

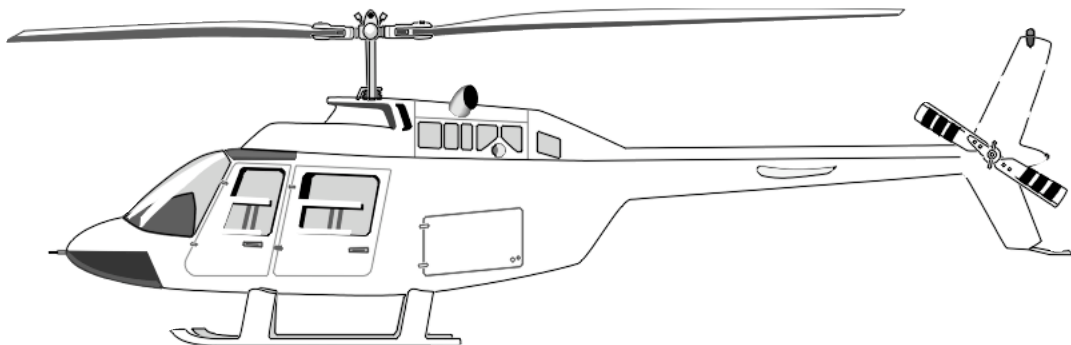
SIDE VIDEO GIMBAL

JET RANGER / LONG RANGER

INSTALLATION MANUAL



Tyler - Side Video Gimbal
For *Bell* 206 & 206L Series Helicopters
FAA STC # SR00850LA



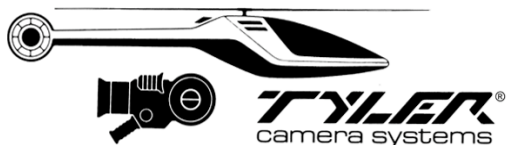
PLEASE RETURN THIS MANUAL WITH EQUIPMENT

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





MODEL: Bell 206

REPORT #: U.M.INST-001

JOB #: _____

DATE: 12-2-1999

SIDE VIDEO GIMBAL (MODEL SVG-JR)

INSTALLATION MANUAL FOR

JET RANGER / LONG RANGER HELICOPTERS

PREPARED BY: C. Tyler

OF PAGES: 8

CHECKED BY: N. Tyler

OF DRAWINGS: _____

APPROVED BY: G. Wood

REVISIONS

DATE	PAGES AFFECTED	REVISION LETTER		APPROVAL
12-2-99	ALL	N/C	ORIGINAL ISSUE	

**SIDE VIDEO GIMBAL
ASSEMBLY INSTRUCTIONS**
(Pages 2-8)



IMPORTANT

INSTALL COUNTERBALANCE FOR: *UltraMedia II* (shown)
DO NOT INSTALL COUNTERBALANCE FOR: *UltraMedia RS*

Install for Left Side (shown) or Right side of helicopter.



Step
01/13

Remove stock rear skid gear cap and replace with *Tyler Camera Systems'* rear skid gear cap SG-317 (Jet Ranger) or, SG-318 (Long Ranger) using FOUR (4) AN4-10A bolts. Refer to *Bell* helicopter's maintenance manual for correct torque specifications.



IMPORTANT

Utilize the existing strip of rubber when installing the skid gear cap.



Step
02/13

Place connected BSS-006 tube under the helicopter in front of rear skid gear. Slide pull tube mount brackets SG-316 (Jet Ranger) or, BSS-013 (Long Ranger) onto the two upright support tube BSS-006. Note: Make sure quick pin holes are facing aft and up for (Jet Ranger) and, aft for the (Long Ranger).



