# SCHWEIZER AIRCRAFT CORP.

Supplement to the FAA Approved
Rotorcraft Flight Manual

For

Schweizer 300CB Helicopter
Model 269C-1

**LEFT-HAND PILOT-IN-COMMAND (PIC)**
**HELICOPTER ASSEMBLY**

Date of Original Approval: 23 Dec 1996

Date of Rev#3 Approval: APR - 1 2005

Approved By: Michele J. Maurer
for Vito A. Pulera
Manager, NYACO, ANE-170

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
FOR
300CB MODEL 269C-1 HELICOPTERS

**LOG OF PAGES**

| PAGE | DATE | PAGE | DATE |
|---|---|---|---|
| 1 | 01 Apr 2005 | 13 | 23 Mar 2000 |
| 2 | 01 Apr 2005 | 14 | 23 Mar 2000 |
| 3 | 01 Apr 2005 | 15 | 01 Apr 2005 |
| 4 | 23 Dec 1996 | 16 | 01 Apr 2005 |
| 5 | 23 Dec 1996 | 17 | 23 Mar 2000 |
| 6 | 23 Dec 1996 | 18 | 23 Mar 2000 |
| 7 | 23 Mar 2000 | 19 | 23 Mar 2000 |
| 8 | 23 Mar 2000 | 20 | 23 Mar 2000 |
| 9 | 23 Dec 1996 | 21 | 23 Mar 2000 |
| 10 | 23 Dec 1996 | 22 | 23 Mar 2000 |
| 11 | 19 Jun 1997 | 23 | 23 Mar 2000 |
| 12 | 23 Dec 1996 | 24 | 23 Mar 2000 |

NOTES

The change bar ( ▌ ) defines the latest FAA Approved changes.
The asterisk (*) indicates not officially approved.



FAA Approved: 23 Dec 1996
Revised: 01 Apr 2005

# REVISION TABLE

| Revision Number | Date | Description |
|---|---|---|
| #1 | 19 Jun 1997 | Addition of 65.2 gallon aux fuel system data |
| #2 | 23 Mar 2000 | Addition of 33 Gal. Std. Tank |
| #3 | 01 Apr 2005 | Revision to weight and balance form format. |

This page is intentionally left blank.

TABLE OF CONTENTS

TABLE OF CONTENTS (cont)

## SECTION I
Introduction and General

This supplement must be carried in the applicable basic FAA approved 300CB Model 269C-1 Rotorcraft Flight Manual when the rotorcraft is equipped for Left Hand PIC. Except as modified by this flight manual supplement, operation in compliance with the basic approved Rotorcraft Flight Manual is mandatory.

The helicopter main fuel tank has a total capacity of 30.0 or 33.0 U.S. gallons (114 or 125 liters) depending on aircraft S/N, and is located externally on the right-hand side of the cabin bulkhead. An auxiliary tank with a total capacity of 35.2 or 33.0 U.S. gallons (133 or 125 liters) depending on aircraft S/N, may be attached externally to the left-hand side of the cabin bulkhead.

**SECTION II**
Limitations

## 2-1. FLIGHT LIMITATIONS

The minimum crew is one pilot

1. Solo flights are permitted from left seat only

2. With three people onboard, the co-pilot collective and cyclic sticks shall be removed (co-pilot controls may be removed by pilot).

## 2-2. FLIGHT LIMITATIONS PLACARDS

The following placards are required on all helicopters

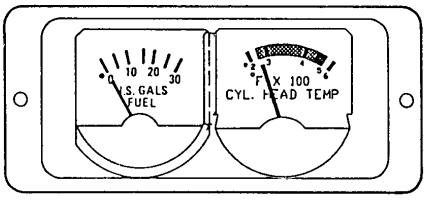
NO STORAGE BETWEEN SEATS WITH CENTER COLLECTIVE INSTALLED

## 2-3. FUEL SYSTEM

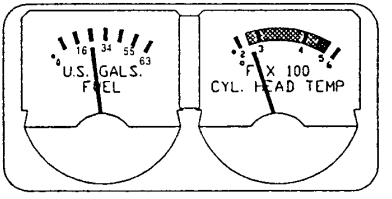
Table 2-1. Fuel Capacity

| SYSTEM CAPACITY | QUANTITY | USABLE QUANTITY |
|---|---|---|
| Standard | 30.0 U.S. gallons | 29.6 U.S. gallons |
| Std. + Aux | 65.2 U.S. gallons | 63.0 U.S. gallons |
| Or depending on aircraft S/N | | |
| Standard | 33.0 U.S. gallons | 32.5 U.S. gallons |
| Std. + Aux | 66.0 U.S. gallons | 64.0 U.S. gallons |

## 2-4. INSTRUMENT MARKINGS




STD. FUEL TANK CONFIGURATION*




STD. + AUX FUEL TANK CONFIGURATION*

*Refer to Flight Manual for fuel gages used with 32.5/64.0 gal usable capacity fuel system.

