



EXTERNAL ATTACH FRAME

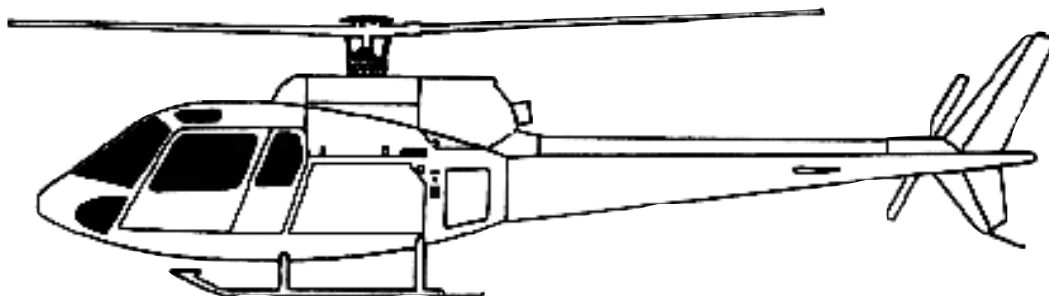
ASTAR / TWINSTAR
INSTALLATION MANUAL



Tyler - External Attach Frame

For Eurocopter AS-350 & AS-355 Series Helicopters

FAA STC # SR01652 LA



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





MODEL: Eurocopter 350 &355
 JOB #: _____

REPORT #: INSTLU - 001

DATE: 3-11-03

**EXTERNAL ATTACH FRAME
 INSTALLATION MANUAL FOR
 EUROCOPTER FRANCE 350 & 355 SERIES
 HELICOPTERS**

PREPARED BY: G. Wood

OF PAGES: 17

CHECKED BY: N. Tyler
3-21-03