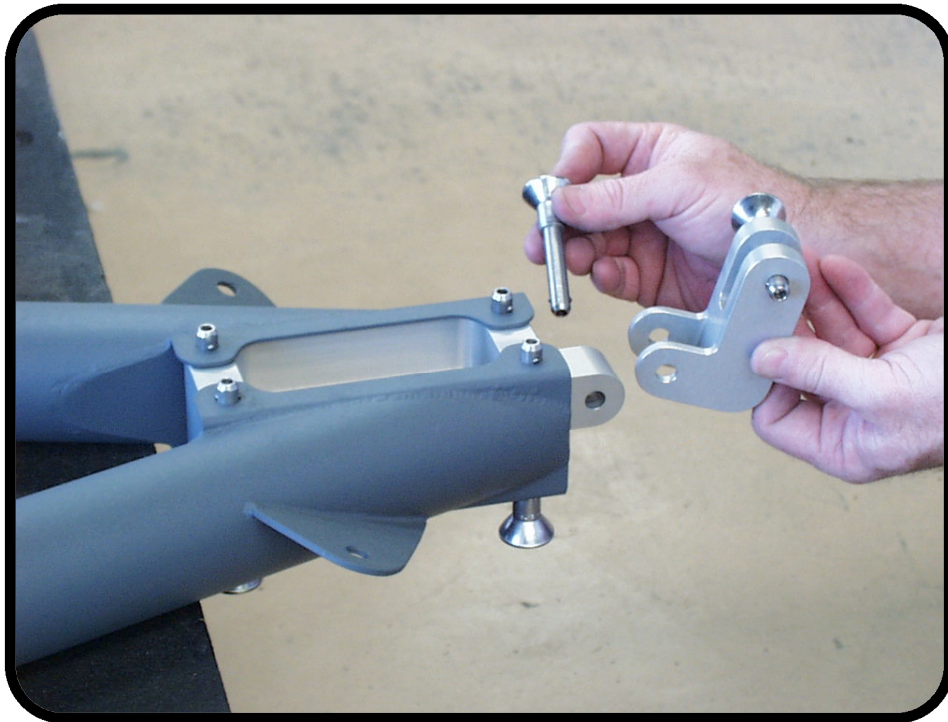
Step
03/13

Slide the two pull tube mounts BSS-006 together and secure with ONE (1) 3" quick release pin AVK6M3.00.



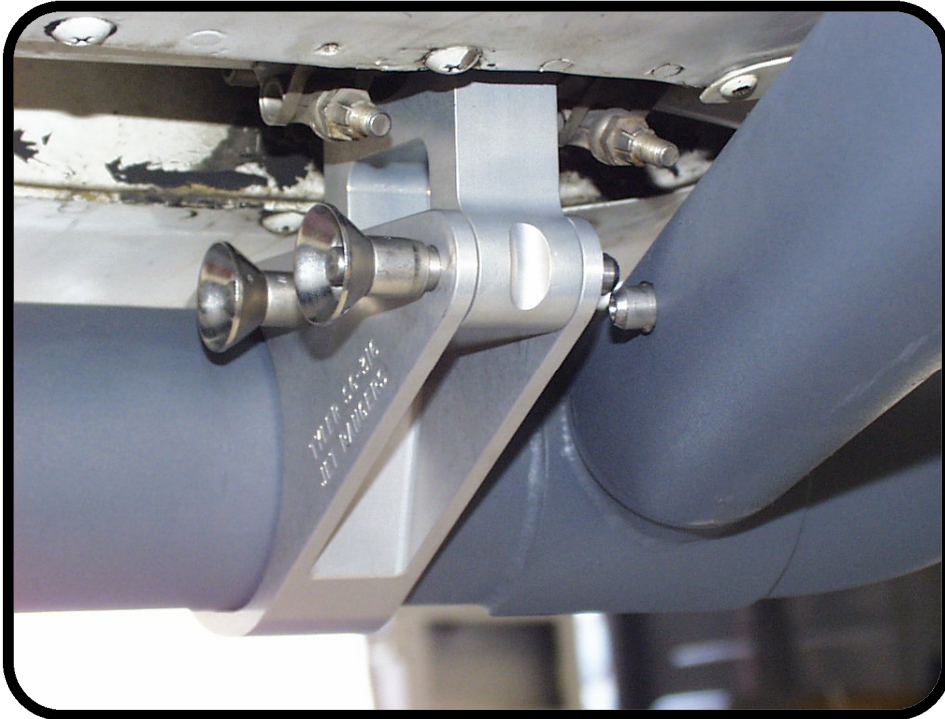
Step
04/13

Slide the left and right horizontal support tube BSS-007 onto receiver tangs located at the rear of upright support tubes BSS-006 and secure them with ONE EACH (1 ea.) 2.75" quick release pin AVK6M2.75.