**SECTION III**
Emergency and Malfunction Procedures

## 3-1. INSTRUMENT PANEL - WARNING/CAUTION LIGHTS

The left-hand PIC instrument panel warning/caution light configuration is shown in Figure 3-1 below.

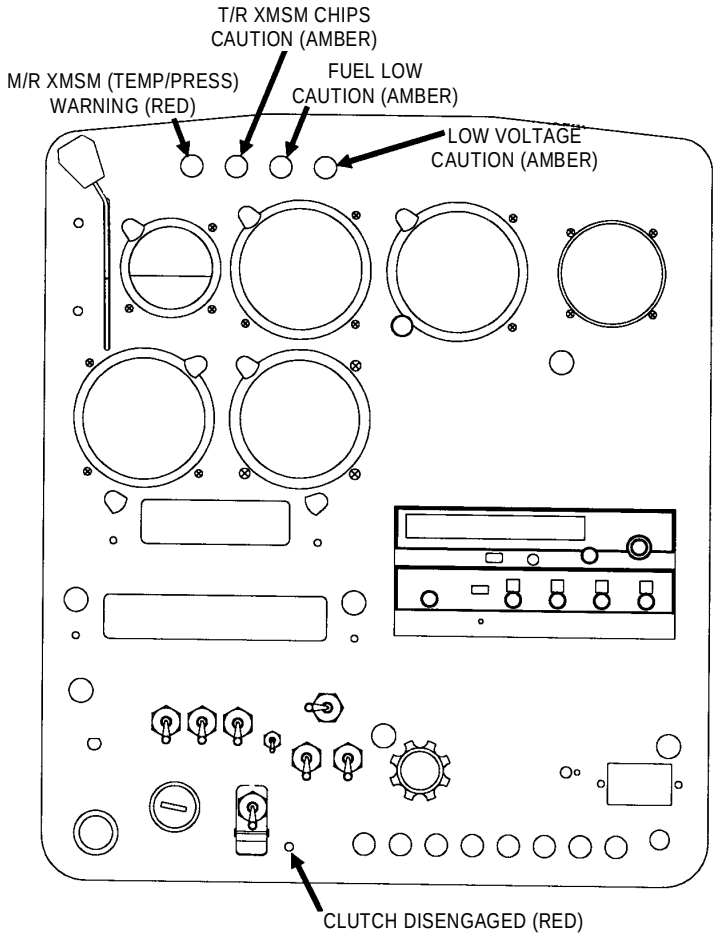



Figure 3-1. Instrument Panel - Warning/Caution Lights

## 4-1. INSTRUMENT PANEL CONFIGURATION

The left-hand PIC typical instrument panel configuration is shown in Figure 4-1 below.

1. CARB HEAT CONTROL
2. CARB TEMP INDICATOR.
3. M/R XSMS (TEMP/PRESS) WARNING LIGHT
4. T/R XMSM CHIPS CAUTION LIGHT
5. FUEL LOW CAUTION LIGHT
6. LOW VOLTAGE WARNING LIGHT
7. AIRSPEED IND.
8. ALTIMETER
9. COMPASS
10. ENGINE & ROTOR TACHOMETER
11. MANIFOLD PRESSURE INDICATOR
12. FUEL QTY/CYL HEAD TEMP
13. PANEL LIGHT (TYPICAL)
14. OIL PRESS/OIL TEMP/AMPS
15. RADIO
16. TRANSPONDER
17. TRIM SWITCH
18. ALTERNATOR SWITCH
19. FUEL MIXTURE CONTROL
20. RUNNING TIME METER
21. PANEL LIGHT DIMMER
22. HEATER CIRCUIT BREAKER
23. TRANSPONDER CIRCUIT BREAKER
24. ADF SWITCH
25. RADIO CIRCUIT BREAKER
26. LANDING LIGHT CIRCUIT BREAKER
27. INSTRUMENT CIRCUIT BREAKER
28. CLUTCH CIRCUIT BREAKER
29. TRIM CIRCUIT BREAKER
30. BATTERY SWITCH
31. CLUTCH DISENGAGED WARNING LIGHT
32. HOT MIC SWITCH
33. CLUTCH CONTROL SWITCH
34. BEACON LIGHT SWITCH
35. MAGNETO KEY SWITCH
36. FUEL SHUTOFF CONTROL
37. PANEL LIGHT SWITCH
38. HEATER BLOWER CONTROL
39. POSITION LIGHT SWITCH
40. PANEL LIGHT (TEARDROP)(TYPICAL)

