding the use of biocide are properly implemented into the aircraft's instructions for continued airworthiness. In case biocide usage is approved for airframe application only, the engine(s) should not be operated with fuel containing biocide and the aircraft TC (STC) holder is to provide appropriate maintenance procedures to prevent ingestion by the engine of fuel containing biocide.

EASA SIB No.: 2020-06

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Airworthiness Directive (AD) action under Regulation (EU) <u>748/2012</u>, Part 21.A.3B.

At this time, the safety concern described in this SIB does not warrant Safety Directive (SD) action under Regulation (EU) 965/2012, Annex II, ARO.GEN.135(c).

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant SD action under Regulation (EU) 139/2014, Annex II, ADR.AR.A.040.

### **Recommendation(s):**

TC and STC holders are responsible to provide operating limitations in case they have approved the use of Kathon™ FP 1.5 biocide for their type design (change).

Where the use of a biocide, in particular Kathon™ FP 1.5 biocide, is prohibited, EASA recommends the affected TC or STC approval holders to ensure that adequate procedures are in place to prevent biological contamination of aircraft fuel tanks. In case a hazardous level of biological contamination in any aircraft fuel tank(s) exists, EASA recommends approval holders to provide procedures to ensure that fuel contained in the tank is not used.

Where the continued use of Kathon™ FP 1.5 biocide is permitted, EASA recommends the affected TC or STC approval holders to ensure that adequate manuals, instructions and maintenance procedures are in place to ensure the appropriate use of the biocide, and to reflect the latest fuel and additives approvals.

EASA recommends affected TC and STC holders to ensure consistency of aircraft and engine documentation regarding (any) biocide usage and to include detailed application and easily understandable biocide dosage instructions. In particular, consistency between documentation of engine and aircraft TC or STC holders on individual aircraft-engine combination(s) should be verified (refer to EASA CM-PIFS-009).

EASA reminds affected TC and STC holders that any change to the list of approved fuels / additives could be a major change to the type certificate (refer to EASA CM-PIFS-009).

EASA recommends all maintenance personnel, owners and operators of turbine powered aircraft, to ensure before biocide usage that the latest TC/STC holders instructions are followed.

EASA recommends all aerodrome operators (see IATA Guidance Material, Ref. No: 9680-05, ISBN 978-92-9252-781-5) to ensure that aircraft operators are advised by their fuel provider(s) in case any fuel being delivered to an aircraft has been treated with biocide, including the type and concentration.

EASA SIB No.: 2020-06

### Contact(s):

For further information contact the EASA Programming and Continued Airworthiness Information Section, Certification Directorate, E-mail: <a href="mailto:ADs@easa.europa.eu">ADs@easa.europa.eu</a>.

To obtain a copy of IATA Guidance Material, contact the <u>IATA publications store website</u>.



# SPECIAL AIRWORTHINESS INFORMATION BULLETIN

**SAIB:** NE-20-04 **Date:** March 25, 2020

SUBJ: Engine Fuel – Jet Fuel Biocide Additive

This is information only. Recommendations aren't mandatory.

#### Introduction

This Special Airworthiness Information Bulletin (SAIB) advises gas turbine-powered aircraft and engine manufacturers, aircraft operators, fixed-base operators (FBOs), FAA repair stations, flight standards district offices, and other civil aviation authorities of the recent developments regarding the use of aviation fuel biocides and adverse engine operating conditions that have resulted from its use. The recommendations in this bulletin provide general guidance on the use of Kathon FP1.5 and Biobor JF biocide jet fuel additives that can be used to supplement existing original equipment manufacturer procedures.

While the airworthiness concern is not an unsafe condition that would warrant airworthiness directive (AD) action for every aircraft and engine combination, under Title 14 of the Code of Federal Regulations (14 CFR) part 39, some individual AD action may be necessary on certain aircraft engine combinations.

### **Background**

FAA approved aviation fuel operating limitations may be listed in the product's aircraft flight manual, type certificate data sheet (TCDS), installation manual, service instructions or manuals, or as limitations associated with a supplemental type certificate. Many of the fuel specifications allow for the use of a biocide to control microbiological growth in the fuel system of the aircraft. The two most common biocides in use today are Kathon FP1.5 and Biobor JF.

Microbiological contamination is caused by micro-organisms (bacteria, molds, yeasts) that grow in water and feed off the hydrocarbons in the fuel. Good housekeeping to prevent water accumulation in the fuel tanks is the most effective means to prevent this contamination. In case microbiological contamination is detected and needs to be treated with biocides, all maintenance personnel, aircraft owners and operators are expected to follow up-to-date instructions in the engine and aircraft manufacturer's Aircraft Maintenance Manuals (AMMs) to ensure that the correct method and dosage is applied. In case of discrepancies, e.g. due to different update cycles of aircraft documentation, the manufacturer should be contacted for further advice.

