NOSE MOUNT

JET RANGER / LONG RANGER

INSTALLATION MANUAL

Tyler - Nose Mount
For ***Bell*** 206 & 206L Series Helicopters

FAA STC # SH2256NM

PLEASE RETURN THIS MANUAL WITH EQUIPMENT

This manual is available for download from our web site.

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

Refer to the following Manual for further instructions on the Nose Mount II:
(provided with equipment)

Tyler - Nose Mount II
Setup Manual

MODEL: Bell 206 REPORT #: TCS-107

JOB #: DATE: 8-1-85

NOSE MOUNT (MODEL 206)

INSTALLATION MANUAL FOR

JET RANGER / LONG RANGER HELICOPTERS

PREPARED BY: N. Tyler # OF PAGES: 6
(A plus 1 thru 5)

CHECKED BY: N. Tyler # OF DRAWINGS: 1

APPROVED BY: T.I. Cox

T.I. Cox

REVISIONS

DATE	PAGES AFFECTED	REVISION LETTER		APPROVAL
5-1-83	ALL	NC	Preliminary copy	N.T.
6-27-83	ALL	A	Initial release	C.G.
11-8-84	PG3	B	Rev. para 9: "Plug video camera power cable into recept..."	C.G.
8-1-85	ALL	C	Added cover page, revised report to cover Bell 206 L-1 and L-3 models. Rev. installation data to cover wider range of cameras	T.I.C.
10-5-95	ALL	D	Rev. pages (all) to reflect models added. Rev. camera pages weight to cover wider range of cameras.	

APPLICATION & LIMITATIONS

This camera installation is applicable to ***Bell*** Jet Ranger models 206, 206A, 206A-1, 206B, 206B-1, 206B-3 and Long Ranger 206L, 206L-1, 206L-3, 206L-4 series helicopters. In addition, these helicopters must be equipped with high gear ***Bell*** kit 206-706-031-1 or 206-706-010-21 or 206-706-210-103 or 206-706-064-101 or 206-706-064-003.

Note: When utilizing the helicopter to power any of the camera mounts and/or camera and/or accessories (instead of a battery pack), the maximum current draw is not to excede 28 volts / 400 watts (approx. 15 amps).

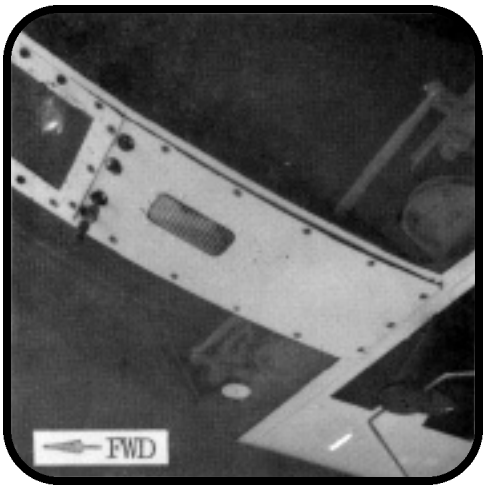
Two types of connectors may be found inside the helicopter for Auxiliary Power:

(a) “BANANA” 2 PIN
typically in AS-350/355

(b) ***Amphenol*** 2 PIN
typically in 206/206L

1) Remove sixteen (16) existing 10-32 bolts from underside of helicopter fuselage, between stations 17.5 and 38.0.

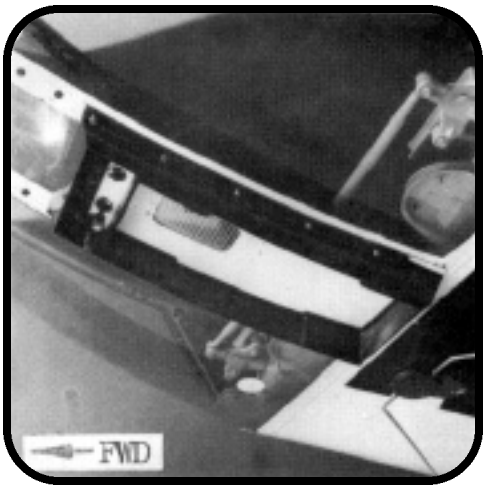
Note: Save bolts, to be reinstalled after Nose Mount is removed from helicopter.



