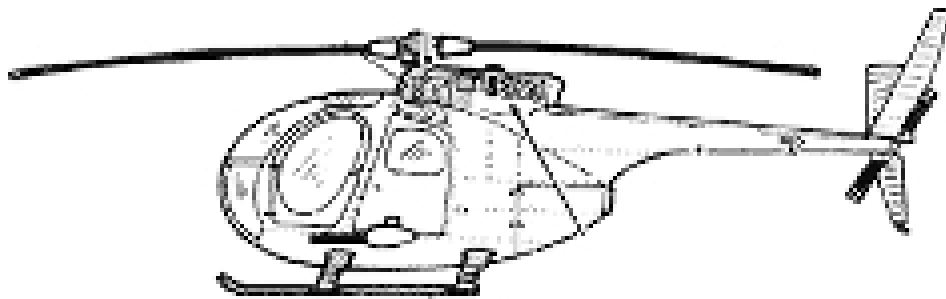




# External Attach Frame MD-500 Installation Manual



*Tyler* - External Attach Frame  
For MD-500 Series Helicopters  
**FAA STC # SR02067LA**



**PLEASE RETURN THIS MANUAL WITH EQUIPMENT**



Tyler Camera Systems 14218 Aetna Street Van Nuys, California 91401 • USA  
www.tylertech.net • 800-390-6070 • FAX (818) 989-0423 (818) 989-0423





MODEL: MD 369  
 JOB #: \_\_\_\_\_

REPORT #: MDINSTAL-005

DATE: 1/3/07

**EXTERNAL ATTACH FRAME  
 INSTALLATION MANUAL FOR  
 MD 369 D, E, F, FF, 500N, 600N MODEL**

PREPARED BY: R. LAMB  
1/3/07

# OF PAGES: \_\_\_\_\_

CHECKED BY: G. WOOD  
1/3/07

# OF DRAWINGS: 0

APPROVED BY: \_\_\_\_\_

REVISIONS

DATE	PAGES AFFECTED	REVISION LETTER	REVISION DESCRIPTION	APPROVAL
1/3/07	ALL	NC	ORIGINAL ISSUE	

# External Attach Frame

## Installation

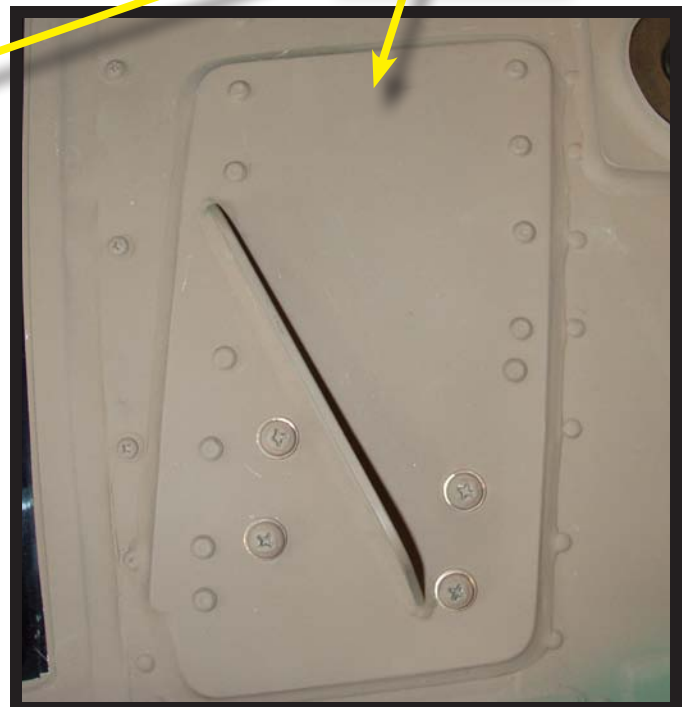
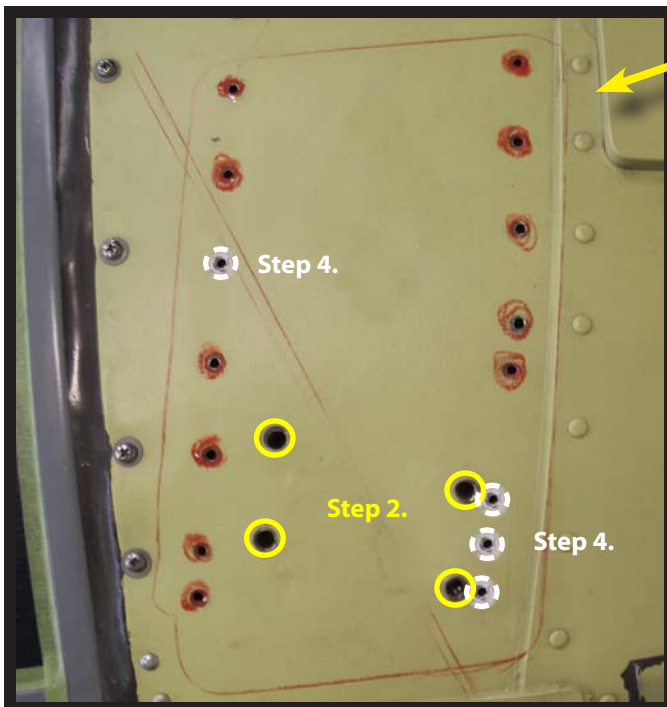