OF DRAWINGS: 0

APPROVED BY: _____

REVISIONS

DATE	PAGES AFFECTED	REVISION LETTER		APPROVAL
6-24-04	ALL	NC	ORIGINAL ISSUE	
8-23-06	ALL			

SECTION 1
Fast Rope Assembly to TSOP
Installation

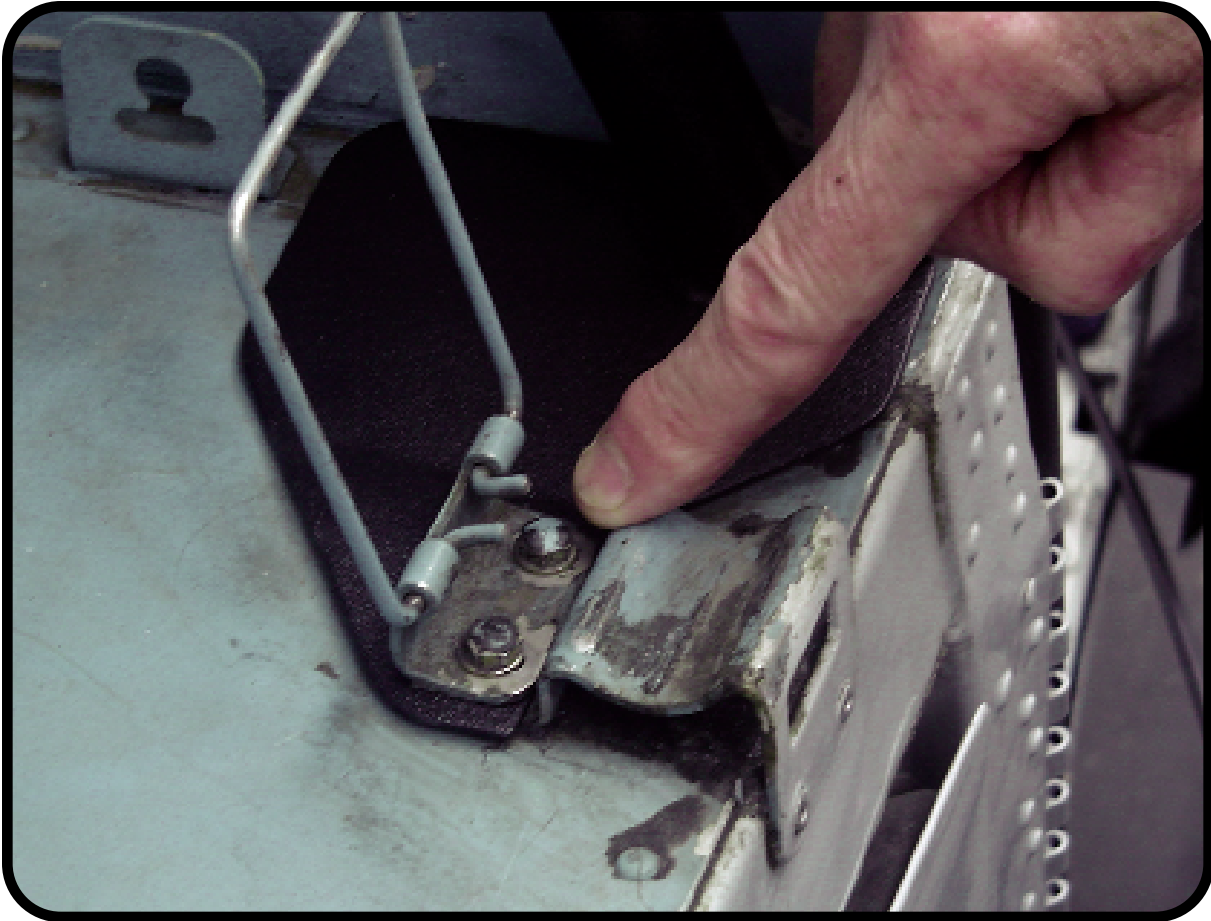


RIGHT SIDE SHOWN



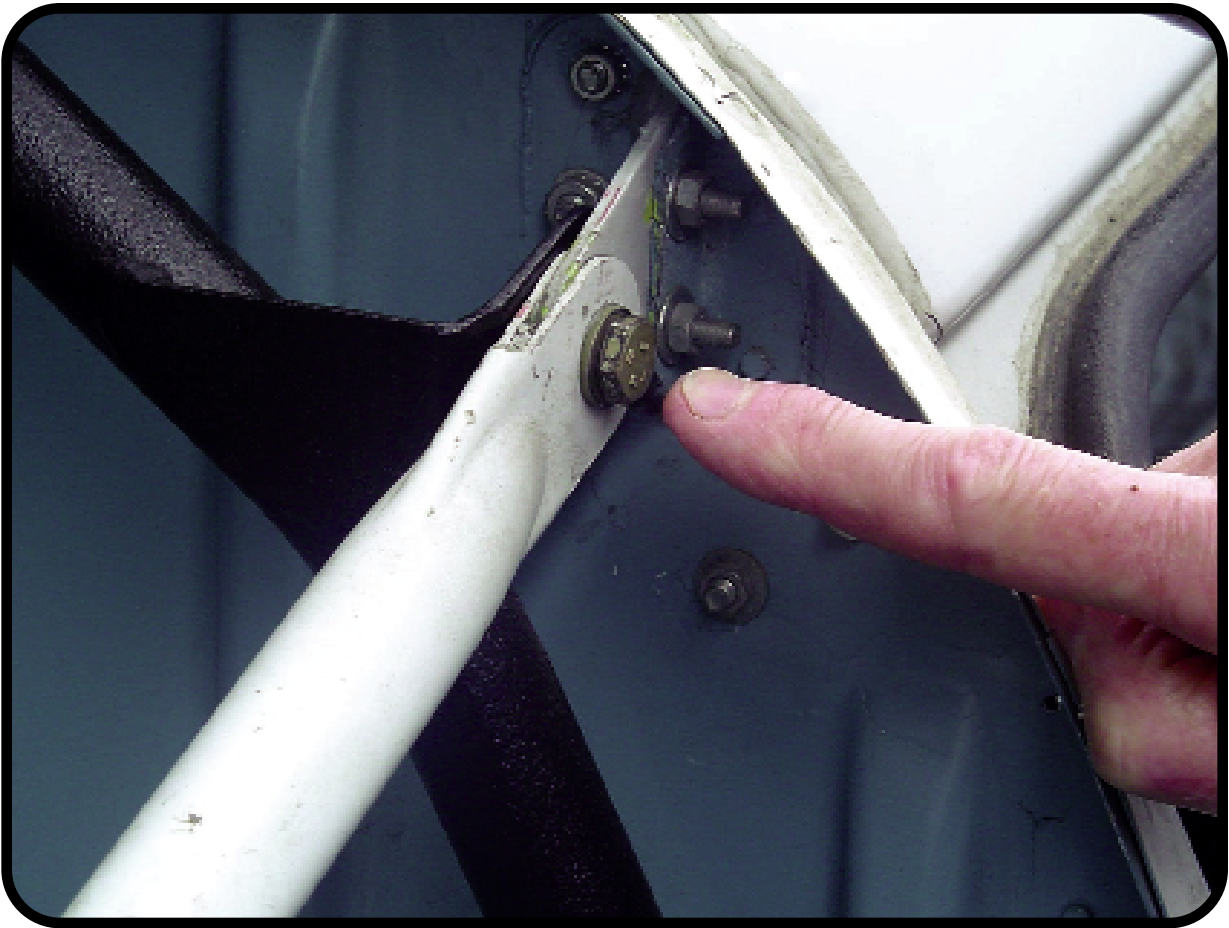
View of transmission compartment with TOP "Y" BRACE installed

RIGHT SIDE SHOWN



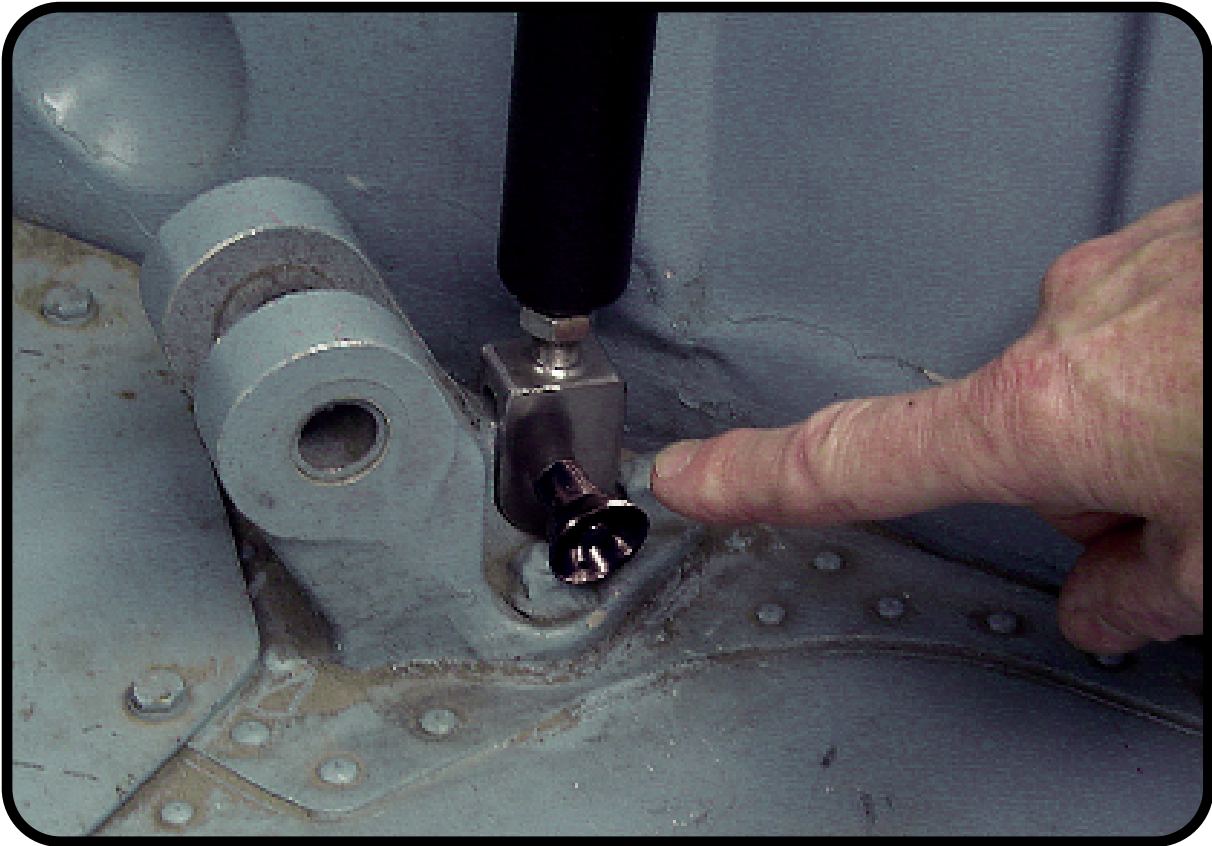
Remove two bolts from transmission cowl latch retainer.
Install top "Y" bracket & reinstall the two bolts loosely.