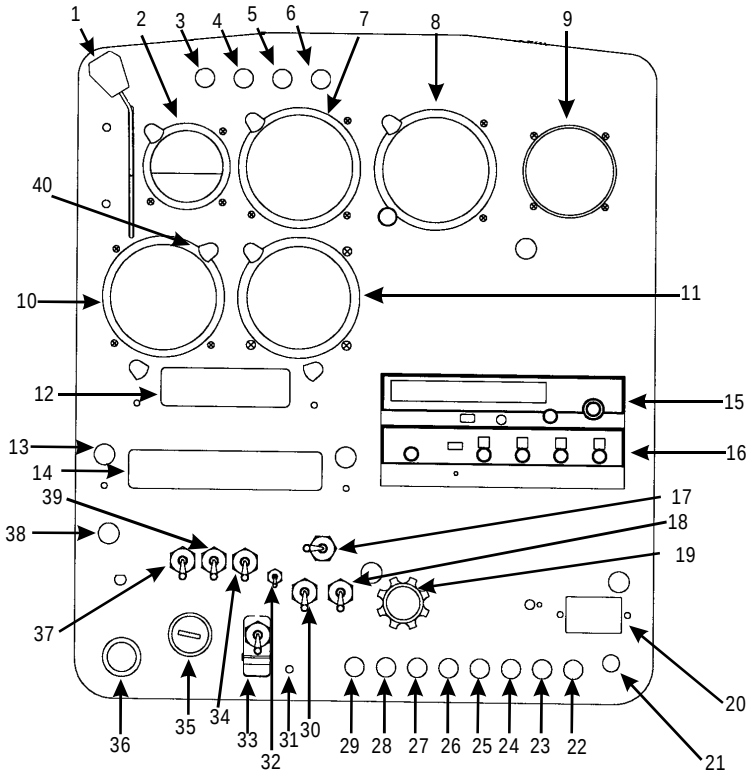



Figure 4-1. Typical Instrument Panel Configuration

## 4-2. PILOT'S PREFLIGHT INSPECTION

**ENGINE - LEFT SIDE**

| | |
|---|---|
| Aux. fuel quantity level (if installed) | CHECK |
| Aux. fuel tank (if installed) cap seal for proper condition | CHECK |

**ENGINE - RIGHT SIDE**

| | |
|---|---|
| Fuel quantity level | CHECK |
| Fuel tank cap seal for proper condition | CHECK |