2) Install Tyler Nose Mount “Attach Frame” (narrow end forward) with sixteen (16) 10-32 bolts and washers provided.

Using a 5/32” Allen Driver, apply approx. 2-ft-lbs. torque.

Note: Use 16 bolts MS 16996-15 cut down to one inch long to form “Tyler Attach Frame Bolt” (See drawing #TYL-206-001 Sheet 1 Dash no. 45).



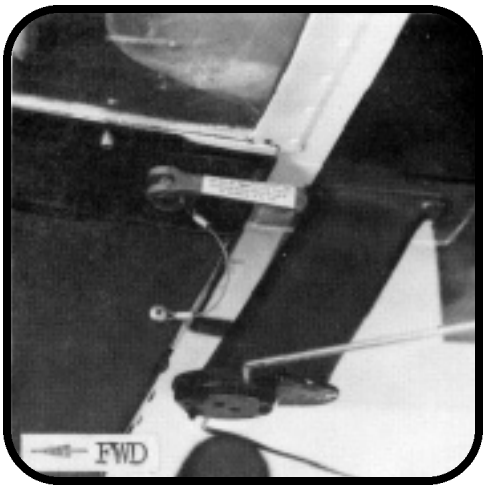
3) Insert Nose Mount into Attach Frame (with air vents forward). Insert all four Expando Pins into holes on sides of Attach Frame.

Note: Do not lock Expando Pins until all four are in place.

Note: A new style of Expando Pin is being installed on all new Nose Mounts. Instead of a lever, a knob is used to tighten (or loosen) the pins. Clockwise to tighten, and counterclockwise to loosen. Tighten knobs firmly, but do not overtighten.

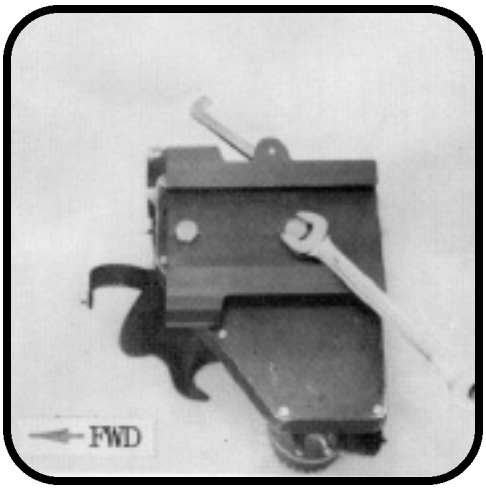
4) Swing all cam handles on the Expando Pins towards rear of helicopter, until the little green safety lock lever (on the Expando Pins) locks into position.

Note: Expando Pins should be snug in holes, just prior to locking. If Expando Pin feels loose in hole, make the necessary adjustments (see instructions on page 4).



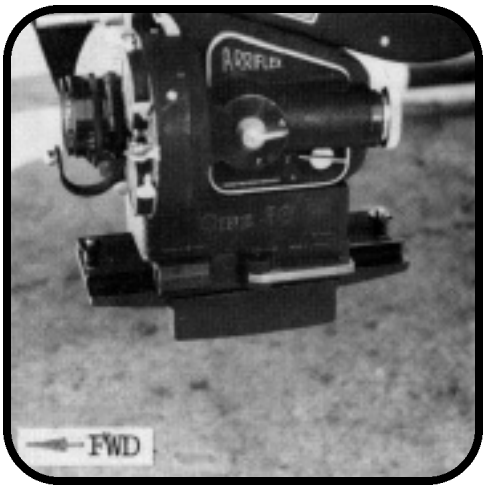
5) Fasten the Quick Release Plate to the camera (at the fore-to-aft balance point) with the 3/8-16 hex head “nylock” bolt provided.