Step
05/13

Slide "U" bracket receiver block into the rear "U" bracket located at the aft end of horizontal support tube BSS-007 and secure into place using FOUR (4) 2.75" quick release pins AVK6M2.75. Install receiver block clevis BSS-004 (Jet Ranger) or, BSS-014 (Long Ranger) to "U" bracket receiver block BSS-003 with ONE (1) 1.50" quick release pin AVK6M1.50.



Step
06/13

Lift BSS-006 tube up to rear skid gear cap and connect the pull tube mount SG-316 to the rear skid gear cap SG-317 (Jet Ranger) or, BSS-013 (Long Ranger) and secure with FOUR (4) 1.5" quick release pins AVK6M1.50.



Step
07/13

Pivot receiver block clevis BSS-004 and horizontal support tubes upward to the ships rear hard point and secure using ONE (1) 1.50" quick release pin AVK6M1.50 (Jet Ranger) or, ONE (1) AVK7M2.00 (Long Ranger).



Step
08/13

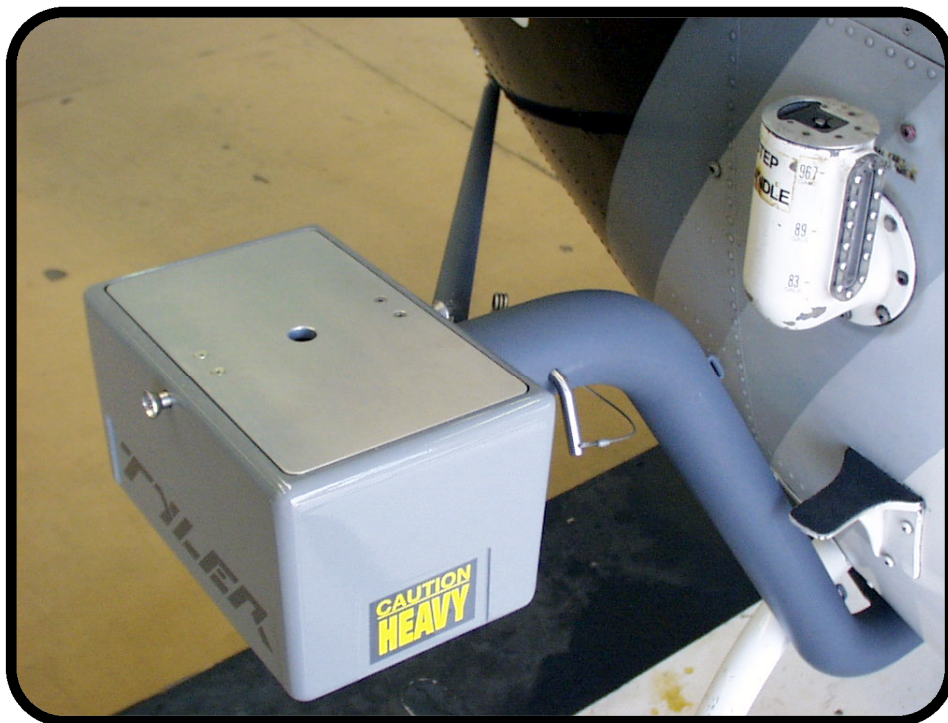
Install both left and right support struts BSS-008 to the upright support tube BSS-006 and the horizontal support tube BSS-007 using TWO EACH (2 ea.) .75" quick release pins AVK6M.75 and secure the 3/8-24 jam nuts on each tube. Note: To access rear cargo compartment after mount is installed, release rear quick release pin on BSS-008 and pivot rear support tube down.



Step
09/13

Install Counterbalance BSS-009 and secure with ONE (1) 3" quick release pin AVK6M3.00.