RIGHT SIDE SHOWN



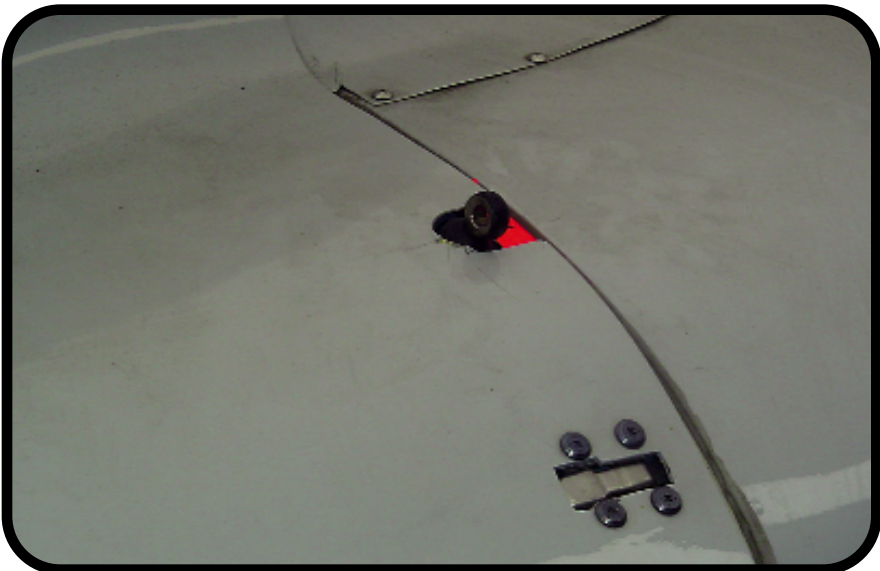
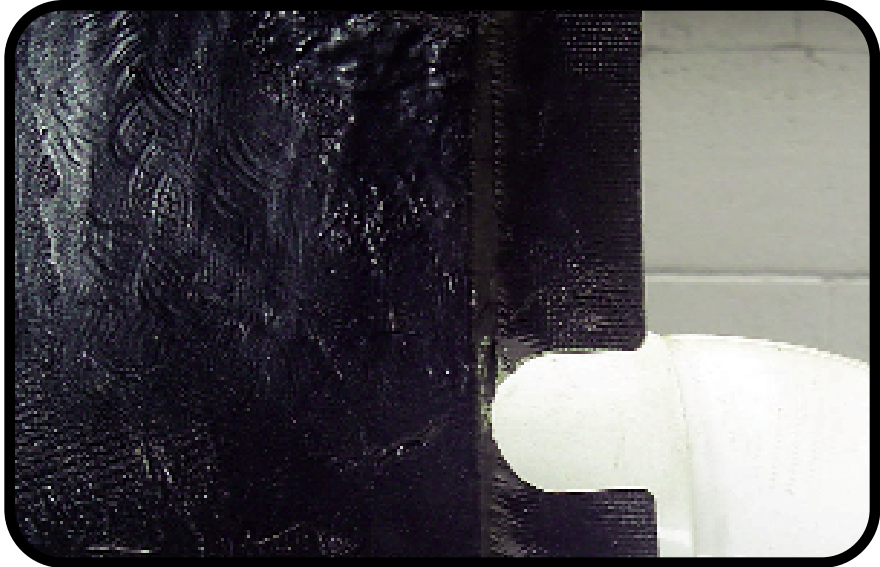
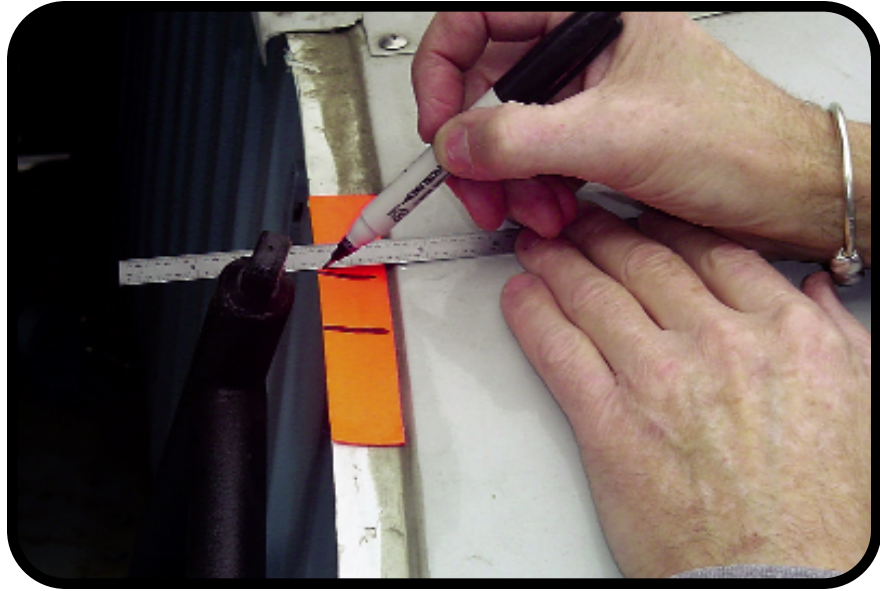
Remove nut from bulkhead bracket, back out bolt & install top "Y" bracket

RIGHT SIDE SHOWN

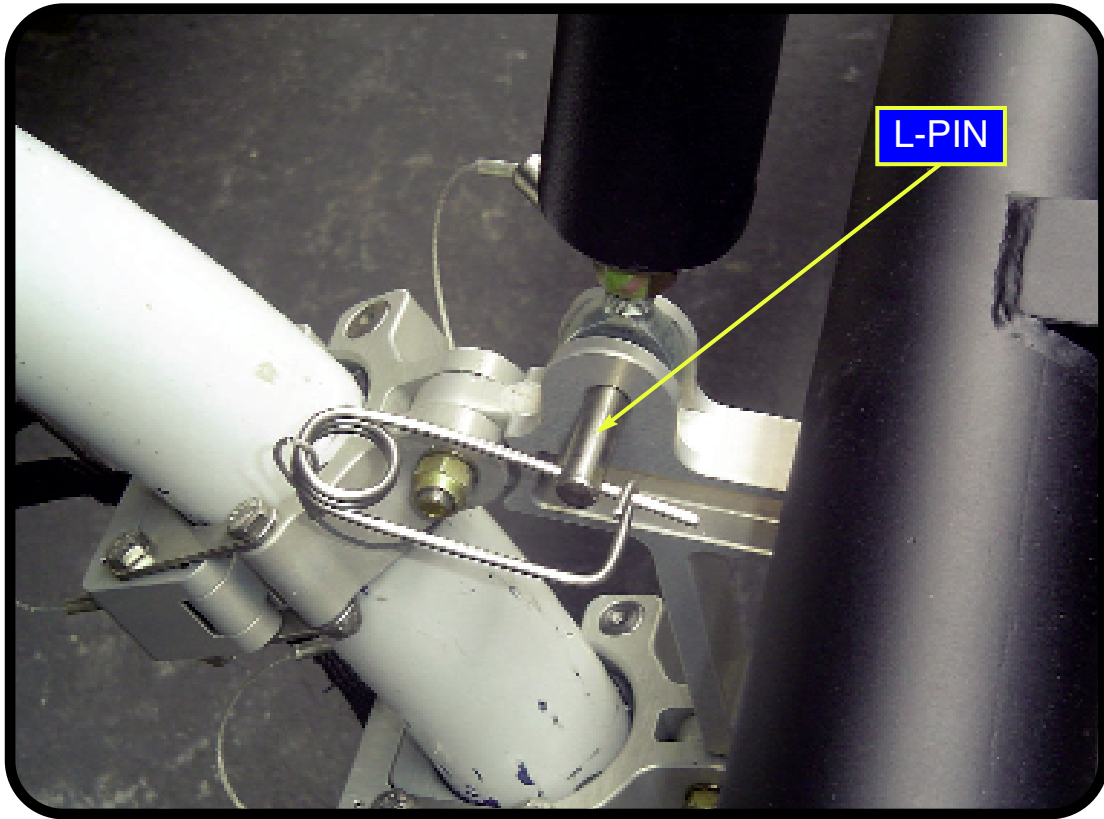


Install clevis on transmission mount with supplied bolt.
Now you may tighten all three points