## Upper Support Bracket - Permanent Installation to Hard-Point

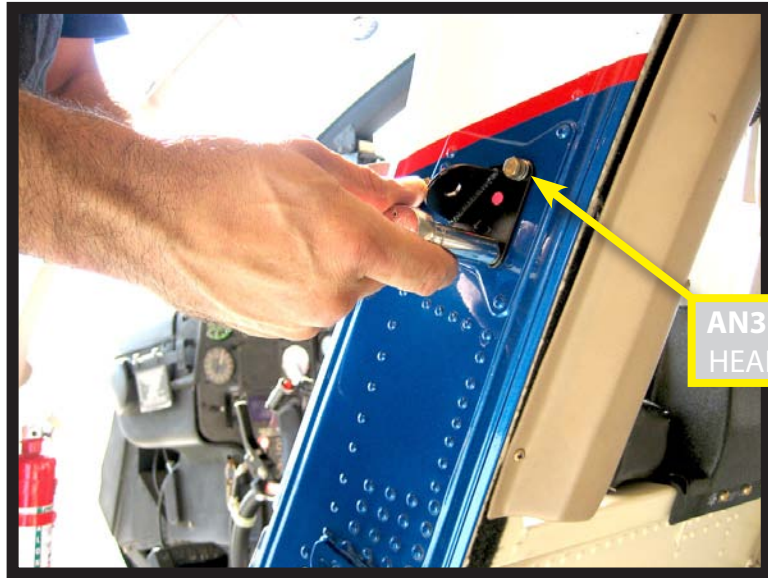
1. Place Bracket on the aircraft hard-point just above rear door, and align 4 holes in Bracket with threaded inserts.
2. Temporarily attach Bracket using 4 hex-head bolts # AN3-5A and 4 washers AN960-10 (white dotted circles).
3. Use a china marker or pencil to outline Bracket on aircraft skin, then remove Bracket.
4. Locate and mark 4 rivets on aircraft skin (yellow circles).
5. Drill out and remove all 15 rivets within the marked area on aircraft.
6. Locate the 4 rivets marked with dotted circles, and dimple aircraft skin at these holes only (using proper tools).
7. Install 4 flush rivets # CR3212-5-3 in the aircraft skin (dimpled holes only).
8. Temporarily re-install the Bracket with using the 4 bolts and washers.
9. From the inside of aircraft, use a punch to mark the back of the Bracket for the rivet holes to be drilled.
10. Remove Bracket, and drill the holes as marked on the back side, for cherry max rivets # CR3213/4-3.
11. De-burr the holes on both sides.
12. Clean and prime all surfaces of the Bracket - and wait for primer to dry.
13. Install a small amount of 870 B1/2 proseal between the aircraft skin and Bracket.
14. Permanently attach Bracket with 11 cherry max rivets, and 4 bolts with washers (torque to 50-70 inch pounds).
15. Clean up proseal with alcohol or another approved cleaning solvent.