Using a 9/16” wrench, apply approx. 9 ft-lbs. torque.



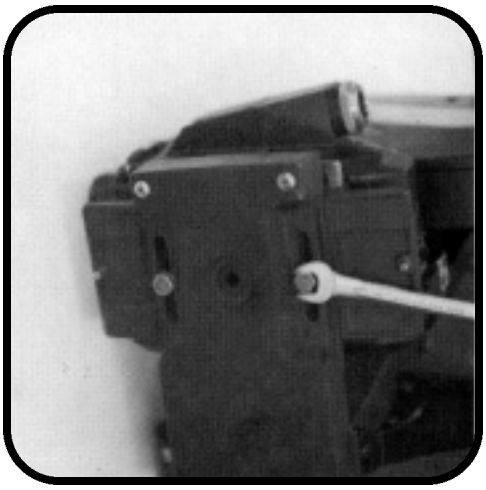
6) With red cam-arm open (on Quick Release Plate) slip camera onto the dove-tail plate on the Nose Mount. Position the camera so the fore-to-aft balance point is near the center of the dove-tail plate. Secure the camera by locking (closing) the red cam-arm and, inserting two Pi-pins into the dove-tail plate (one at either end).

Note: All cameras are authorized that will accept the ***Tyler*** Quick Release Plate (part # TYL-206-007). Weight of camera (including film magazine) film, and/or video tape, etc. not to exceed 39 lbs. Maximum frontal area of these parts not to exceed 9 square feet.



7) Loosen two 5/16 hex head bolts on underside of tilt base and slide camera inboard toward mount as far as camera will allow and lock into position.

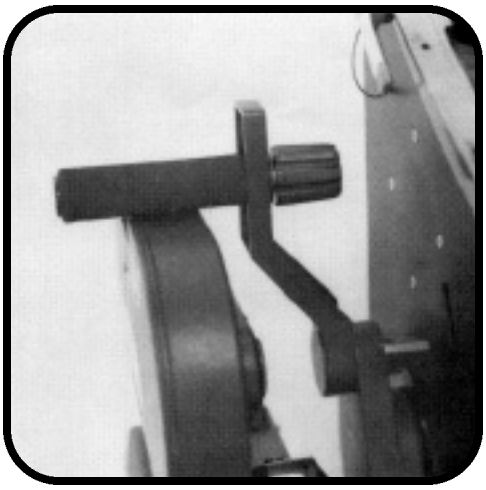
Using a 1/2” wrench, apply approx. 7 ft-lbs. torque.



8) Adjust camera Lock-down Bar against the film camera magazine (or video camera handle).

First, center the upright arm over the magazine (or handle) and lock it in place by tightening the red lever.

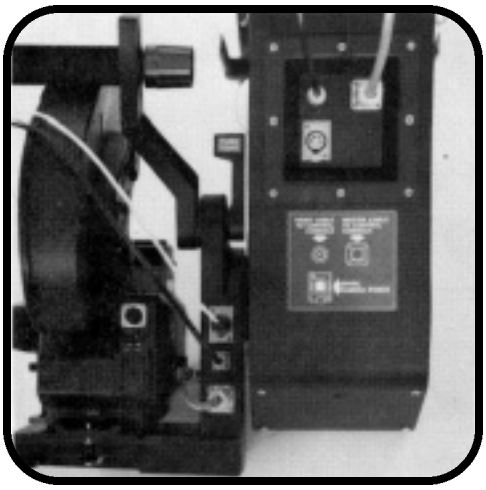
Second, (with the red knob loose) push and hold the Lock-down Bar against the magazine (or handle) and tighten the red knob.



9) Plug in cables.

Nose Mount - rear panel:
Securely fasten the Control and Coax cables (twist shell on connector clockwise to lock).