RIGHT SIDE SHOWN

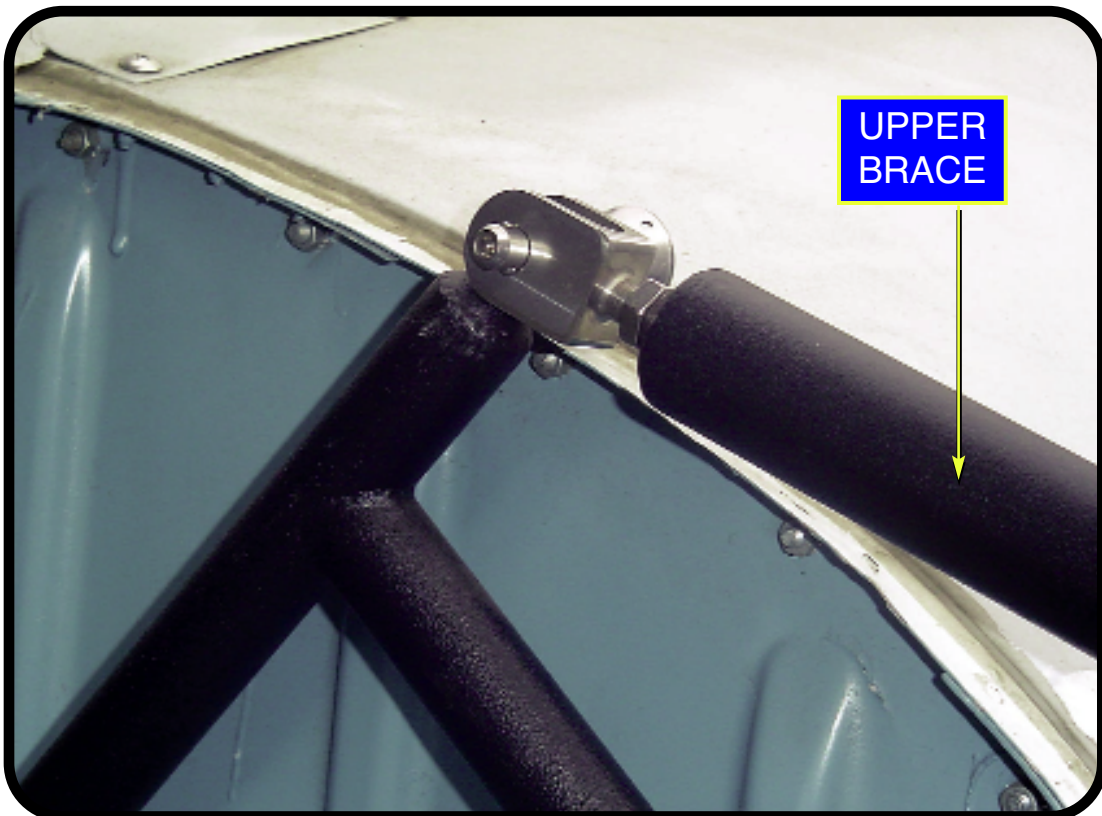


Mark as shown & notch engine cowl for top "Y" brace

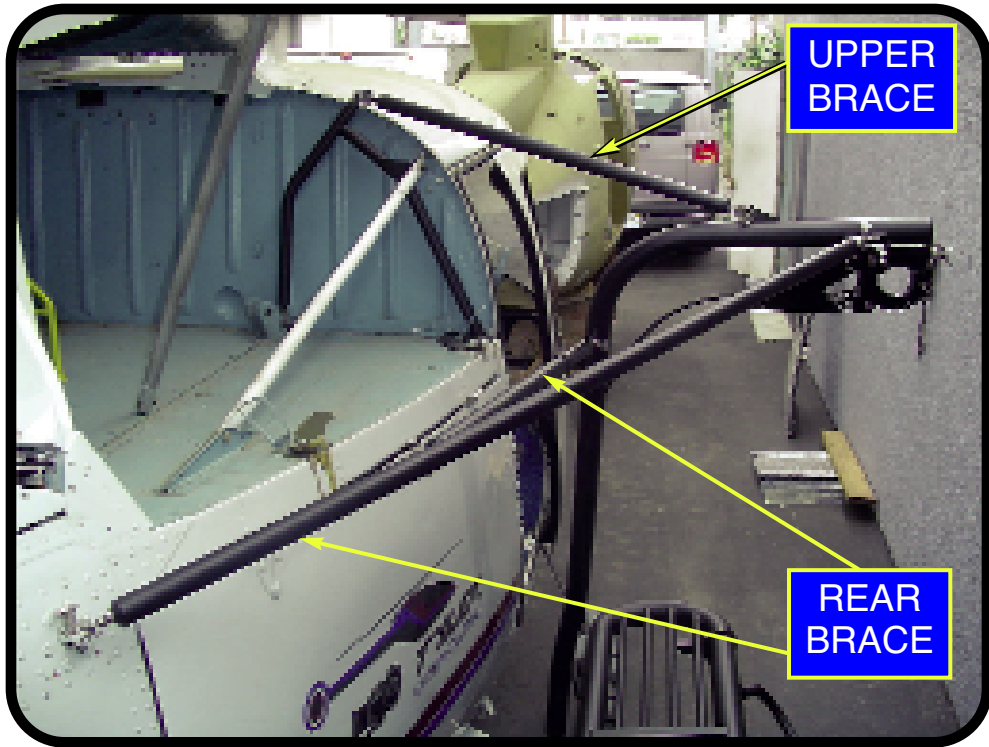


FAST ROPE ARM

Bottom of arm attaches to TSOP front skid gear clamp with L-pin

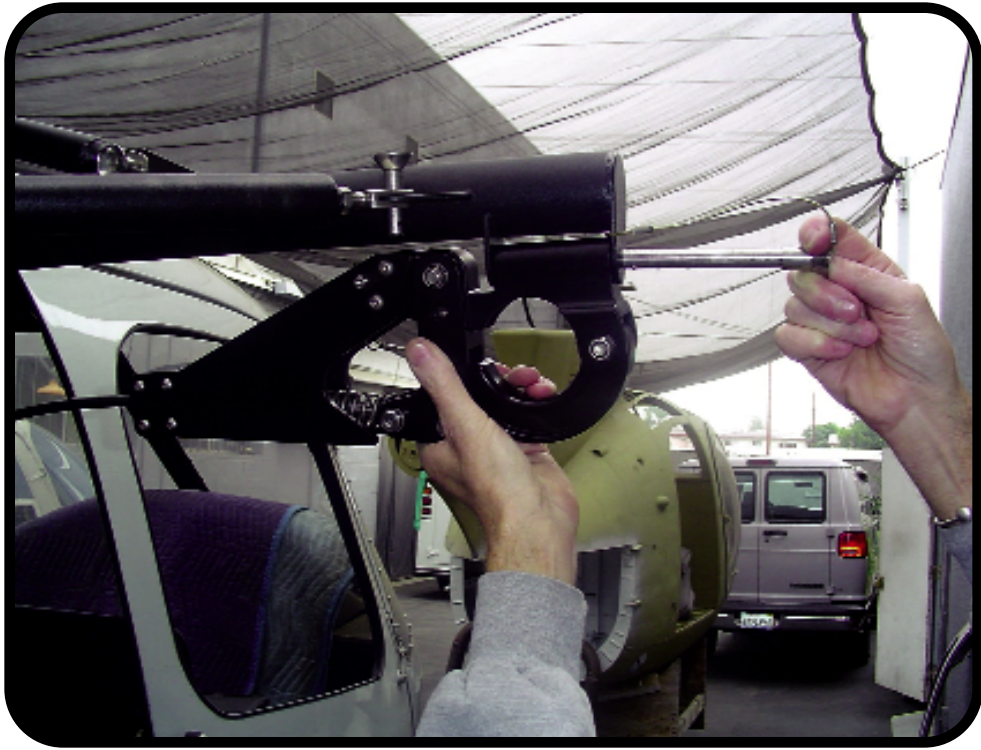


Install upper brace from top "Y" bracket to top tab on arm with pip pins.