**SECTION V**
Performance Data

Not Affected

**SECTION VI**
Weight and Balance

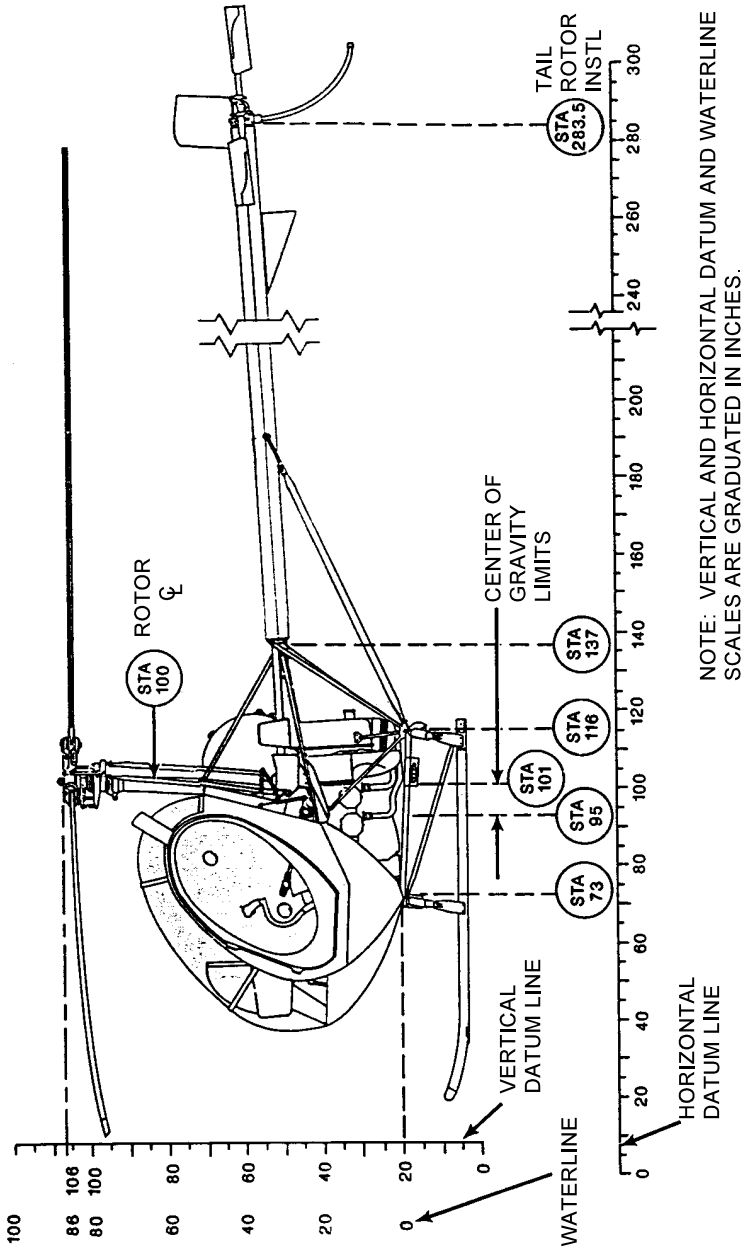



Figure 6-1. Station Diagram

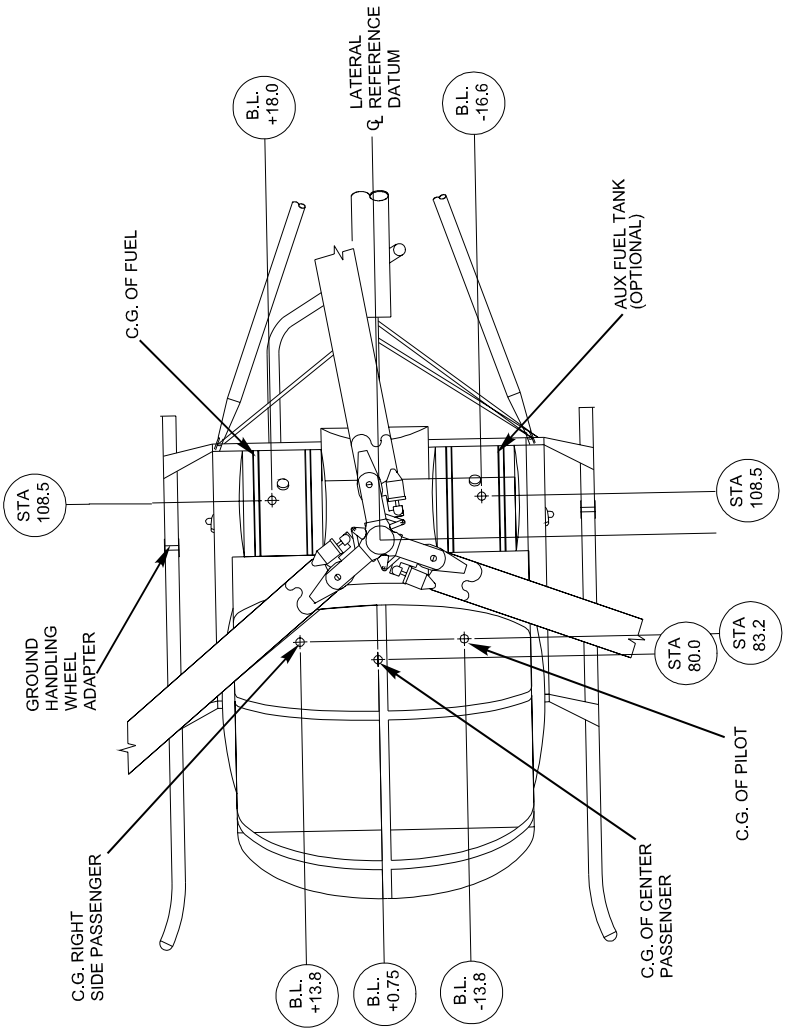



Figure 6-2. Balance Diagram
30 or 65.2 Gal. Total Fuel Capacity

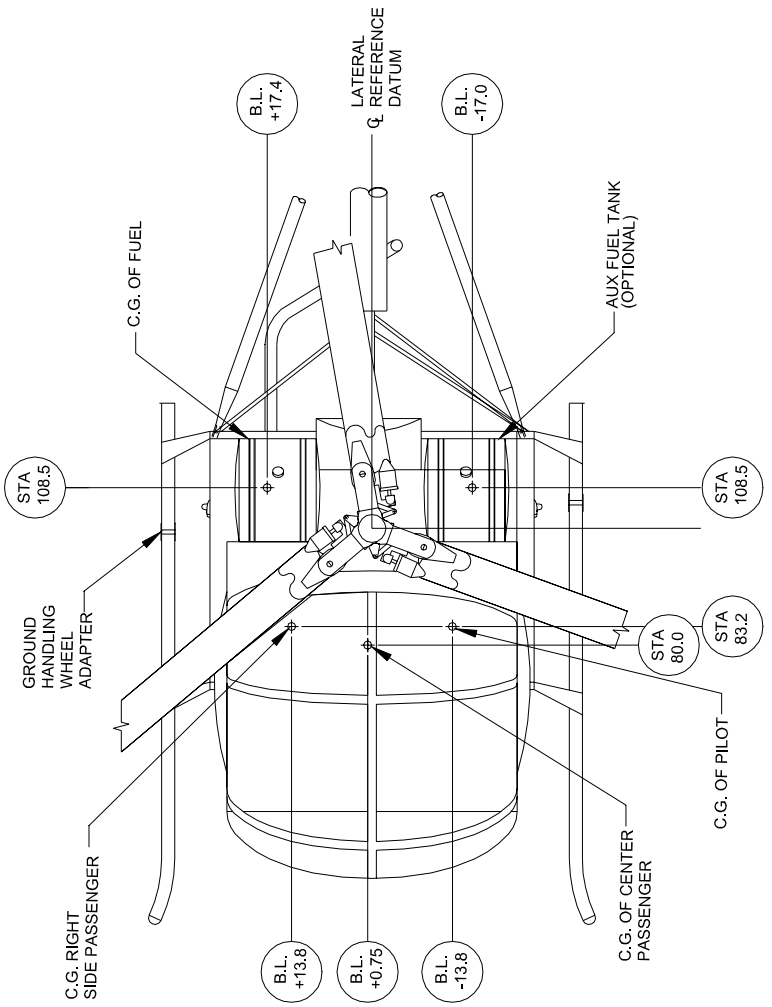



Figure 6-2A. Balance Diagram
33 or 66 Gal. Total Fuel Capacity


FAA Approved: 23 Dec 1996
Revised: 23 Mar 2000

# WEIGHT AND BALANCE WORKSHEET
# MODEL 269C-1 (300CB)

| HELICOPTER MODEL | SERIAL NUMBER | REGISTRATION NUMBER |
|---|---|---|
| 269C-1 | | |
| DATE | | WEIGHED BY |

| WEIGHING POINT | SCALE READING (LB) | TARE (LB) | NET WEIGHT (LB) | LONG. ARM (IN) | LONG. MOMENT (IN-LB) | LAT. ARM (IN) | LAT. MOMENT (IN-LB) |
|---|---|---|---|---|---|---|---|
| LEFT MAIN | 482 | 1.9 | 480 | 75.6 | 36968 | -19.0 | -9291 |
| RIGHT MAIN | 500 | 1.9 | 498 | 75.6 | 36364 | +19.0 | +9139 |
| AFT | 148 | 2.9 | 145 | 271.4 | 39353 | +0.6 | +87 |
| TOTAL (AS WEIGHED) | 1130 | 6.7 | 1123 | 101.1 | 112685 | -0.1 | -65 |

| | | |
|---|---|---|
| A DISTANCE FROM STATION 100.0 TO MAIN WEIGHING POINTS IN INCHES | RIGHT HAND 24.4 | LEFT HAND 24.4 |
| B AVERAGE MOMENT ARM FOR MAIN WEIGHING POINTS (100.0A) | 100.0 - 24.4 = 75.6 | |