Nose Mount - tilt arm:
Securely fasten the Camera, Coax and any other cables necessary (twist shell on connector clockwise to lock).



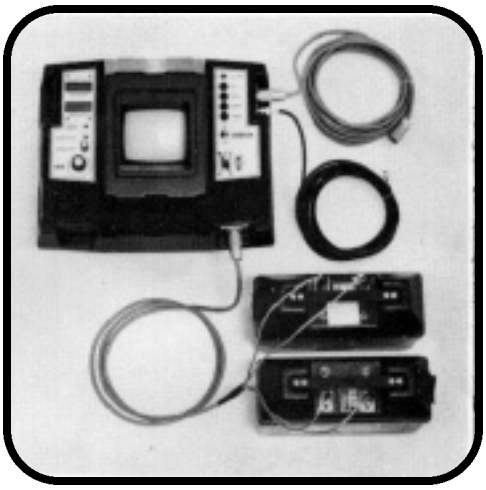
10) Route the cables from the Nose Mount into cockpit and connect to Nose Mount Control Console.

Note: Cables are usually routed through a hole in the left chin bubble. Otherwise, route through left side window.

• Remove left side cyclic and collective (helicopter control handles) and stow.

• Tape down excess cable length (in cockpit) to prevent interference with helicopter controls.

11) Connect the Nose Mount Power Cable from the Control Console to 24 to 28 VDC power source...



Mode 1: Tyler (or equivalent) 24V/12AH Battery Pack.

Mode 2: Helicopter auxiliary 28VDC power connector, using Tyler "Ship" Power Cable (if provided).

Mode 3: Helicopter auxiliary power connector and a Battery Pack, using Tyler "Ship & Battery" Power Cable (if provided).

- NOSE MOUNT ASSEMBLY COMPLETE -

Disassembly
Reverse above procedure for disassembly.

Note: The Expando Pins green safety lock must be held open in order to release the cam handle.