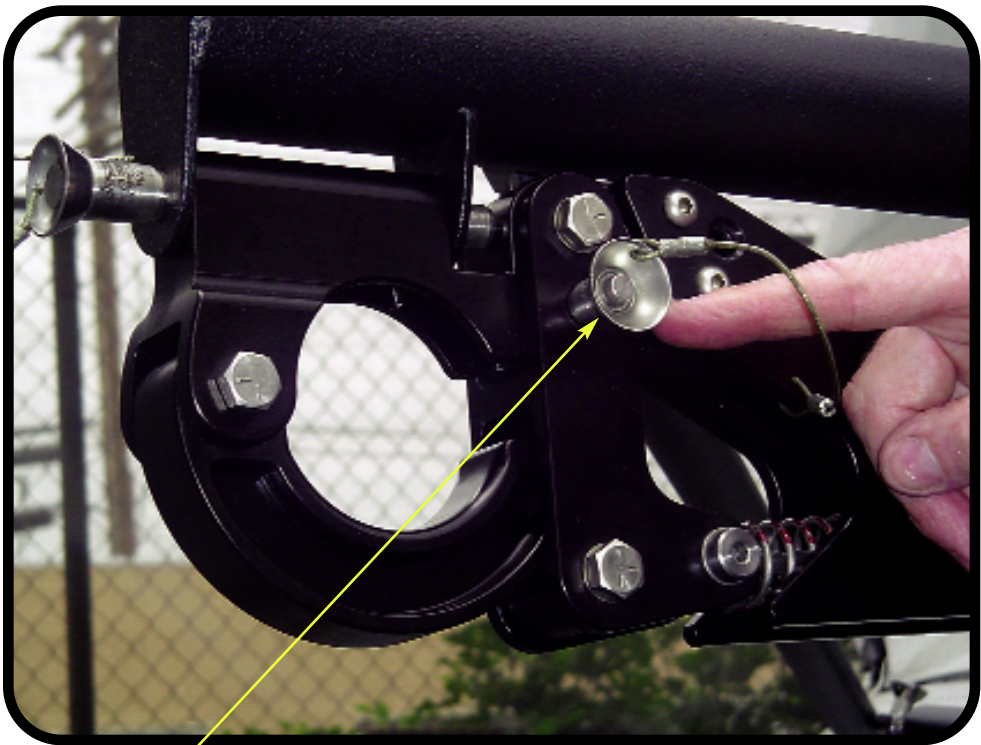


Install two rear braces as shown with pip pins

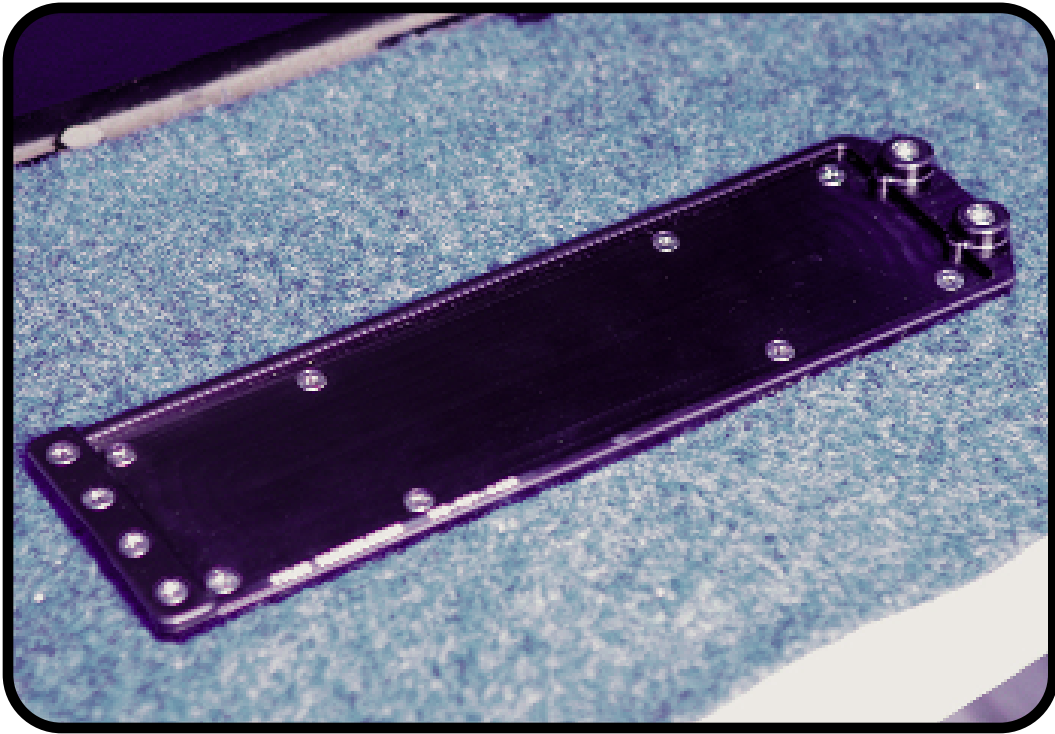
RIGHT SIDE SHOWN



Large pip pin holds hook assembly onto arm



Pip pin location to Lock Hook Release



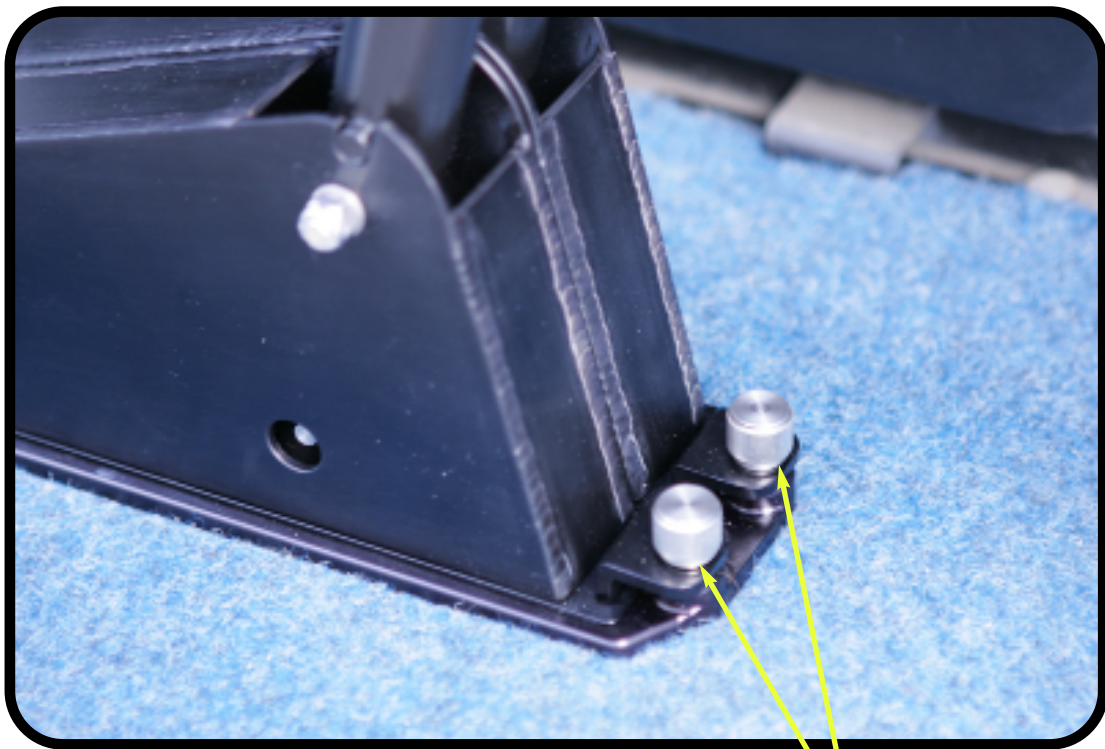
Mounting Plate for Release Handle



Mounting Plate Bottem View



Hook Release Handle Left & Right sides



Hook Release Handle Lock down knobs



Hook Release Handle Left side



Hook Release Handle Right side

SECTION 2 (Alternate Method)
Fast Rope Assembly to Skid Gear
Installation



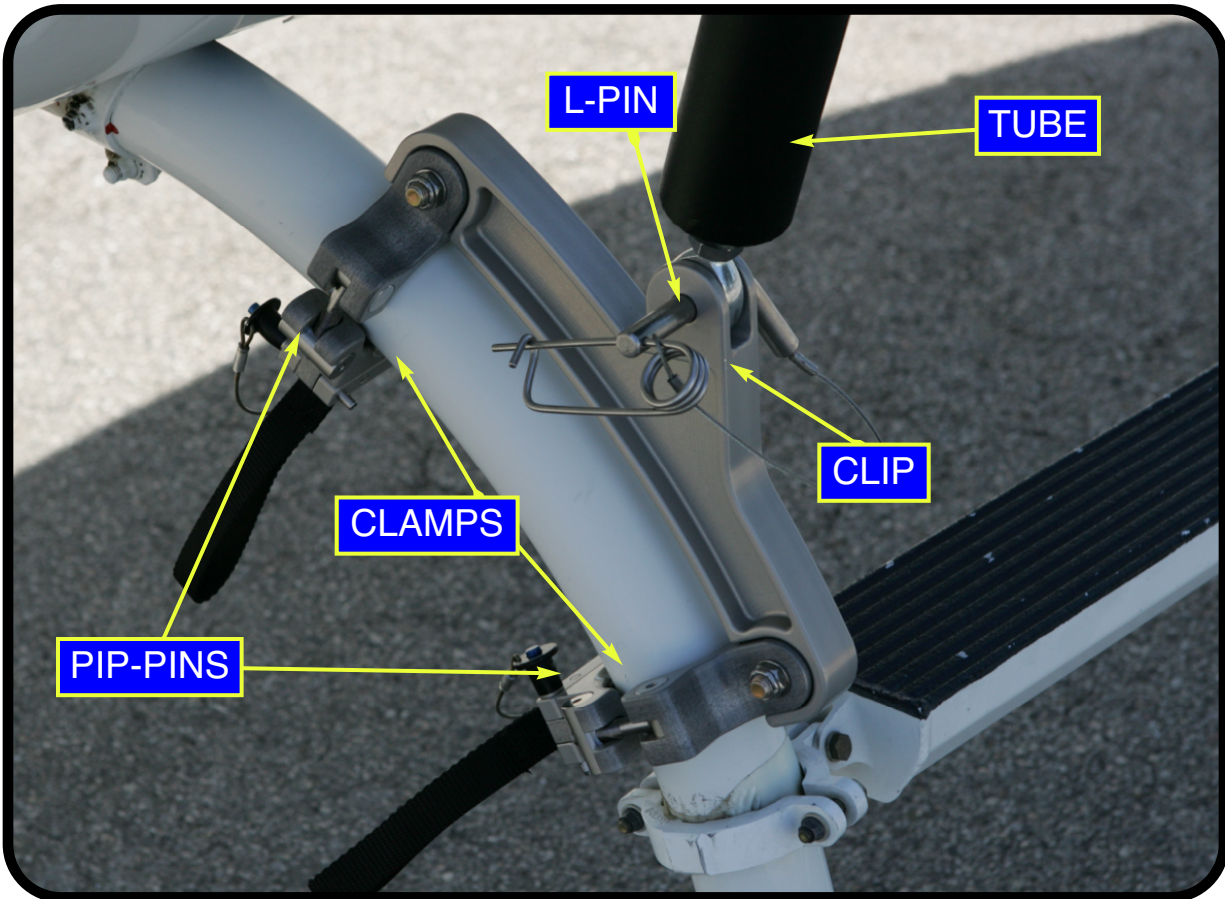
RIGHT SIDE SHOWN

Note:
A-Frame Brace installation the same as pages 4-8

FAST ROPE ARM

Attach Skid-Gear Clamp as shown, adjusting clamps as needed to get a snug-tight fit, and secure with Pip-pins.

Then attach the bottom of the Main Fast-Rope support tube to the Skid-Gear Clamp assembly using the L-pin, and secure with the Safety-clip.



RIGHT SIDE SHOWN

FAST ROPE TO SKID GEAR INSTALLED WITH HOOK & RELEASE

Refer to pages 13-16 for hook and release installation



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

Number SR01652LA

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 thereof as specified herein meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations.*

Original Product Type Certificate Number : *See attached FAA Approved Model List (AML)

Make : No. SR01652LA for list of approved rotorcraft models and applicable airworthiness regulations.

Model :

Description of Type Design Change: Installation of External Attach Frame in accordance with FAA Approved Tyler Camera Systems Master Drawing List No. LU-001, Revision A, dated July 2, 2004, and a copy of FAA Approved Rotorcraft Flight Manual Supplement No. LU-RFM-001, Revision N/C, dated October 28, 2004, or later FAA Approved Revisions.

Limitations and Conditions: Approval of this change in type design applies to the rotorcraft models listed on AML No. SR01652LA only. This approval should not be extended to rotorcraft of this model on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that rotorcraft. (Continued on Page 3).

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: August 15, 2003

Date reissued:

Date of issuance: November 3, 2004

Date amended: March 16, 2018



By direction of the Administrator

[Signature]
(Signature)