| C MOMENT ARM FOR AFT WEIGHING POINT IN INCHES | 271.4 | |

| | | |
|---|---|---|
| OIL ABOARD | [X] YES | [ ] NO |
| MAIN GEAR BOX | [X] YES | [ ] NO |
| TAIL GEAR BOX | [X] YES | [ ] NO |
| FULL FUEL ABOARD | [ ] YES | [X] NO |

**EQUIPMENT MISSING AT TIME OF WEIGHING**

| ITEM NUMBER | WEIGHT | LONG. ARM | LONG. MOMENT | LAT. ARM | LAT. MOMENT | | |
|---|---|---|---|---|---|---|---|
| 300CB FLIGHT MANUAL | 1.0 | 48.0 | 48 | 0 | 0 | | |
| UNUSEABLE FUEL (33 gal. fuel tank)* | 3.0 | 108.5 | 325 | +17.4 | +52 | | |
| (66 gal. fuel system)** | (12) | (108.5) | (1302) | (+.2) | (+2.4) | | |
| *NOTE: Removable portions of ground handling wheel installation (if so equipped) are NOT included in aircraft empty weight.* | | | | | | | |
| | | | | | | | |
| TOTAL | 4.0 | 93.3 | 373 | +13 | +52 | | |

**SURPLUS EQUIPMENT IN AIRCRAFT AT TIME OF WEIGHING**

| ITEM NUMBER | WEIGHT | LONG. ARM | LONG. MOMENT | LAT. ARM | LAT. MOMENT | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTAL | | | | | | | |

*Unusable fuel for 30 gallon tank is .2 gallon
*Sample calculations based on single 33 gal. fuel tank configuration

Figure 6-3. Sample Weight and Balance Worksheet (Sheet 1 of 2)