In engines and aircraft where biocides are approved for use, the manufacturers provide procedures in their AMMs for the application of these biocides into the aircraft fuel tanks. Several recent events have been documented showing adverse engine effects on the ground and in-flight after application of a biocide treatment of the aircraft. Two of these events were the result of overdosing the fuel system beyond the recommended dosage, however, one event has shown no evidence of misapplication. While lack of clarity of the AMM procedures, or lack of adherence to those procedures by the maintenance personnel, may have contributed to the overdosing events, evidence suggests that some engine models are more sensitive to Kathon FP1.5 concentration than others.

As a result, DuPont, the manufacturer and distributor of Kathon FP1.5, has recommended discontinuing the use of Kathon FP1.5 for aviation-related products. General Electric is also taking measures to remove Kathon FP1.5 from the approved fuels additives across all their engine

products while additional testing is being conducted. This SAIB provides recommendations in response to these recent events and notes publications for the proper continued use of biocide in fuel for products for which it is approved.

### Recommendations

- 1. Operators should consult their Aircraft Flight Manuals (AFMs), AMMs, the latest service documents, and communications from the manufacturers of their engines and aircraft to determine which biocide additives are approved for use on their aircraft and engines and adjust their procedures to reflect the latest approvals.
- 2. Gas turbine powered engine and aircraft manufacturers and operators should review current biocide application procedures and practices and consider the following recommendations:
  - a. Aircraft fuel tanks should have the following minimum volume of fuel upon completion of biocide treatment:
    - i. 1/3 of tank volume for the initial treatment of a tank with confirmed biological contamination. This may be increased if the aircraft is not limited by fuel weight for its intended mission.
    - ii. 100% of tank volume for a second treatment of a tank with confirmed biological contamination (if necessary).
    - iii. 10% of tank capacity for preparing aircraft for storage.
  - b. The additive should be applied to an aircraft fuel tank as follows:
    - i. For aircraft equipped with underwing pressure refueling capability, the additive should be injected with a metered injection cart at the concentration levels shown in Table 1. The injection cart should be equipped with a graduated additive vessel to allow the determination of the volume of additive injected during a biocide servicing.
    - ii. For all other aircraft, a means should be provided to blend the biocide additive into the jet fuel upstream of a pump and/or filtering system prior to loading into the aircraft fuel tank. This can be accomplished by blending the biocide additive into a refueling vehicle or separate fuel tank and then pumping the fuel into the aircraft.
  - c. The resulting concentration of biocide additive in the aircraft fuel tank should not exceed the levels shown in Table 1. Prior to treatment, care should be taken to account for residual biocide levels that exist in the tank, either from previous treatments or from the fuel supplier.
  - d. For each application of an approved biocide additive, record the following information:
    - i. Type of biocide used
    - ii. Quantity of fuel in the aircraft tank before additive injection
    - iii. Quantity of fuel uplifted into the tank when injecting the biocide additive
    - iv. Quantity of fuel in the tank after injection of the biocide additive
    - v. Quantity of biocide additive injected for each application

Table 1
Maximum Recommended Concentrations in Jet Fuel

	Kathon FP1.5	Biobor JF
Maximum Concentration		
of Biocide Additive in	$0.135 \text{ ml/L}^1$	$0.269 \text{ ml/L}^2$
Uplifted Fuel		
Maximum Concentration		
of Biocide Additive in	$0.100$ ml/L $^3$	$0.199 \text{ ml/L}^4$
Aircraft Fuel Tank after		
Biocide Injection		

- 3. Operators, Repair Stations, and FBOs should review their procedures, training requirements, and training records of persons charged with adding biocide to affected aircraft. They should also verify that their biocide application procedures are consistent with those provided in the manufacturer's AMM, and that maintenance personnel are adhering to those procedures.
- 4. Operators and FBOs should keep detailed records of any biocides applied to fuel farms and uploaded to aircraft such that the proper end dosage can be determined based on the fuel supplied.
- 5. Operators should review their records for potential unreported cases of fuel control damage or contamination that may be the result of biocide contamination. If any cases are found, they should be reported to the engine and aircraft manufacturer.
- 6. Procedures for decontaminating fuel systems on aircraft should also consider:
  - a. Maximum biocide concentration permitted in uplifted fuel and in the fuel in the aircraft tank are clearly specified.
  - b. Proper quality controls are included in the process such that real-time calculation are not required by the crew trying to perform the decontamination tasks.
  - c. Necessary caution statements and warnings for administering any fuel additive that can overdose the fuel system and cause hazardous engine effects are included.
- 7. Environmental regulations may restrict the use of certain aviation jet fuel biocides in some localities. The FAA recommends that the engine and aircraft manufacturers ensure that adequate procedures are in place to prevent biological contamination of aircraft fuel tanks using alternative means other than the restricted biocide.
- 8. Engine and aircraft manufacturers should survey their operators who may have experienced biocide contamination of engine fuel system components and report the results to their appropriate airworthiness authority.
- 9. Flight Standards Inspectors and airworthiness authorities should focus audit activities on the proper application of all biocides. Pay particular attention to those steps that ensure the proper concentration of additive is blended into the fuel.

### **For Further Information Contact**

Mark Rumizen, Senior Technical Specialist, AIR-600, Aircraft Certification Service, 1200 District Avenue, Burlington, MA 01803; phone: 781-402-4609; email: <a href="mark.rumizen@faa.gov.">mark.rumizen@faa.gov.</a>

<sup>&</sup>lt;sup>1</sup> 0.135 ml of Kathon FP1.5 per liter of jet fuel is equal to 135 parts per million (ppm) by volume.