Manager, Technical and Administrative
Support Section
Los Angeles ACO Branch

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

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)*: _____

Supplemental Type Certificate
(Continuation Sheet)

Number SR01652LA

Limitations and Conditions (Continued)

The provisions of the Supplemental Type Certificate are applicable only to those rotorcraft which are listed on the attached FAA Approved Model List of Airbus Helicopter models.

This external attach frame is approved for a maximum payload weight of not more than 360 pounds per hook. The bi-pod frame may be left in place when the external frame is removed. The external attach frame may be installed on either or both sides of the rotorcraft.

The external attach frame may be used in conjunction with Tyler Cargo Rack Systems STC No. SR01449LA.

A copy of this Certificate and FAA Approved Model List (AML) No. SR01652LA, dated November 3, 2004, or later FAA Approved Revision, 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 -

FAA APPROVED MODEL LIST (AML) NO. SR01652LA
 Tyler Camera Systems
 INSTALLATION OF EXTERNAL ATTACH FRAME

ISSUE DATE : November 3, 3004

ITEM	AIRCRAFT MAKE	AIRCRAFT MODEL	ORIGINAL TYPE CERTIFICATE NUMBER	CERTIFICATION BASIS FOR ALTERATION	MASTER DWG. LIST		INSTALLATION INSTRUCTIONS		RFM SUPPLEMENT NUMBER/REV. NO. & DATE	AML AMENDMENT DATE
					REPORT NO.	REV. NO. & DATE	REPORT NO.	REV. NO. & DATE		
1	Airbus Helicopters	AS350-C AS350-D AS350-D1 AS350-B AS350-B1 AS350-B2 AS350-B3C AS350-BA	H9EU	FAR 27 and Amendments Listed on TCDS H9EU	LU-001	REV. A 6/24/04	INSTLU-001	REV. N/C 6/24/04	Rev. N/C 10/28/04	3/16/2018
2	Airbus Helicopters	AS355E AS355F AS365F1 AS355F2 AS355N	H11EU	Far 27 AND AMENDMENTS LISTED ON TCDS H11EU	LU-001	REV. A 6/24/04	INSTLU-001	REV. N/C 6/24/04	Rev. N/C 10/28/04	3/16/2018


 FAA APPROVED . DATE: 3/16/2018
 MANAGER, TECHNICAL & ADMINISTRATIVE SUPPORT SECTION
 LOS ANGELES ACO BRANCH



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

**FAA APPROVED
ROTORCRAFT FLIGHT MANUAL
SUPPLEMENT
FOR THE
EUROCOPTER MODEL
AS-350 B, BA, B1, B2, B3, C, D AND D1
AS-355 E, F, F1, F2, AND N
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 AS 350 355 Rotorcraft Flight Manual when the airplane has been modified by the installation of Tyler External Attach Frame in accordance with:

STC # SR 01652 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: *Frank J. Hoerman*
Acting
Manager, Flight Test Branch, ANM-160L
Federal Aviation Administration
Los Angeles Aircraft Certification Office
Transport Airplane Directorate

FAA DATE: *OCT. 28, 2004*



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

Supplement to the Eurocopter RFM for
Models AS-350 B, BA, B1, B2, B3, C, D, & D1
AS-355 E, F, F1, F2 & N
when modified with the Cargo Rack System

STC Number SR 01652 LA

LOG OF PAGES

Rev No.	Pg No	Date	Description of Change	FAA Approved
N/C	TL i 1-7	28 Oct 2004	Initial Issue	<p><i>Frank J. Hoerman</i></p> <hr/> <p><i>Acting</i> Mgr, Flight Test Branch ANM-160L, FAA, Los Angeles ACO, Transport Airplane Directorate</p> <p>DATE: <u> OCT. 28, 2004 </u></p>



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 Models AS-350 B, BA, B1, B2, B3, C, D, & D1
 AS-355 E, F, F1, F2 & N
 when modified with the Cargo Rack System

STC Number SR 01652 LA

TABLE OF CONTENTS

SECTION	PAGE
1. SECTION 1 – GENERAL.....	2
2. SECTION 2 – LIMITATIONS.....	5
2.1 AIRSPEED	5
2.2 ATTACH FRAME WEIGHT LIMIT	5
3. SECTION 3 – EMERGENCY PROCEDURES.....	6
4. SECTION 4 – NORMAL PROCEDURES.....	6
5. SECTION 5 - PERFORMANCE.....	6
5.1 HOVER PERFORMANCE	6
5.2 CLIMB PERFORMANCE	6
6. SECTION 6 – WEIGHT AND BALANCE	7

TABLE OF FIGURES

FIGURE.....	PAGE
FIGURE 1 RIGHT FRONT VIEW OF INSTALLED RACKS WITH EXTERNAL ATTACH FRAME	2
FIGURE 2 LEFT REAR VIEW OF THE ATTACH POINTS.....	3
FIGURE 3 LEFT REAR VIEW OF THE ENGINE DECK ATTACH POINTS.....	4
FIGURE 4 HOOK RELEASE HANDLES	5



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Van Nuys, CA. 91401
Document Number LU-RFM-001

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Models AS-350 B, BA, B1, B2, B3, C, D, & D1
AS-355 E, F, F1, F2 & N
when modified with the Cargo Rack System

STC Number SR 01652 LA

1. SECTION 1 – GENERAL

The Tyler External Attach Frame consists of the 4130 steel tubular frame members and a releasable hook.

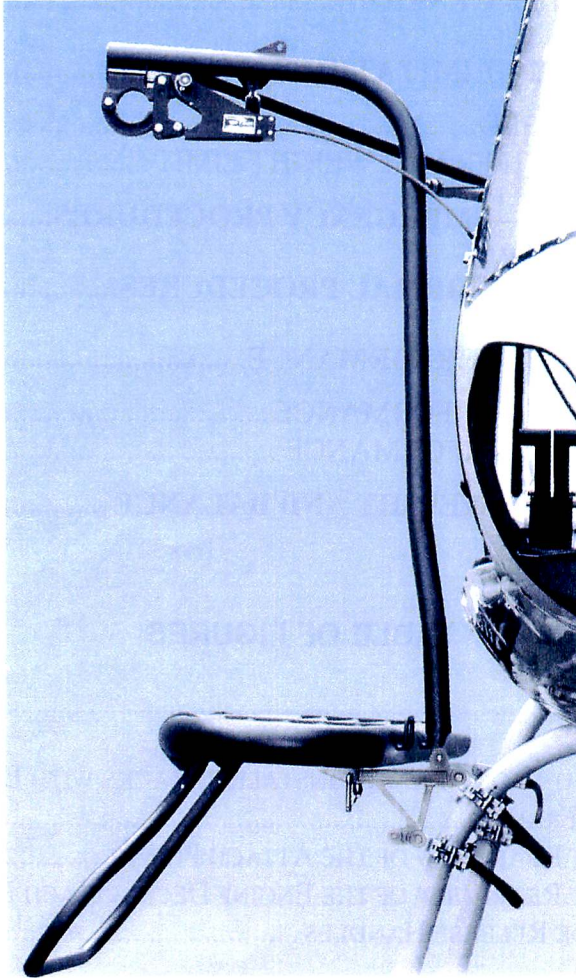


Figure 1 Right Front View of Installed Racks with External Attach Frame



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Document Number LU-RFM-001

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AS-355 E, F, F1, F2 & N
when modified with the Cargo Rack System

STC Number SR 01652 LA

The mount is attached to the landing gear by two clamps, to the aft fuselage attach point, and a Bi-Pod frame mounted to the transmission deck. (The Bi-Pod frame may be left in place when the external frame is removed.)

The external attach frame may be installed on either or both sides of the aircraft.

The external attach frame may be used in conjunction with the Tyler A-Star TSOP Rack System, STC# SR01449LA.



Figure 2 Left Rear View of the Attach Points



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Models AS-350 B, BA, B1, B2, B3, C, D, & D1
AS-355 E, F, F1, F2 & N
when modified with the Cargo Rack System

STC Number SR 01652 LA



Figure 3 Left Rear View of the Engine Deck Attach Points

CAUTION

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



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Supplement to the Eurocopter RFM for
Models AS-350 B, BA, B1, B2, B3, C, D, & D1
AS-355 E, F, F1, F2 & N
when modified with the Cargo Rack System

STC Number SR 01652 LA

3. SECTION 3 – EMERGENCY PROCEDURES

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

WARNING

Hook loads in excess of approximately 80 pounds may not allow the hook to release.

4. SECTION 4 – NORMAL PROCEDURES

No Change

5. SECTION 5 - PERFORMANCE

5.1 HOVER PERFORMANCE

No Change

5.2 CLIMB PERFORMANCE

No Change



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Supplement to the Eurocopter RFM for
Models AS-350 B, BA, B1, B2, B3, C, D, & D1
AS-355 E, F, F1, F2 & N
when modified with the Cargo Rack System

STC Number SR 01652 LA

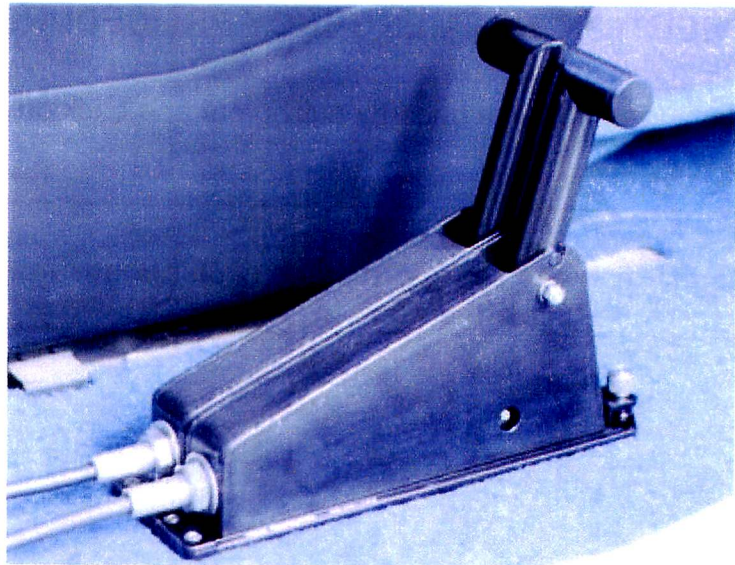


Figure 4 Hook Release Handles

A hook release handle is installed on the floor, right of the pilot's seat.