*Repeat above steps for Right Side Bracket installation.*

Aircraft Left Side  
Hard-Point  
Above Rear Door



Hard-point  
forward of rear door



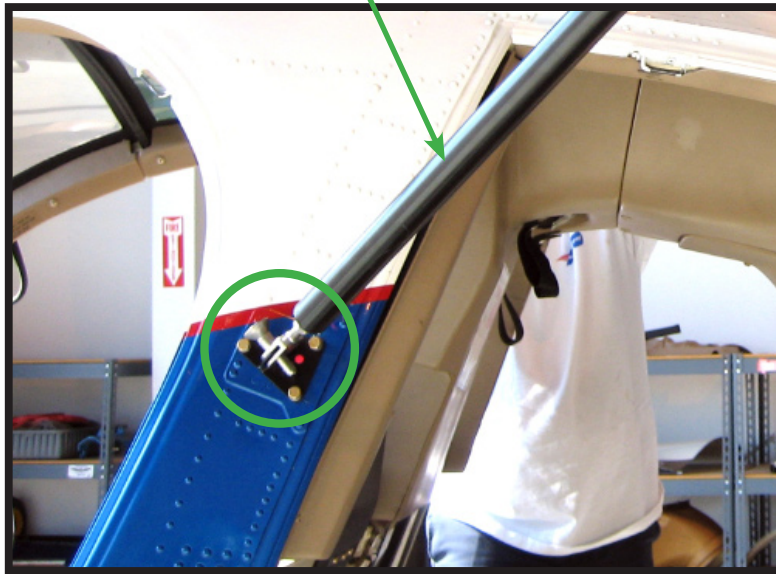
AN3-5A HEX  
HEAD BOLTS

Hard-point  
aft of rear door



- 1 • INSTALL THE THREE "T" BRACKETS WITH THE AN3-5A HEX HEAD BOLTS SUPPLIED.  
TORQUE TO 50-70 INCH POUNDS

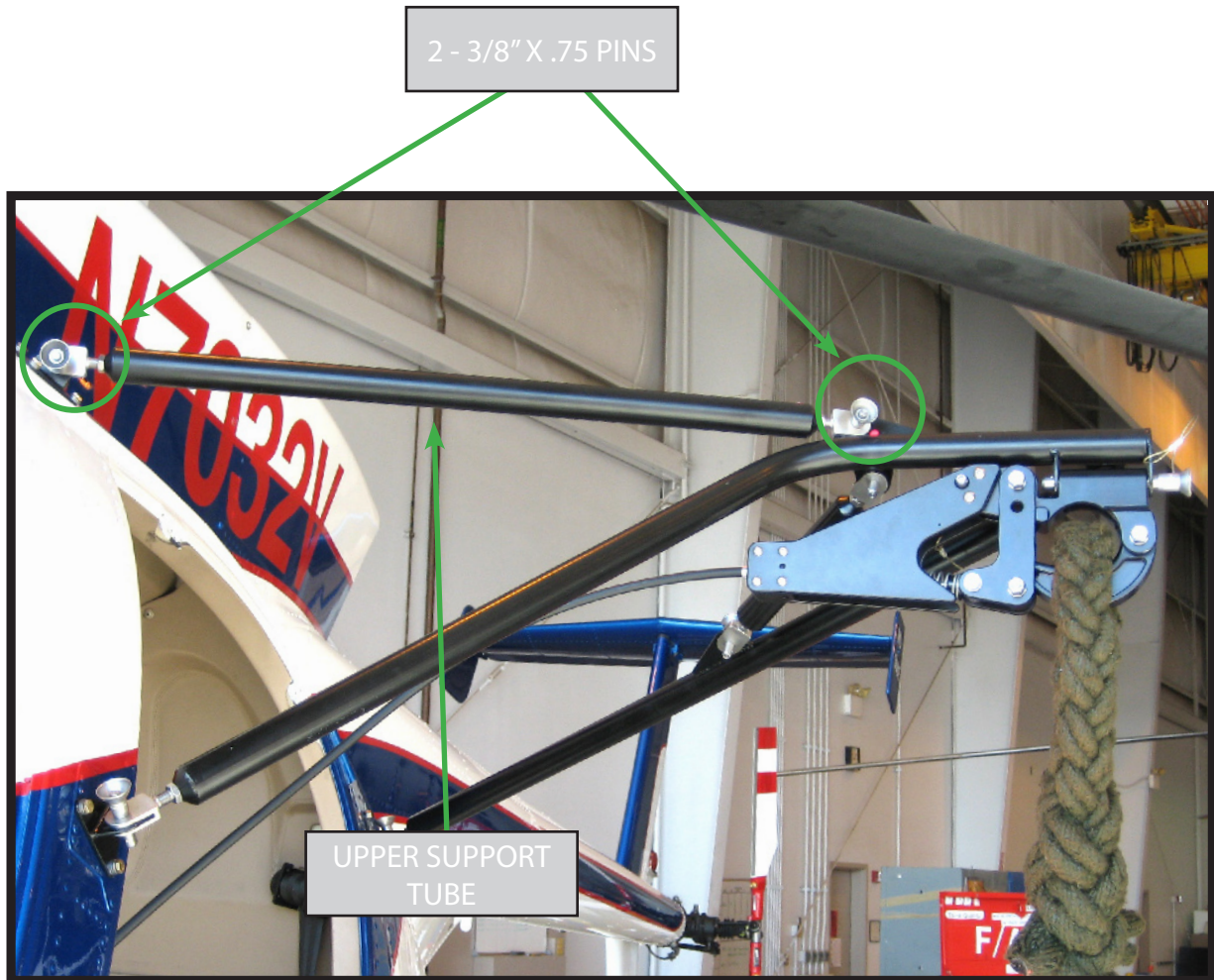
MAIN SUPPORT  
TUBE



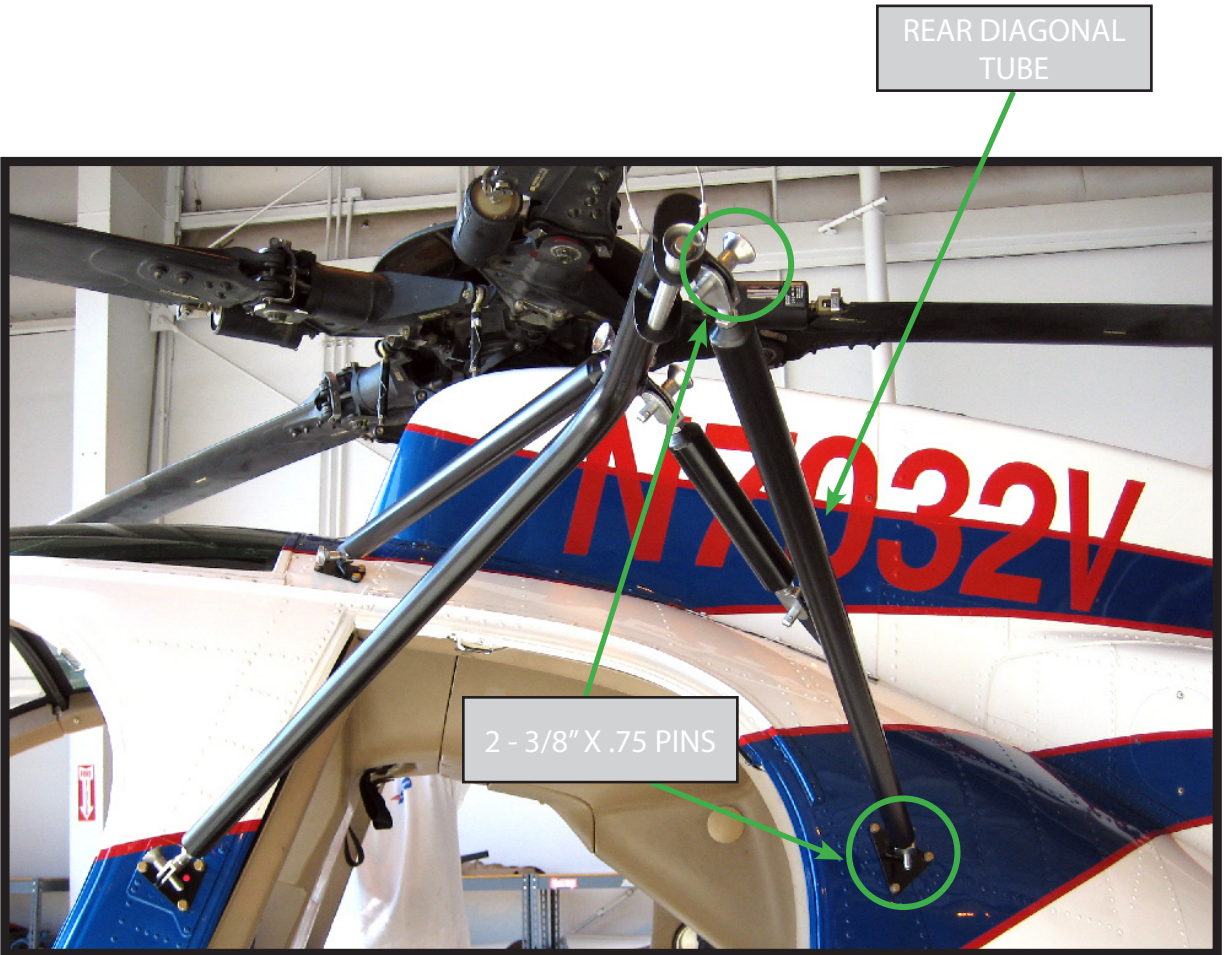