UltraMedia II - use add one lead weight. • *UltraMedia RS* - leave weight box empty.



**Step
10/13**

Secure Lid of Counterbalance box BSS-009 with ONE (2) 3" quick release pins AVK5M1.00.



**Step
11/13**

Install Video Gimbal (*UltraMedia II*, or *UltraMedia RS*) BSS-005 and secure with ONE (1) 3 " quick release pins AVK6M3.00.



Step
12/13

Route cables as shown and secure with Tie-Wraps or Grip-Tape.



NOTE

If the helicopter has foot step Pads instead of foot-step Rails, secure the cables between the foot-step Pads with Tie-Wraps or Grip-Tape.



Step
13/13

Fasten the *FS/* Camera Body Unit to a Rear seat-cussion with a seat-belt.

- VIDEO GIMBAL assembly complete -

United States Of America
Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number SR00850LA

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 * of the * Regulations. **

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

Make: * No. SR00850LA for list of approved rotorcraft

Model: * models and applicable airworthiness regulations.

Description of Type Design Change:

Installation of Tyler BSS/Universal mount in Bell 206 and 206L helicopters in accordance with FAA Approved Tyler Camera Systems Master Drawing List No. TCS BSSMT-001, Revision B, dated July 14, 1997, as listed on AML No. SR00850LA, dated January 11, 2000, or later FAA Approved Revisions.

Limitations and Conditions: Approval of this change in type design applies to the aircraft models listed on AML No. SR00850LA 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: June 5, 1996

Date reissued:

Date of issuance: January 11, 2000

Date amended:



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.

TYLER CAMERA SYSTEMS
14218 AETNA ST.
VAN NUYS, CA. 91401
SUPPLEMENT NO. UM-RFM-001 Rev A

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

FAA APPROVED
ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
FOR THE INSTALLATION OF THE
TYLER UNIVERSAL BALL MOUNTS TO THE
BELL JET RANGER SERIES 206 & 206L
HELICOPTERS

MODELS: 206, 206A, 206A-1, 206B, 206B-1, 206B-3
206L, 206L-1, 206L-3, 206L-4

This supplement must be attached to the FAA approved Bell 206 or 206L Rotorcraft Flight Manual when the rotorcraft is modified by the installation of **Tyler Universal Ball Mount** listed above in accordance with

STC # SR00850LA

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 Test Branch, ANM-160L
Federal Aviation Administration
Los Angeles Aircraft Certification Office
Transport Airplane Directorate

DATE OF APPROVAL: Dec. 2, 1999

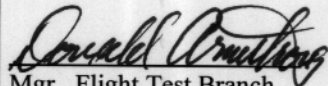
TYLER CAMERA SYSTEMS
 14218 AETNA ST.
 VAN NUYS, CA. 91401
 SUPPLEMENT NO. UM-RFM-001

RFM SUPPLEMENT TO BELL 206 & 206L
 SERIES HELICOPTERS
 MODELS 206, 206A, 206A-1, 206B, 206B-1, 206B-3
 206L, 206L-1, 206L-3, 206L-4
 STC Number SR 00850LA-R

TYLER CAMERA MOUNT SYSTEMS

FOR BELL 206 & 206L SERIES HELICOPTERS

LOG OF PAGES

REV	PAGE NO.	PAGE DATE	DESCRIPTION	FAA APPROVED
Original	Cover 1,2	2 Dec 1999	Initial Issue	 Mgr., Flight Test Branch. ANM-160L Los Angeles Aircraft Certification Office FAA Transport Airplane Directorate Date <u>12-2-99</u>