| BASIC WEIGHT | WEIGHT (LB) | LONG. ARM (IN.) | LONG. MOMENT (IN.-LB) | LAT. ARM (IN.) | LAT. MOMENT (IN.-LB) |
|---|---|---|---|---|---|
| WEIGHT (AS WEIGHED) | 1123 | 100.9 | 113311 | | |
| SURPLUS WEIGHT | | | | | |
| MISSING EQUIPMENT WEIGHT | 4.0 | 93.3 | 373 | | |
| | | | | | |
| TOTAL BASIC WEIGHT (DELIVERED) | 1127 | 100.9 | 113684 | | |
| LATERAL CENTER OF GRAVITY → + 0.4 | | | | | |
| **MOST FORWARD LOADING** | **WEIGHT (LBS)** | **LONG. ARM (IN.)** | **LONG. MOMENT (IN.-LB)** | **LAT. ARM (IN.)** | **LAT. MOMENT (IN.-LB)** |
| BASIC WEIGHT | 1127 | 100.9 | 113714 | | |
| PILOT & PASSENGER, R/H | 340 | 83.2 | 28288 | | |
| FUEL TANK EMPTY | 0.0 | 108.5 | 0 | | |
| PASSENGER, CENTER | 170 | 80.0 | 13600 | | |
| TOTAL GROSS WEIGHT | 1637 | 95.1 | 155602 | | |
| APPROVED FORWARD LIMIT 95 INCHES ↑ | | | | | |
| **MOST AFT LOADING** | **WEIGHT (LBS)** | **LONG. ARM (IN.)** | **LONG. MOMENT (IN.-LB)** | **LAT. ARM (IN.)** | **LAT. MOMENT (IN.-LB)** |
| BASIC WEIGHT | 1127 | 100.9 | 113714 | | |
| PILOT | 170 | 83.2 | 14144 | | |
| FUEL, FULL (32.5 GAL. SYSTEM) | 195 | 108.5 | 21158 | | |
| TOTAL GROSS WEIGHT | 1492 | 99.9 | 149016 | | |
| APPROVED AFT LIMIT 101 INCHES ↑ | | | | | |

Sample based on single 33 gal. total capacity fuel tank

Figure 6-3. Sample Weight and Balance Worksheet (Sheet 2 of 2)

**BASIC WEIGHT AND BALANCE RECORD - LONGITUDINAL (LONG.) AND LATERAL (LAT.)**
(CONTINUOUS HISTORY OF CHANGES IN STRUCTURE OR EQUIPMENT AFFECTING WEIGHT AND BALANCE)

AIRCRAFT MODEL 269C, C-1 or 269D | SERIAL NUMBER | REGISTRATION NUMBER | PAGE | OF

| DATE | ITEM NO. IN | ITEM NO. OUT | DECRIPTION OF ARTICLE OR MODIFICATION | LONGITUDINAL WEIGHT + ADD – REMOVE | LONGITUDINAL ARM | LONGITUDINAL MOMENT | LATERAL ARM + RIGHT – LEFT | LATERAL MOMENT | RUNNING TOTAL - EMPTY AIRCRAFT WEIGHT | LONGITUDINAL ARM | LONGITUDINAL MOMENT IN/LB | LATERAL ARM | LATERAL MOMENT IN/LB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TOTAL DELIVERED WEIGHT | | | | | | 1116 | 101.0 | 112733 | -0.1 | -65 |
| 1/24/94 | | 1 | REMOVE 7 LBS. ITEM AT STA. 103, LBL 12 | -7 | 103 | -721 | -12 | +84 | 1109 | 101.0 | 112012 | 0.0 | +19 |
| 1/27/94 | 2 | | ADD 11 LBS. ITEM AT STA. 74, RBL 6 | +11 | 74 | +814 | +6 | +66 | 1120 | 100.7 | 112826 | +0.1 | +85 |

S-351CB (12/96)

Figure 6-4. Sample Weight and Balance Record

## 6-1. WEIGHT AND BALANCE DETERMINATION - PASSENGER CONFIGURATION

1. To determine that the gross weight and longitudinal center of gravity (fore and aft) for a given flight are within limits, proceed as follows:

   a. Obtain the aircraft delivered weight and longitudinal moment from the Weight and Balance Record inserted in the back of the Basic Pilot's Flight Manual.

   b. Determine weights and longitudinal moments of useful load items (CSP-C1-1G, Figure 6-6).

   c. Add the above items (Example I).

| Example I | | |
|---|---|---|
| Items | Weight (Lb.) | Long. Moment (In.-Lb.) |
| Delivered Weight | 1,127 | 113,714 |
| Pilot - Left Hand | 170 | 14,144 |
| Passenger - Right-Hand | 170 | 14,144 |
| Passenger - Center | 170 | 13,600 |
| 1. Sub-Total Gross Weight | 1,637 | 155,602 |
| Fuel - 18 gallons | 108 | 11,718 |
| 2. Gross Weight | 1,745 | 167,320 |

   d. Calculation of Longitudinal CG

      (1) CG (Zero Fuel Weight):

$$\frac{\text{Moment at Zero Fuel Weight}}{\text{Zero Fuel Weight}} = \frac{155{,}602}{1{,}637} = 95.1 \text{ in.}$$

      (2) CG (Gross Weight):

$$\frac{\text{Moment at Gross Weight}}{\text{Gross Weight}} = \frac{167{,}320}{1{,}745} = 95.9 \text{ in.}$$



FAA Approved: 23 Dec 1996
Revised: 23 Mar 2000

## 6-2. PERMISSIBLE LATERAL LOADINGS - PASSENGER CONFIGURATION

1. For the safe operation of this helicopter, it must be flown within the established lateral as well as longitudinal center of gravity limits.