2 • INSTALL THE MAIN SUPPORT TUBE AND SECURE WITH 3/8 X .75 QUICK PIN



3/8" QUICK PIN

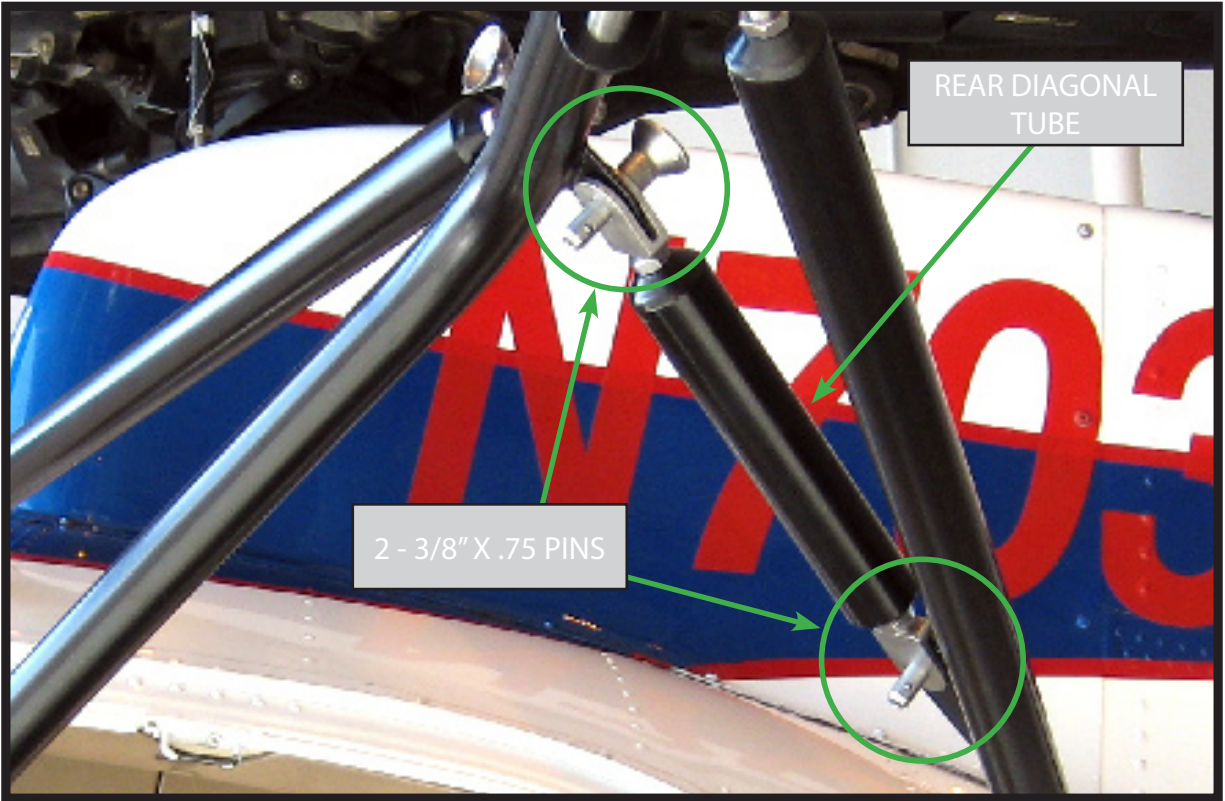


- 3 • INSTALL UPPER SUPPORT ROD, ONE SIDE TO THE UPPER "T" BRACKET AND THE OTHER TO THE MAIN SUPPORT TUBE WITH TWO (2) 3/8" X .75 QUICK PINS



- 4 • INSTALL REAR DIAGONAL SUPPORT TUBE, ONE SIDE TO THE REAR "T" BRACKET AND THE OTHER TO THE REAR OF THE MAIN SUPPORT TUBE WITH TWO (2) 3/8" X .75 QUICK PINS