<sup>&</sup>lt;sup>2</sup> 0.269 ml of Biobor JF per liter of jet fuel is equal to 269 parts per million (ppm) by volume (also equivalent to 364 ppm by weight based on a minimum density jet fuel)

<sup>&</sup>lt;sup>3</sup> 0.100 ml of Kathon FP1.5 per liter of jet fuel is equal to 100 parts per million (ppm) by volume.

<sup>&</sup>lt;sup>4</sup> 0.199ml of Biobor JF per liter of jet fuel is equal to 199 parts per million (ppm) by volume (also equivalent to 270 ppm by weight based on a minimum density jet fuel)



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# GARMIN GPS AND TAWS ALERTS SERVICE ADVISORY

**MODELS AFFECTED:** All 369H, 369D, 369E, 369F, 369FF, 500N,

600N, and 900 helicopters.

Garmin has released Service Advisory <u>20109 Rev A</u> dated 07 October 2020. The Service Advisory relates to the erroneous GPS position and momentary false TAWS alerts for specific Garmin products within a specified global region.

See the complete Service Advisory at: <a href="https://www.garmin.com/en-US/aviationalerts/service-advisory-20109-erroneous-gps-position-and-momentary-false-taws-alerts/">https://www.garmin.com/en-US/aviationalerts/service-advisory-20109-erroneous-gps-position-and-momentary-false-taws-alerts/</a>

For further assistance, email or speak to a MDHI Field Service at: <a href="https://www.mdhelicopters.com/contact.html">https://www.mdhelicopters.com/contact.html</a>.

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### **NEW THRUSTER CONTROL BEARINGS AVAILABLE**

**MODELS AFFECTED:** All MD Explorer Rotorcraft

CAUTION

Do not mix 900F3420003-101 control bearings with CEKP3AR11-2 control bearings. Replace all control bearings as a set. Do not mix different part numbers.

This Service Letter is issued to tell owners and operators that there are alternate Part No. 900F3420003-101 control bearings available to replace CEKP3AR11-2 control bearings as a complete set.

(Ref. Figure 1)

For assistance or questions, speak to your MDHI Field Service Representative or:

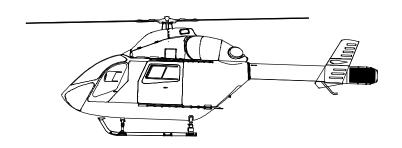
- Go to <a href="https://www.mdhelicopters.com/contact.html">https://www.mdhelicopters.com/contact.html</a> for MDHI Field Service.
- Put an entry in your <a href="https://www.mymd.aero/">https://www.mymd.aero/</a> account.
- Fill out a Service and Operation Report (SOR) at <a href="https://www.mymd.aero/dashboard">https://www.mymd.aero/dashboard</a> (select the **SUPPORT** dropdown menu, and then select **New SOR**).
- Mail a copy or e-mail a scanned of PDF copy to your MDHI Field Service Representative.

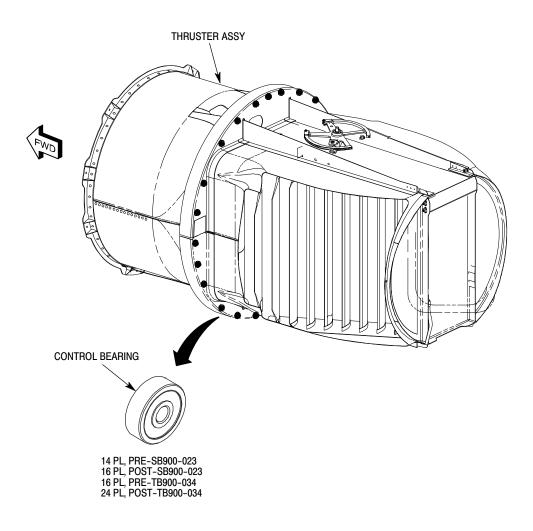


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Figure 1. Location of Control Bearings in the Thruster Assembly



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### MD HELICOPTERS OWNERSHIP CHANGE

MODELS AFFECTED: All MD Helicopter Models

As part of the sale of the assets from MD Helicopters, Inc. to MD Helicopters, LLC, this Service Letter is issued to inform owners and operators of MD Helicopters that the name of the new owner is MD Helicopters, Limited Liability Corporation (MD Helicopters, LLC).

MD Helicopters, LLC will continue to operate at its current location at 4555 East McDowell Road, Mesa, Arizona 85215. Production, field support, technical publications, and spares support will be uninterrupted. Both the H3WE (single-engine or 369 / 500N / 600N Series) and H19NM (twin-engine or MD900) Type Certificates (TCs) have been transferred to MD Helicopters, LLC effective 5 August 2022.

For assistance or questions, speak to your Field Service Representative or go to <a href="https://www.mdhelicopters.com/contact.html">https://www.mdhelicopters.com/contact.html</a>.

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