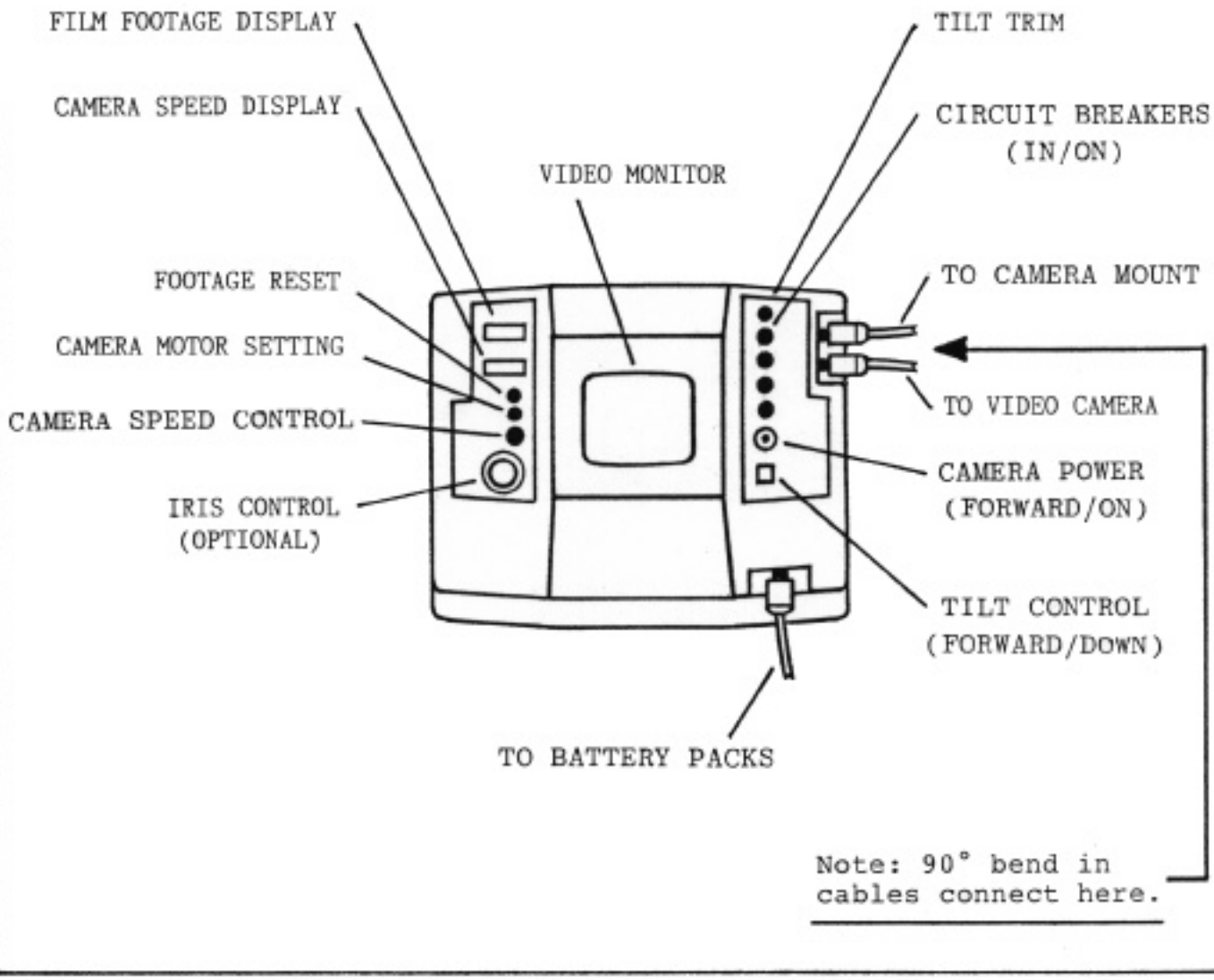
Expando Pin adjustment (to be accomplished by helicopter mechanic):
• Loosen the set screw on the side of the cam handle using a 1/8” allen wrench.
• Tighten, or loosen the inner (threaded) shaft, using the 1/8” allen wrench, until desired tension is applied.
• Tighten side set screw.

Important: The inner threaded shaft is a reverse thread (clockwise will loosen up adjustment).

Note: It is often necessary to insert the forward Expando-pins while they are in the locked position, in order to clear the lower hanging chin bubbles. Therefore, it is necessary to first loosen the Expando-pins (as described above) and then tighten them back up after insertion.

(Drawing No 1)

REMOTE CONTROL SWITCH BOX



United States Of America
Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number SH2256NM

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.*
*Certification basis is set forth in Type Certificate Data Sheet H2SW.

Original Product Type Certificate Number: H2SW

Make: Bell Helicopter Company

Model: 206, 206A, 206B, 206B III, 206L-1, 206L-3, 206A-1, 206B-1, 206L, 206L-4

Description of Type Design Change: Installation of external, nose mounted camera and mount system in accordance with FAA Approved Tyler Camera Systems Master Drawing List No. TYL206-1000, JR nose camera mount, Revision K, dated November 11, 1999, for models 206, 206A, 206B, 206B III, 206L-1, 206L-3, 206A-1, 206B-1, 206L and 206L-4, or later FAA Approved revision.

Limitations and Conditions: Approval of this change in type design applies to the aircraft models listed above only. This approval should not be extended to aircraft 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 aircraft. (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: January 10, 1983

Date of issuance: March 9, 1984

Date reissued:

Date amended: Jan. 31, 1986; Nov. 25, 1996; May 22, 2000

By direction of the Administrator

(Signature)
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.

This certificate may be transferred in accordance with FAR 21.47.

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)*:_____

United States Of America
Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

(Continuation Sheet)

Number SH2256NM

Limitations and Conditions: (Continued)

The FAA Approved Rotorcraft Flight Manual Supplement No. TCS-100, Revision "C", dated May 16, 2000, or later FAA Approved revisions, for the camera and mount system is required.