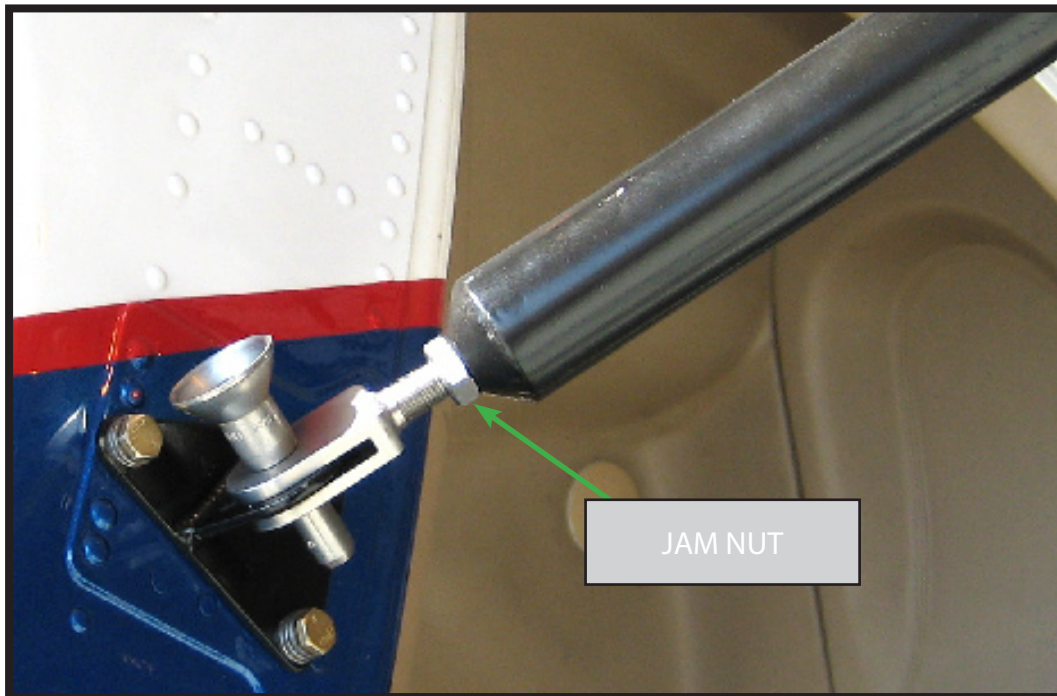


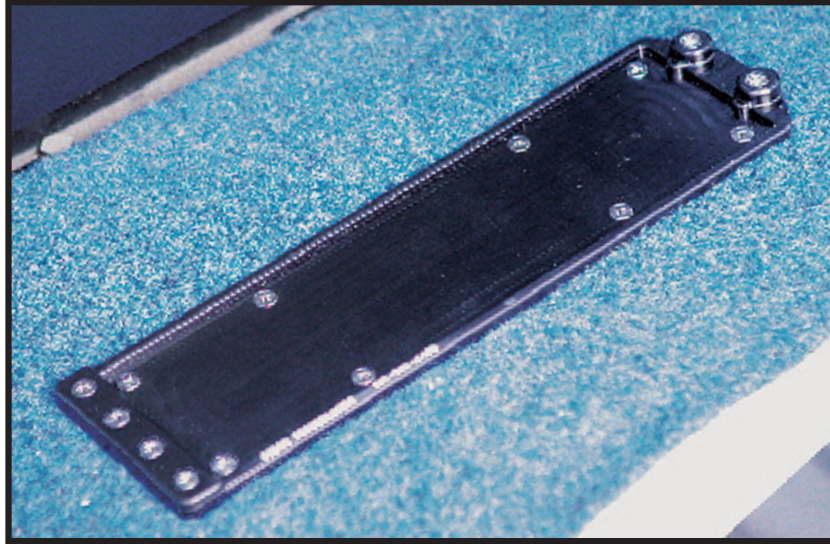


- 5 • INSTALL SHORT SUPPORT TUBE, ONE SIDE TO THE REAR DIAGONAL TUBE AND THE OTHER TO THE REAR OF THE MAIN SUPPORT TUBE WITH TWO (2) 3/8" X .75 QUICK PINS



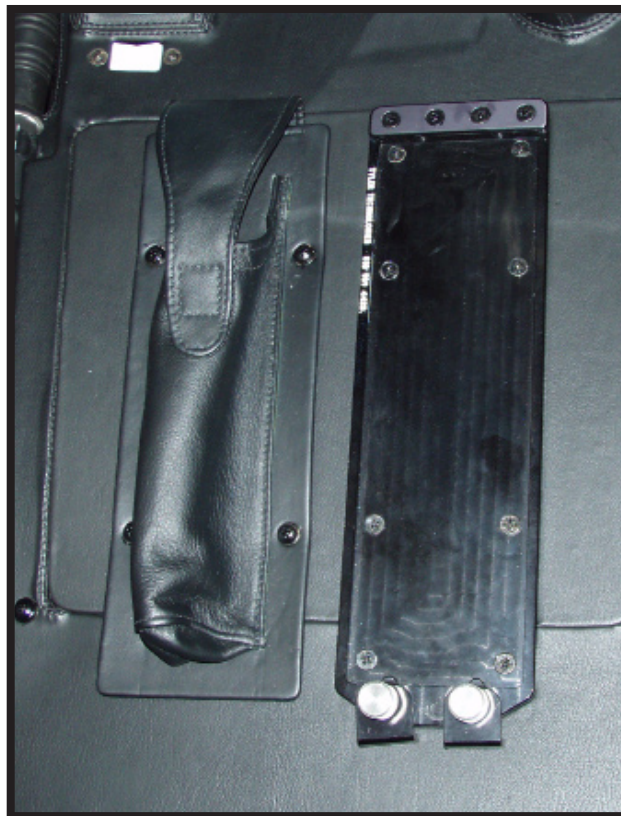
6 • ONCE ALL THE TUBES ARE CONNECTED, YOU CAN START ADJUSTING THE SUPPORT TUBES TO GET THE MAIN TUBE'S ATTITUDE ABOUT 10 DEGREES ABOVE LEVEL. ONCE THIS IS ADJUSTED, LOCK ALL JAM NUTS ON THE SUPPORT TUBES





7 • INSTALL THE QUICK RELEASE FLOOR PLATE. THE FLOOR PLATE LOCATION IS AT THE OPERATOR'S DISCRETION, HOWEVER, MAKE SURE THAT THE PLACEMENT WILL NOT INTERFERE WITH ANY COCKPIT CONTROLS.