2. SECTION 2 – LIMITATIONS

2.1 AIRSPEED

Reduce to hovering flight.

2.2 ATTACH FRAME WEIGHT LIMIT

Maximum Weight: 360 pounds



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Document Number LU-RFM-001

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AS-355 E, F, F1, F2 & N
when modified with the Cargo Rack System

STC Number SR 01652 LA

6. SECTION 6 – WEIGHT AND BALANCE

The weight and balance data must be considered for each flight.

Distribution of the load on the external attach frames 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.

The longitudinal CG of the hook is 108.78 inches.

The lateral CG of the hook is:

Left -60.79 inches

Right +60.79 inches

STAND ALONE EXTERNAL FRAME 350

WEIGHT & BALANCE DATA AND EQUIPMENT LIST STAND ALONE EXTERNAL FRAME 350						
Weight x Arm = Moment						
6/23/98						
SAMPLE SHEET		AIRCRAFT MODEL	REGISTRATION	AIRCRAFT S/N	PILOT	
		AS 350 B/A	N31621	2130	N/A	
		LONGITUDINAL			LATERAL	
ITEM:	WEIGHT	ARM	MOMENT	ARM	MOMENT	
AIRCRAFT EMPTY WEIGHT & C.G.	2885	139.07	401216.95	0.489	1410.765	
STARBOARD BAGGAGE (R) MAX 220 LBS	0	125.98	0	21.89	0	
PORT BAGGAGE (L) MAX 264 LBS	0	125.98	0	-21.89	0	
REAR BAGGAGE MAX 170 LBS	0	181.1	0	0	0	
R/H FAST ROPE ASSEMBLY	28	91	2548	61	1708	
L/H FAST ROPE ASSEMBLY	28	91	2548	-61	-1708	
R/H FAST ROPE (ADD ROPE WT)	0	91	0	-61	0	
L/H FAST ROPE (ADD ROPE WT)	0	91	0	-61	0	
SUBTOTAL:	2941	138.1546923	406312.95	0.479688881	1410.765	
LAP CONTROLLER	10	61.02	610.2	0	0	
PILOT (A+) FORWARD RIGHT	200	61.02	12204	14.17	2834	
CO-PILOT (A-) FORWARD LEFT	200	61.02	12204	-14.17	-2834	
PAX (B+) INSIDE RIGHT REAR	0	99.99	0	8.15	0	
PAX (B-) INSIDE LEFT REAR	0	99.99	0	-8.15	0	
PAX (C+) OUTSIDE RIGHT REAR	0	99.99	0	24.45	0	
PAX (C-) OUTSIDE LEFT REAR	0	99.99	0	-24.45	0	
FUEL(143 GAL. MAX.) X 6.8 GAL.	20	136	136.81	18606.16	0	
EQUIPMENT SUBTOTAL:	546		43624.36		0	
TOTAL AIRCRAFT WEIGHT:	3487	129.0327818	449937.31	0.404578434	1410.765	
AIRCRAFT MAX GROSS WEIGHT:	4630			LATERAL C.G. LIMITS:		
NEW USEFUL LOAD:	1143					
NEW CENTER OF GRAVITY (LONGITUDINAL)	129.0327818			L/H LIMIT:6.30 IN. (0.16M) MINUS		
NEW CENTER OF GRAVITY (LATERAL)	0.404578434			R/H LIMIT: 3.54 IN. (0.09) PLUS		
		LONGITUDINAL C.G. LIMITS:				
		FORWARD LIMIT:				
		124.8 IN. (3.17M) @ 4000 LBS. (2000 KG)				
		126.5 IN. (3.185M) @ 5000 LBS. (2100 KG)				
		REARWARD LIMIT:				
		137.9 IN. (3.445M) @ 5000LBS. (2100KG)				
		139.3 IN. (3.49M) @ 4000 LBS. (1750 KG)				

STAND ALONE EXTERNAL FRAME 355

WEIGHT & BALANCE DATA AND EQUIPMENT LIST STAND ALONE EXTERNAL FRAME 355						
Weight x Arm = Moment						
6/23/98		AIRCRAFT MODEL	REGISTRATION	AIRCRAFT S/N	PILOT	
SAMPLE SHEET		AS 355 F1	N5802W	5221	N/A	
LONGITUDINAL				LATERAL		
ITEM:	WEIGHT	ARM	MOMENT	ARM	MOMENT	
AIRCRAFT EMPTY WEIGHT & C.G.	3195.89	138.88	443845.2032	0.489	1562.7902	
STARBOARD BAGGAGE (R) MAX 220 LBS	0	125.98	0	21.89	0	
PORT BAGGAGE (L) MAX 264 LBS	0	125.98	0	-21.89	0	
REAR BAGGAGE MAX 170 LBS	0	181.1	0	0	0	
R/H FAST ROPE ASSEMBLY	28	91	2548	61	1708	
L/H FAST ROPE ASSEMBLY	28	91	2548	-61	-1708	
R/H FAST ROPE (ADD ROPE WT)	0	91	0	61	0	
L/H FAST ROPE (ADD ROPE WT)	0	91	0	-61	0	
SUBTOTAL:		3251.89	138.0554703	448941.2032	0.480579051	1562.7902
LAP CONTROLLER	0	61.02	0	-14.17	0	
PILOT (A+) FORWARD RIGHT	180	61.02	10983.6	14.17	2550.6	
CO-PILOT (A-) FORWARD LEFT	180	61.02	10983.6	-14.17	-2550.6	
PAX (B+) INSIDE RIGHT REAR	0	99.99	0	8.15	0	
PAX (B-) INSIDE LEFT REAR	0	99.99	0	-8.15	0	
PAX (C+) OUTSIDE RIGHT REAR	0	99.99	0	24.45	0	
PAX (C-) OUTSIDE LEFT REAR	0	99.99	0	-24.45	0	
FUEL(194.6 GAL. MAX.) X 6.8 (FOR. 1) GAL.	80	544	127.55	69387.2	0	
FUEL(194.6 GAL. MAX.) X 6.8 (aft 2) GAL.	80	544	151.55	82443.2		
EQUIPMENT SUBTOTAL:		1448		173797.6	0	
TOTAL AIRCRAFT WEIGHT:		4699.89	132.5007188	622738.8032	0.332516338	1562.7902
AIRCRAFT MAX GROSS WEIGHT:		5291	LATERAL C.G. LIMITS:			
NEW USEFUL LOAD:		591.11				
NEW CENTER OF GRAVITY (LONGITUDINAL)			132.5007188	L/H LIMIT:6.30 IN. (0.16M) MINUS		
NEW CENTER OF GRAVITY (LATERAL)			0.332516338	R/H LIMIT: 3.54 IN. (0.09) PLUS		
LONGITUDINAL C.G. LIMITS:						
FORWARD LIMIT:						
124.8 IN. (3.17M) @ 4000 LBS. (2000 KG)						
126.5 IN. (3.185M) @ 5000 LBS. (2100 KG)						
REARWARD LIMIT:						
137.9 IN. (3.445M) @ 5000LBS. (2100KG)						
139.3 IN. (3.49M) @ 4000 LBS. (1750 KG)						