   Note: Lateral center of gravity must be controlled.

2. Combinations of passenger loadings are permissible if gross weight, longitudinal, and lateral center of gravity considerations permit.

3. To determine that the gross weight and lateral center of gravity (left and right) are within limits for a given flight, proceed as follows:

   a. Obtain the aircraft delivered weight and moment from the Weight and Balance Record inserted in the back of the Basic Pilot's Flight Manual.

   b. Determine weight and lateral moment of useful load items (CSP-C1-1G, Fig. 6-5).

   c. Add the above items (Example II).

   d. Plot on Figure 6-1 of the Basic Flight Manual with associated longitudinal CG.

| Example II | | |
|---|---|---|
| Items | Weight (Lb.) | Lat. Moment (In.-Lb.) |
| Delivered Weight | 1,127 | +481 |
| Pilot - Left Hand | 170 | -2,346 |
| Passenger - Right-Hand | 170 | +2,346 |
| Passenger - Center | 170 | +128 |
| 1. Sub-Total Gross Weight | 1,637 | +609 |
| Fuel - 18 gallons | 108 | +1,879* |
| 2. Gross Weight | 1,745 | +2,488 |
| *32.5 Gallon Fuel System Assumed | | |

(1) CG (Zero Fuel Weight):

$$\frac{\text{Moment at Zero Fuel Weight}}{\text{Zero Fuel Weight}} = \frac{+609}{1{,}637} = +0.4 \text{ in.}$$

(2) CG (Gross Weight):

$$\frac{\text{Moment at Gross Weight}}{\text{Gross Weight}} = \frac{+2{,}488}{1{,}745} = +1.4 \text{ in.}$$

Note: The determined lateral CGs of +0.4 inch and +1.4 inch for longitudinal CGs of 95.1 inch and 95.9 inch fall within the established CG limits. (Reference Figure 6-1 of the Basic Flight Manual and Example I.)