Alternate / Vertical mounting position  
on "Broom Closet" in Forward Cabin



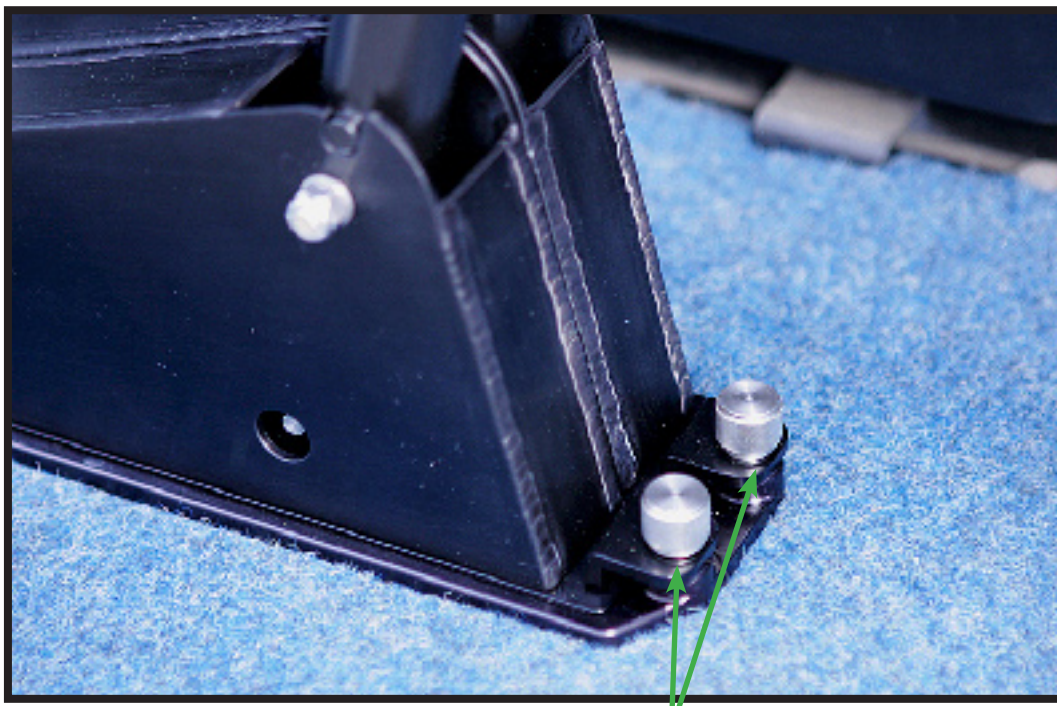
1/2" X 3" QUICK PIN



8 • INSTALL QUICK RELEASE HOOK ASSEMBLY WITH THE 1/2" X 3" QUICK PIN



9 • INSTALL RELEASE HANDLE ASSEMBLY INTO QUICK RELEASE FLOOR PLATE, MAKING SURE THE QUICK RELEASE CABLE IS ROUTED TO STAY CLEAR OF ANY COCKPIT CONTROLS, PILOT OR CO-PILOT FUNCTIONS



Hook Release Handle Lock down knobs



10 • CHECK FOR PROPER RELEASE FUNCTION AFTER INSTALLATION IS COMPLETE

**END OF INSTALLATION**

United States Of America  
Department of Transportation - Federal Aviation Administration  
**Supplemental Type Certificate**

*Number* SR02067LA

*This Certificate issued to* Tyler Camera Systems  
14218 Aetna Street  
Van Nuys, California 91401

*Certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 6 of the Civil Air Regulations & Part 27 of the Federal Aviation Regulations. Certification basis is set forth in Type Certificate Data Sheet H3WE*  
*Original Product Type Certificate Number:* H3WE

*Make:* MD Helicopters Inc. (MDHI)

*Model:* 369D, 369E, 369F, 369FF, 500N

*Description of Type Design Change:* : Installation of External Attach Frame in accordance with FAA Approved Tyler Camera Systems Master Drawing List No. MDEF-001, Revision A, dated June 28, 2007, for MDHI models 369D, 369E, 369F, 369FF, 500N, or later FAA approved revision. The Installation Manual is No. MDINSTAL-005 dated January 3, 2007 or later FAA approved revision and the Instructions for Continued Airworthiness is in MDEF-005, dated 14 August 2007 or later FAA accepted revision.

*Limitations and Conditions:* : Approval of this change in type design applies to the aircraft models listed above only. The installation should not be incorporated in any aircraft unless it is determined that the interrelationship between this installation and any previously approved configuration will not introduce any adverse effect upon the airworthiness of the aircraft. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission. (Continued)

*This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.*

*Date of application:* September 7, 2006

*Date reissued:*

*Date of issuance:* September 4, 2007

*Date amended:*



*By direction of the Administrator*

*Michael E. Neil*  
(Signature)

*for* Manager, Airframe Branch  
Los Angeles Aircraft Certification Office  
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

United States Of America  
Department of Transportation - Federal Aviation Administration  
**Supplemental Type Certificate**  
(Continuation Sheet)

INSTRUCTIONS: The transfer endorsement below may be used to notify the appropriate FAA Regional Office of the transfer of this Supplemental Type Certificate.