A copy of the 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 -

TYLER CAMERA SYSTEMS
14218 AETNA ST.
VAN NUYS, CA. 91401

RFM SUPPLEMENT TO BELL 206&206L SERIES HELICOPTERS, 206,206A,206A-1,206B,206B-1,206B-3, 206L,206L-1,206L-3,206L-4 MODELS

SUPPLEMENT NO TCS-100 REV. C
STC NO. SH2256NM

FAA APPROVED
ROTOCRAFT FLIGHT MANUAL SUPPLEMENT
FOR THE INSTALLATION OF THE
TYLER NOSE MOUNT
TO THE
BELL JET RANGER SERIES HELICOPTERS
206, 206A, 206A-1, 206B, 206B-1, 206B-3
AND
206L, 206L-1, 206L-3, 206L-4 MODELS

This supplement must be attached to the FAA approved Bell 206 & 206L Rotocraft Flight Manual when the rotorcraft is modified by the instillation of the Tyler Nose Mount And Tyler RS Nose Mount in accordance with

STC# SH 2256 NM

The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures, and performance information not contained in this supplement, consult the appropriate basic Airplane Flight Manual.

APPROVED BY:

Manager, Flight T
Federal Aviation Administration
Los Angeles Aircraft Certification Office
Transport Airplane Directorate

DATE APPROVED: May 16, 2000

TYLER NOSE MOUNT
CAMERA SYSTEM
FOR THE
BELL 206 AND 206L SERIES HELICOPTERS

LOG OF REVISIONS PAGE

REV	PAGE NO.	PAGE DATE	DESCRIPTION	FAA APPROVED
ORIG.	ALL	3/7/84	ORIGINAL ISSUE	3/7/1984
A	1-4	1/31/86	REVISED PAGES TO REFLECT MODELS ADDED ADDED TITLE PAGE AND REVISION PAGE	1/31/1986
B	ALL	1/21/86	REVISED PAGES TO REFLECT MODELS ADDED. REVISED CAMERA WEIGHT TO COVER A WIDER RANGE OF CAMERAS.	1/21/86
C	ALL	5-16-00	ADDED THE RS NOSE MOUNT THE INSTALLATION MANUAL	5-16-00

Ronald Armstrong

MGR., FLIGHT TEST BR., ANM-160L
FAA, LOS ANGELES ACO
TRANSPORT AIRPLANE DIRECTORATE

FAA APPROVAL DATE: 5-16-00

TYLER CAMERA SYSTEMS
14218 AETNA ST.
VAN NUYS, CA. 91401

RFM SUPPLEMENT TO BELL 206&206L SERIES
HELICOPTERS, 206,206A,206A-1,206B,206B-1,206B-3,
206L,206L-1,206L-3,206L-4 MODELS

SUPPLEMENT NO TCS-100 REV. C
STC NO. SH2256NM

ROTOCRAFT FLIGHT MANUAL SUPPLEMENT

The information in this document is FAA approved material which, together with the basic flight manual is applicable and must be carried in the basic manual when the helicopter is modified by the installation of the **TYLER NOSE MOUNT** in accordance with the Tyler Installation Manual, TCS-107,REV. E, Dated 02/22/00.

The information in this document supersedes the basic manual, only where covered in the items contained herein. For limitations, procedures and performance not contained in this supplement consult the proper manual.

I LIMITATIONS

1. VNE=125MPH power ON or OFF with the Tyler Nose mount installed, per Tyler Installation TCS-107, Dated: 2/22/00 with all doors on. Vne must be decreased as shown on the appropriate Vne placard in basic flight manual.

2. Tyler Nose mount, may use ships auxiliary power outlet, but may not exceed 28 volts, 400 watts.

3. Tyler Nose mount camera packages may vary but may not exceed 39 lbs.

4. Depending on the helicopters flight configuration, a baggage compartment counter-weight may be needed. It is the pilot’s responsibility to ensure that the helicopter is properly loaded so that the entire flight is within c.g. vs. gross weight limits. Refer to the basic flight manual for additional flight information.