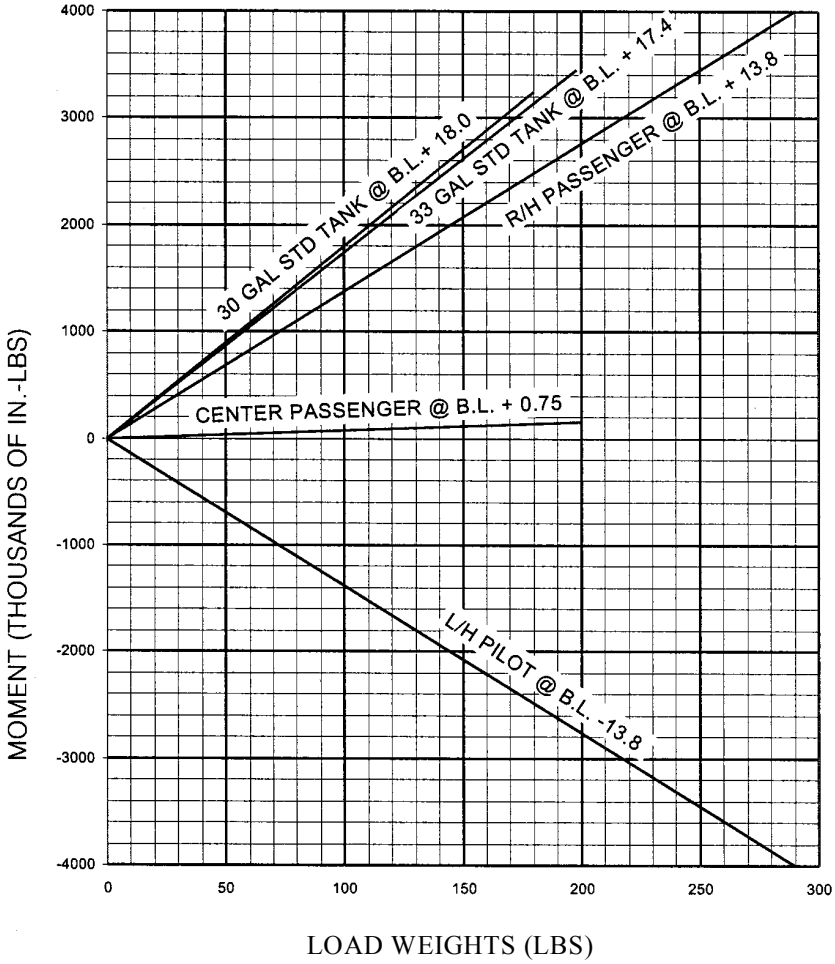



Figure 6-5. Weight and Moment Chart - Lateral

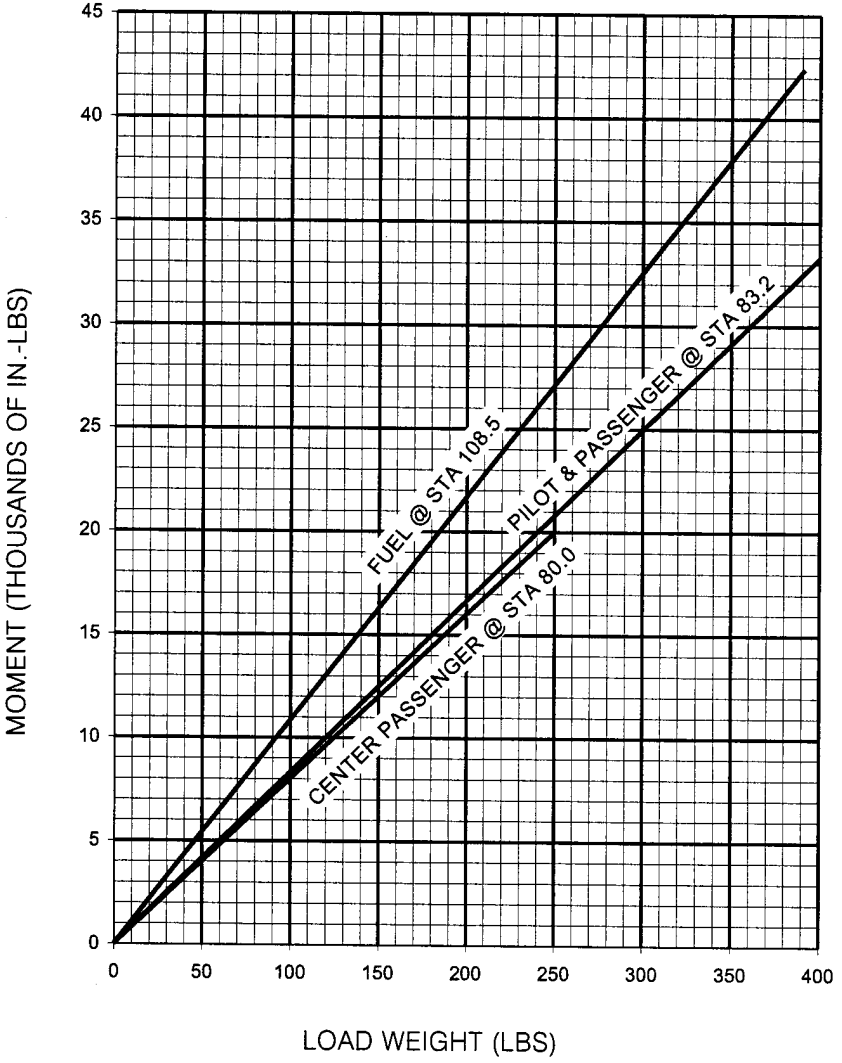



Figure 6-6. Weight and Moment Chart - Longitudinal



FAA Approved: 23 Dec 1996
Revised: 23 Mar 2000

## SECTION VII
Aircraft Handling, Servicing and Maintenance

### 7-1. FUELING HELICOPTER

The helicopter fuel tank is located externally on the aft side of the cabin bulkhead. The tank may be serviced from the filler neck by pressure or gravity method.

NOTE: To insure full fuel, top off first tank again after filling second tank.

Table 7-1. Usable Fuel Quantity

| SYSTEM CAPACITIES | QUANTITY | USABLE QUANTITY |
|---|---|---|
| Standard | 30.0 U.S. gallons | 29.6 U.S. gallons |
| Std. + Aux | 65.2 U.S. gallons | 63.0 U.S. gallons |
| Or depending on aircraft S/N | | |
| Standard | 33.0 U.S. gallons | 32.5 U.S. gallons |
| Std. + Aux | 66.0 U.S. gallons | 64.0 U.S. gallons |

### 7-2. SERVICING FUEL SYSTEM

Draining Fuel System

Accomplish fuel draining with the helicopter as level as possible. There are two methods for the fuel system to be defueled. One is to defuel through the filler port, using a pump. The second method is to open the fuel strainer drain valve and fuel tank sump drain valve. Ensure that the drain valves are closed and secure after defueling.

### 7-3. LANDING GEAR DAMPERS - INSPECTION

Table 7-2. Landing Gear Damper Dimensions

| | Main Tank Only | | 65.2 Gal Aux Fuel System Installed | |
|---|---|---|---|---|
| | LEFT | RIGHT | LEFT | RIGHT |
| AFT | 8.4 | 8.0* | 8.0* | 8.0* |
| FORWARD | 9.1 | 8.7 | 8.7 | 8.7 |

*When dimension is less than 8.0 inches, recheck extension per 100-hour Inspection method (Refer to HMI) before replacing aft damper.

**SECTION VIII**
Additional Operations and Performance Data
Not Affected


FAA Approved: 23 Dec 1996
Revised: 23 Mar 2000