The FAA will reissue the certificate in the name of the transferee and forward it to him.

---

---

**TRANSFER ENDORSEMENT**

Transfer the ownership of the Supplemental Type Certificate Number \_\_\_\_\_

to *(Name of transferee)* \_\_\_\_\_

*(Address of transfer)* \_\_\_\_\_  
*(Number and street)*

\_\_\_\_\_  
*(City, State, and Zip code)*

from *(Name of grantor)* *(Print or type)* \_\_\_\_\_

*(Address of grantor)* \_\_\_\_\_  
*(Number and street)*

\_\_\_\_\_  
*(City, State, and Zip code)*

Extent of Authority (if licensing agreement): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date of Transfer: \_\_\_\_\_

Signature of grantor *(In ink)*: \_\_\_\_\_

---

*Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.*



United States Of America  
Department of Transportation - Federal Aviation Administration

# Supplemental Type Certificate

(Continuation Sheet)

*Number* SR02067LA

*Limitations and Conditions:* (Continued)

The FAA Approved Rotorcraft Flight Manual Supplement No. Document Number EF-RFM-001, dated August 28, 2007, or later FAA Approved revisions, for the External Attach Frame is required.

A copy of this Certificate must be maintained as part of the permanent records for the modified aircraft. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

- END -

---

*Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.*



14218 Aetna St.  
Van Nuys, CA. 91401  
Document Number CR-RFM-002

**FAA APPROVED**  
**ROTORCRAFT FLIGHT MANUAL SUPPLEMENT**  
**FOR THE**  
**MD HELICOPTERS MODEL**  
**MD-500D, 500E, 530FF, & 520N**  
**WHEN EQUIPPED WITH THE**  
**EXTERNAL ATTACH FRAME**

REGISTRATION #: \_\_\_\_\_ SERIAL #: \_\_\_\_\_

The information in this supplement is FAA approved material and must be attached to the FAA Approved MD-500 series Rotorcraft Flight Manual when the aircraft has been modified by the installation of Tyler Camera Systems External Attach Frame in accordance with:

**STC # SR 02067 LA**

The information contained herein supplements or supersedes the information in the basic Rotorcraft Flight Manual only in those areas listed herein. For limitations, Procedures and Performance information not contained in this Supplement, consult the basic Rotorcraft Flight Manual.

FAA Approved: \_\_\_\_\_

*[Signature]*  
Manager, Flight Test Branch, ANM-160L  
Federal Aviation Administration  
Los Angeles Aircraft Certification Office  
Transport Airplane Directorate

FAA Date: \_\_\_\_\_

*[Signature]*  
August 28, 2007



14218 Aetna St.  
Van Nuys, CA. 91401  
Document Number EF-RFM-001

Supplement to the MD Helicopters RFM for  
Models MD-500D, 500E, 530FF, & 520N  
when modified with the MD 5 External Attach Frame

STC Number SR 02067 LA

## LOG OF PAGES

Rev No.	Pg No	Date	Description of Change	FAA Approved
Initial Issue	1-6	28 Aug 2007	Initial Issue	 Mgr, Flight Test Branch ANM-160L, FAA, Los Angeles ACO, Transport Airplane Directorate  DATE: <u>8-28-2007</u>



14218 Aetna St.  
 Van Nuys, CA. 91401  
 Document Number EF-RFM-001

Supplement to the MD Helicopters RFM for  
 Models MD-500D, 500E, 530FF, & 520N  
 when modified with the MD 5 External Attach Frame

STC Number SR 02067 LA

## TABLE OF CONTENTS

SECTION	PAGE
<b>SECTION 1 – GENERAL .....</b>	<b>2</b>
<b>SECTION 2 – LIMITATIONS .....</b>	<b>5</b>
1.1 AIRSPEED .....	5
1.2 MAXIMUM WEIGHT LIMIT.....	5
1.3 LATERAL CG LIMITS .....	5
<b>2. SECTION 3 – EMERGENCY PROCEDURES .....</b>	<b>5</b>
<b>3. SECTION 4 – NORMAL PROCEDURES .....</b>	<b>6</b>
<b>4. SECTION 5 - PERFORMANCE .....</b>	<b>6</b>
<b>5. SECTION 6 – WEIGHT AND BALANCE.....</b>	<b>6</b>

## TABLE OF FIGURES

FIGURE	PAGE
FIGURE 1. VIEW OF INSTALLED FRAME .....	2
FIGURE 2. LEFT SIDE INSTALLATION OF FRAME .....	3
FIGURE 3. HOOK RELEASE HANDLES .....	4
FIGURE 4. HOOK RELEASE .....	4



14218 Aetna St.  
Van Nuys, CA. 91401  
Document Number EF-RFM-001

Supplement to the MD Helicopters RFM for  
Models MD-500D, 500E, 530FF, & 520N  
when modified with the MD 5 External Attach Frame

STC Number SR 02067 LA

## SECTION 1 – GENERAL

The Tyler Camera Systems MD-5 External Frame consists of the steel tubular frame members that attach to the existing hard point on the roof and side of the rotorcraft.



Figure 1. View of Installed Frame



14218 Aetna St.  
Van Nuys, CA. 91401  
Document Number EF-RFM-001

Supplement to the MD Helicopters RFM for  
Models MD-500D, 500E, 530FF, & 520N  
when modified with the MD 5 External Attach Frame

STC Number SR 02067 LA

The frame is attached to the hard points using quick release pins for ease of installation as shown in Figure 2.