II NORMAL PROCEEDURES

1. The basic 206 and 206L Tyler Camera Nose mount configuration, is mount with camera, however it is the pilots responsibility to configure the crew and gear to maintain longitudinal and lateral C.G.

2. The Tyler Nose mount may be installed or removed by a Tyler Camera Systems trained technician, pilot or mechanic, and must be recorded in accordance with FAR 43.9.

DATE APPROVED: May 16, 2000

III EMERGENCY/MALFUNCTION PROCEEDURES

Emergency procedures not affected.

IV PERFORMANCE DATA

Hover performance not affected.

DATE APPROVED: May 16, 2000

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

MAJOR REPAIR AND ALTERATION
(Airframe, Powerplant, Propeller, or Appliance)

Form Approved
Budget Bureau No. 04-R060.1

FOR FAA USE ONLY
OFFICE IDENTIFICATION

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form.

1. AIRCRAFT	MAKE: Bell	MODEL: 206 B-III
	SERIAL NO.: 1234	NATIONALITY AND REGISTRATION MARK: N5678M
2. OWNER	NAME (As shown on registration certificate): Local Copters Inc.	ADDRESS (As shown on registration certificate): Your Town, USA

3. FOR FAA USE ONLY

FAA FORM 337
TYLER NOSE MOUNT
SAMPLE ONLY

4. UNIT IDENTIFICATION				5. TYPE	
UNIT	MAKE	MODEL	SERIAL NO.	REPAIR	ALTERATION
AIRFRAME	◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆ (As described in item 1 above) ◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆				X
POWERPLANT					
PROPELLER					
APPLIANCE	TYPE				
	MANUFACTURER				

6. CONFORMITY STATEMENT

A. AGENCY'S NAME AND ADDRESS	B. KIND OF AGENCY	C. CERTIFICATE NO.
Local Copters Inc. Your Town, USA	X U.S. CERTIFICATED MECHANIC FOREIGN CERTIFICATED MECHANIC CERTIFICATED REPAIR STATION MANUFACTURER	CRS 000-000

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

DATE	SIGNATURE OF AUTHORIZED INDIVIDUAL
1-1-86	John Doe

7. APPROVAL FOR RETURN TO SERVICE

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is [X] APPROVED [ ] REJECTED

BY							
		FAA FLT. STANDARDS INSPECTOR		MANUFACTURER		INSPECTION AUTHORIZATION	OTHER (Specify)
		FAA DESIGNEE	XX	REPAIR STATION		CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT	

DATE OF APPROVAL OR REJECTION	CERTIFICATE OR DESIGNATION NO.	SIGNATURE OF AUTHORIZED INDIVIDUAL
1-1-86	CRS 000-000	

GPO : 1972 O - 475-509

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. **DESCRIPTION OF WORK ACCOMPLISHED** *(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)*

Installation of Tyler External Nose Camera Mount.

Installation of Tyler Camera Systems External Nose Mounted Camera and Mount System in accordance with SH2256NM dated March 9, 1984 using Tyler Installation Manual Model 206 Nose Mount.

Limitations are stated in Flight Manual Supplement TCS-100.

Weight and Balance revised to reflect camera and mount installation.

XXXXXXXXXXXXXXXXXXXX NOTHING FOLLOWS XXXXXXXXXXXXXXXXXXXX

☐ ADDITIONAL SHEETS ARE ATTACHED

INSTRUCTION MANUAL

HELICOPTER WEIGHT AND BALANCE FOR BELL MODELS 206, 206A

206A-1, 206B, 206B-1, 206B-3

The basic configuration of the Tyler 206 Nose Mount Camera Assembly is with the Camera Assembly (camera, mount and film magazine) installed. The Camera Assembly was designed with the capability to remove the Camera Assembly for transport. The following conditions must be satisfied to complete the Camera Assembly installation.