FAA APPROVED MODEL LIST (AML) NO. SROO850LA
TYLER CAMERA SYSTEMS

FOR

INSTALLATION OF TYLER BSS/UNIVERSAL MOUNT IN BELL 206 AND 206L SERIES HELICOPTERS

ISSUE DATE: January 11, 2000

ITEM	AIRCRAFT MAKE	AIRCRAFT MODEL	ORIGINAL TYPE CERTIFICATE NUMBER	CERTIFICATION BASIS FOR ALTERATION	INSTALLATION INSTRUCTIONS		RFM SUPPLEMENT NUMBER/DATE	AML AMENDMENT DATE
					REPORT NO.	REV. NO. AND DATE		
1	BELL	206 206A 206A-1 206B 206B-1 206B-3 206L 206L-1 206L-3 206L-4	H2SW	CAR 6 AND FAR 27 AND AMENDMENTS LISTED ON TCDS H2SW	U.M. INST- 001	REV. N/C 06/25/97	UM-RFM-001 REV. A 12/2/99	N/A

FAA APPROVED: 

MANAGER, AIRFRAME BRANCH
LOS ANGELES AIRCRAFT CERTIFICATION OFC.

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT

Use the **Tyler Installation Manual, U.M. INST-001** dated 06/25/97 or later dated manual to install the **TYLER UNIVERSAL BALL MOUNT** on the helicopter.

The information to compute the weight and balance can be found in the **Tyler Installation Manual** for the particular camera to be installed and are not listed in the limitation section.

I. Limitations

1. VNE = 95 KIAS (110 mph) power on or off with the **Universal Ball Mount** installed with all doors on.
2. The **Universal Ball Mount** and Counterweights must be installed / removed as a unit, (when applicable) for all operations to maintain CG.
3. The camera package are limited to a maximum allowable frontal area size and weight as follows:

	Size (sq. ft.)	Weight (lbs.)	Fus. Stn (in)
Universal Ball	3.0	200	132 long, 58 lat

Caution

For 206a and 206b lateral C.G. limits vary with longitudinal C.G. lateral C.G. may exceed lateral C.G. limits when longitudinal C.G. is forward of 108 inches.

For 206L-4 lateral C.G. limits vary with gross weight. Lateral C.G. may exceed lateral C.G. limits when gross weight is above 4150 pounds. Refer to basic Rotorcraft Flight manual for Longitudinal and lateral C.G. limits.

4. The motion picture or video cameras systems can not exceed the placard voltage of 28 volts and 400 watts if powered through the Bell factory auxiliary power outlet.

II. Normal Operations

1. The **Flir RS (40#)** DOES NOT require the installation of the **Counterbalance**.
2. The **Flir Ultramedia II (105#)** DOES require the installation of the **Counterbalance**.
3. Any mount system 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.

IV. Performance Data

1. Hover performance not affected.
2. Climb performance not affected

Supplemental Type Certificate

This approval is issued to:

Tyler Camera Systems
14218 Aetna Street
Van Nuys, California 91401
U.S.A.

Approval Number: SH00-12

Issue Number: 1

Date of Approval: 2000 February 22

Date of Issue: 2000 February 22

Responsible Office: Prairie and Northern

Aircraft/Engine Type/Model: Bell 206 models per FAA Approved Model List

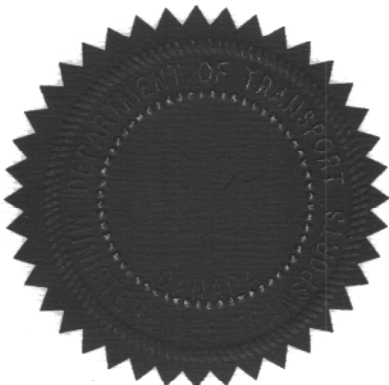
**Canadian Type Certificate or
Equivalent:** H-92/H2SW

Description of Design Change: Installation of Tyler Camera Systems BSS/Universal Ball Mount per FAA STC SR00850LA, dated 2000 January 11, or later FAA approved revision.

**Installation/Operating Data,
Required Equipment and
Limitations:** Installation in accordance with FAA approved Tyler Camera Systems Master Drawing List No. TCS BSSMT-001, Rev. B, dated 1997 July 14, or later FAA approved revision.

Operation in accordance with FAA approved Tyler Camera Systems Rotorcraft Flight Manual No. UM-RFM-001, Rev. A, dated 1999 December 2, or later FAA approved revision.

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product.



A handwritten signature in dark ink, appearing to read "D.S. Austen".