**Figure 2. Left Side Installation of Frame**

The External Attach Frame can be used in conjunction with STC # SR 01682 LA for the MD-5 Cargo Rack Installation

**CAUTION**

Lateral CG can be easily exceeded with heavy weights on the  
External Attach Frame

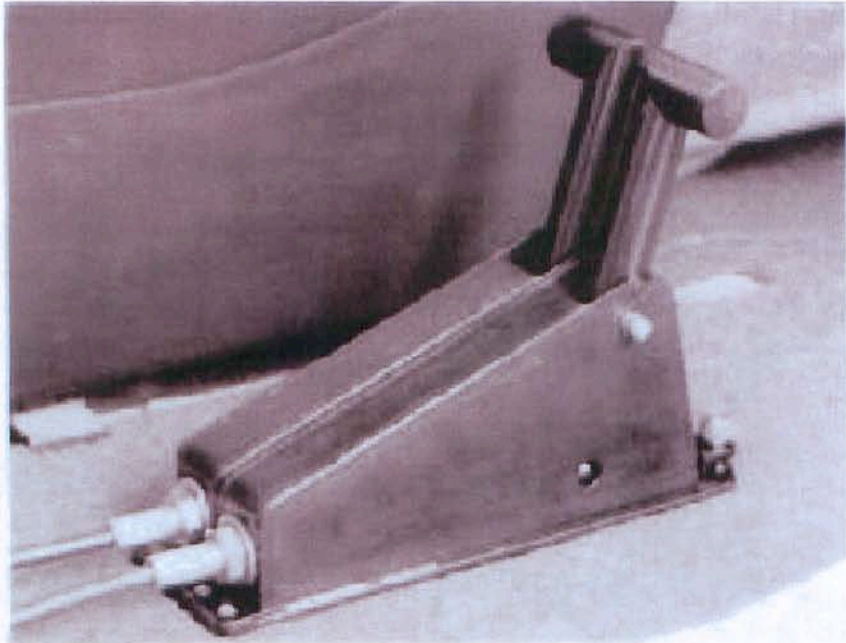
See Limitation Section for CG Limits



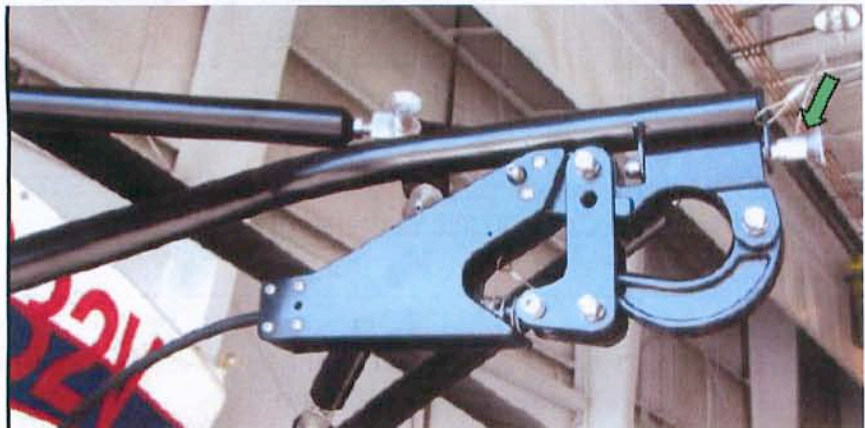
14218 Aetna St.  
Van Nuys, CA. 91401  
Document Number EF-RFM-001

Supplement to the MD Helicopters RFM for  
Models MD-500D, 500E, 530FF, & 520N  
when modified with the MD 5 External Attach Frame

STC Number SR 02067 LA



**Figure 3. Hook Release Handles (Control Closet between Pilots)**



**Figure 4. Hook Release**



## **SECTION 2 – LIMITATIONS**

### **1.1 AIRSPEED**

#### **CARGO INSTALLED**

Reduce to hover flight to load cargo.  
Vne with Cargo attached = 15 knots

#### **NO CARGO INSTALLED**

Reduce the published Power – On V<sub>NE</sub> 30 KIAS with the External Frame.

### **1.2 REQUIRED CREW**

A second pilot is required in the front seat to jettison the load when anything is attached to the attach frame hook.

### **1.3 MAXIMUM WEIGHT LIMIT**

Maximum Weight 415 pounds on hook

### **1.4 LATERAL CG LIMITS**

The lateral center of gravity limit is  $\pm 5.0$  inches with airspeed limits published above.

## **2. SECTION 3 – EMERGENCY PROCEDURES**

Jettison load from hook by pulling out and back on the release handles.





14218 Aetna St.  
Van Nuys, CA. 91401  
Document Number EF-RFM-001

Supplement to the MD Helicopters RFM for  
Models MD-500D, 500E, 530FF, & 520N  
when modified with the MD 5 External Attach Frame

STC Number SR 02067 LA

### 3. SECTION 4 – NORMAL PROCEDURES

No Change

### 4. SECTION 5 - PERFORMANCE

No Change

### 5. SECTION 6 – WEIGHT AND BALANCE

The weight and balance data must be considered for each flight.  
The load on the external attach frame must be considered.

#### **CAUTION**

**Lateral CG can be easily exceeded with heavy weights on the external attach frames. Compute the aircraft weight and balance before flight with loads on the frames.**

The longitudinal CG of the external frame hook is Sta 96.9 inches

The lateral CG of the external frame hook is:

Left: - 50.0 inches

Right: + 50.0 inches