(See Bell's Center of Gravity and Ballast Installation in the Bell Maintenance Manual for reference.)

1. The helicopter Empty Weight and C.G. must meet Bell's approved Empty Weight c.g. limit for both Camera Assembly and compensating Camera Ballast (see item 2 below) installed and removed. The weight and balance record must be updated to reflect both configurations.

EXAMPLE:

	ITEM	WEIGHT	FU. STA.
a.	Attach Frame	3.0 lbs.	25.5 in.
b.	Camera Assembly:		
	-Camera Mount	21.0 lbs.	25.2 in.
	-Camera Package w/ Magazine & Film	39.0 lbs. max	25.0 in.
c.	Remote Control Box	11.0 lbs.	as located
d.	Battery Pack	10.0 lbs. (each)	as located

Note: If it is not possible (on a particular helicopter) to maintain Empty Weight c.g. within approved limits after removal of Camera Assembly and Camera Ballast for transportation, then all flight operations must be completed with the above items installed in their respective approved positions.

Note: Camera Package Weights may vary, but may not exceed 39 lbs.

Note: No Nose Ballast weight permitted when camera mount is installed.

2. When Camera Assembly is installed in accordance with this manual, appropriate compensating ballast must be installed and secured at Fus. Sta. 162.0 to act as a counterweight about the mast centerline (Sta. 107.13) of the helicopter.

   Note: The Camera Ballast must be tagged to identify it as camera ballast only and secured to prevent movement during flight.

3. For transportation - Remove the Camera Assembly and Camera Ballast from their respective approved positions and treat as general cargo for weight and balance purposes and secure for flight.

4. GROSS WEIGHT C.G. - It shall remain the **pilots responsibility** to ensure that the helicopter is properly loaded so that the entire flight is within the limits of C.G. vs. Gross Weight chart shown in Section 1 of the Bell 206 Flight Manual.

INSTRUCTION MANUAL

HELICOPTER WEIGHT AND BALANCE, MODELS 206L, 206L-1, 206L-3, 206L-4 SERIES HELICOPTERS

(SEE BELL'S CENTER OF GRAVITY AND BALLAST INSTALLATION IN THE BELL MAINTENANCE MANUAL FOR REFERENCE)

1. THE HELICOPTER EMPTY WEIGHT AND C.G. MUST MEET BELL'S APPROVED EMPTY WEIGHT C.G. LIMIT FOR CAMERA ASSEMBLY INSTALLED AND REMOVED. THE WEIGHT AND BALANCE RECORD MUST BE UPDATED TO REFLECT BOTH CONFIGURATIONS.

	ITEM	WEIGHT	FU. STA.
a.	Attach Frame	3.0 lbs.	25.5 in.
b.	Camera Assembly:		
	-Camera Mount	21.0 lbs.	25.2 in.
	-Camera Package w/ Magazine & Film	39.0 lbs.	25.0 in.
c.	Remote Control Box	11.0 lbs.	as located
d.	Battery Pack	10.0 lbs. (each)	as located

2. When Camera Assembly is installed in accordance with this manual, appropriate compensating ballast must be provided, installed and secured at Fus. sta. 175.0 to act as a counterweight about the mast centerline (Sta. 121.40) of the helicopter.

   Note: The Camera Ballast must be tagged to identify it as camera ballast only and secured to prevent movement during flight.

   Note: Camera Package Weights may vary, but must not exceed 39 lbs.

   Note: No Nose Ballast Weight permitted when camera mount is installed.

3. For transportation - Remove the Camera Assembly and Camera Ballast from their respective approved positions and treat as general cargo for weight and balance purposes and secure for flight.

4. GROSS WEIGHT C.G. - It shall remain the **pilot's** responsibility to ensure that the helicopter is properly loaded so that the entire flight is within the limits of C.G. vs. Gross Weight chart shown in Section 2 of the Bell 206 Flight Manual.