D.S. Austen
For Minister of Transport

SIDE VIDEO GIMBAL

JET RANGER (206L)

SAMPLE WEIGHT & BALANCE DATA

WEIGHT & BALANCE DATA AND EQUIPMENT LIST						
Weight x Arm = Moment						
6/23/98						
SAMPLE SHEET						
ITEM:	AIRCRAFT MODEL J/R 206 L	REGISTRATION	AIRCRAFT S/N	PILOT		
				N/A		
	LONGITUDINAL			LATERAL		
	WEIGHT	ARM	MOMENT	ARM	MOMENT	
AIRCRAFT EMPTY WEIGHT & C.G.	2250	130.66	293985	0.28	630	
CAMERA	35	132.13	4624.55	58	2030	
COUNTERWEIGHT BOX WEIGHTS	18	132.13	2378.34	-58	-1044	
LAP CONTROLLER	10	65	650			
FRAMEWORK MAIN	68	148	10064	0	0	
SUBTOTAL:	2381	130.9121756	311701.89	0.28	1616	
PILOT (A+) FORWARD RIGHT	170	65	11050	14.17	2408.9	
CO-PILOT (A-) FORWARD LEFT	0	65	0	-14.17	0	
PAX (B+) INSIDE RIGHT REAR	170	116	19720	0	0	
PAX (B-) INSIDE LEFT REAR	0	116	0	0	0	
REAR BAGGAGE LBS	0	0	0	0	0	
FUEL(194.6 GAL. MAX.) X 6.8 (FOR. 1) GAL.	0	130.4	0	0	0	
EQUIPMENT SUBTOTAL:	340		30770			
TOTAL AIRCRAFT WEIGHT:	2721	125.86251	342471.89	0.28	4024.9	
AIRCRAFT MAX GROSS WEIGHT:	3200					
NEW USEFUL LOAD:	479					
NEW CENTER OF GRAVITY (LONGITUDINAL)	125.8625101					
NEW CENTER OF GRAVITY (LATERAL)	1.479198824					
LONGITUDINAL C.G. LIMITS:				LATERAL C.G.	1.479199	
FOR. & REAR LIMITS				LATERAL C.G. LIMITS		
(118.0 - 128.5)				(+ 3.5/ -4.0)		

ITEM:	LONGITUDINAL WEIGHT	ARM	MOMENT	LATERAL ARM	MOMENT
AIRCRAFT EMPTY WEIGHT & C.G.	1830.08	114.23	209050.0384	0.28	512.4224
CAMERA	102	120	12240	58	5916
COUNTERWEIGHT BOX WEIGHTS	50	120	6000	-58	-2900
LAP CONTROLLER	10	65	650		
FRAMEWORK MAIN	68	136	9248	0	0
SUBTOTAL:	2060.08	115.133332	237188.0384	0.28	3528.4224
PILOT (A+) FORWARD RIGHT	170	65	11050	14.17	2408.9
CO-PILOT (A-) FORWARD LEFT	170	65	11050	-14.17	-2408.9
PAX (B+) INSIDE RIGHT REAR	0	104	0	0	0
PAX (B-) INSIDE LEFT REAR	0	104	0	0	0
REAR BAGGAGE LBS	0	0	0	0	0
FUEL(194.6 GAL. MAX.) X 6.8 (FOR. 1) GAL.	60	116	47328	0	0
EQUIPMENT SUBTOTAL:	748		69428		
TOTAL AIRCRAFT WEIGHT:	2808.08	109.190635	306616.0384	0.28	3528.4224
AIRCRAFT MAX GROSS WEIGHT:	3200				
NEW USEFUL LOAD:	391.92				
NEW CENTER OF GRAVITY (LONGITUDINAL)	109.190635				
NEW CENTER OF GRAVITY (LATERAL)	1.256324885				
LONGITUDINAL C.G. LIMITS:				LATERAL C.G.	1.256525
FOR. & REAR LIMITS				LATERAL C.G. LIMITS	
(106.0 - 114.2)				(+ 3.0/ -4.0)	