

SECTION 6 WEIGHT & BALANCE/ EQUIPMENT LIST

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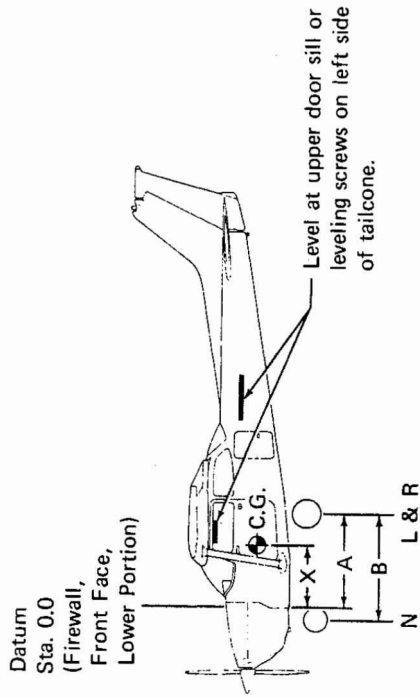
INTRODUCTION

This section describes the procedure for establishing the basic empty weight and moment of the airplane. Sample forms are provided for reference. Procedures for calculating the weight and moment for various operations are also provided. A comprehensive list of all Cessna equipment available for this airplane is included at the back of this section.

It should be noted that specific information regarding the weight, arm, moment and installed equipment list for this airplane can only be found in the appropriate weight and balance records carried in the airplane.

AIRPLANE WEIGHING PROCEDURES

1. Preparation:
 - a. Inflate tires to recommended operating pressures.
 - b. Remove the fuel tank sump quick-drain fittings and fuel selector valve drain plug to drain all fuel.
 - c. Remove oil sump drain plug to drain all oil.
 - d. Move sliding seats to the most forward position.
 - e. Raise flaps to the fully retracted position.
 - f. Place all control surfaces in neutral position.
2. Leveling:
 - a. Place scales under each wheel (minimum scale capacity, 500 pounds nose, 1000 pounds each main).
 - b. Deflate the nose tire and/or lower or raise the nose strut to properly center the bubble in the level (see figure 6-1).
3. Weighing:
 - a. With the airplane level and brakes released, record the weight shown on each scale. Deduct the tare, if any, from each reading.
4. Measuring:
 - a. Obtain measurement A by measuring horizontally (along the airplane center line) from a line stretched between the main wheel centers to a plumb bob dropped from the firewall.
 - b. Obtain measurement B by measuring horizontally and parallel to the airplane center line, from center of nose wheel axle, left side, to a plumb bob dropped from the line between the main wheel centers. Repeat on right side and average the measurements.
5. Using weights from item 3 and measurements from item 4, the



Scale Position	Scale Reading	Tare	Symbol	Net Weight
Left Wheel			L	
Right Wheel			R	
Nose Wheel			N	
Sum of Net Weights (As Weighed)				W

$$X = \frac{ARM = (A) - (N) \times (B) ; X = (\quad) - (\quad) \times (\quad)}{W} \quad) IN.$$

Item	Weight (Lbs.) X C.G. Arm (In.) =	Moment/1000 (Lbs.-In.)
Airplane Weight (From Item 5, page 6-3)		
Add Oil:		
No Oil Filter (6 Qts at 7.5 Lbs/Gal)	-14.0	
With Oil Filter (7 Qts at 7.5 Lbs/Gal)	-14.0	
Add Unusable Fuel:		
Std. Tanks (3 Gal at 6 Lbs/Gal)	46.0	
L.R. Tanks (4 Gal at 6 Lbs/Gal)	46.0	
Equipment Changes		
Airplane Basic Empty Weight		

Figure 6-1. Sample Airplane Weighing

SAMPLE WEIGHT AND BALANCE RECORD

(Continuous History of Changes in Structure or Equipment Affecting Weight and Balance)

[illegible]

Figure 6-2. Sample Weight and Balance Record

airplane weight and C.G. can be determined.

- Basic Empty Weight may be determined by completing figure 6-1.

WEIGHT AND BALANCE

The following information will enable you to operate your Cessna within the prescribed weight and center of gravity limitations. To figure weight and balance, use the Sample Problem, Loading Graph, and Center of Gravity Moment Envelope as follows:

Take the basic empty weight and moment from appropriate weight and balance records carried in your airplane, and enter them in the column titled YOUR AIRPLANE on the Sample Loading Problem.

NOTE

In addition to the basic empty weight and moment noted on these records, the C.G. arm (fuselage station) is also shown, but need not be used on the Sample Loading Problem. The moment which is shown must be divided by 1000 and this value used as the moment/1000 on the loading problem.

Use the Loading Graph to determine the moment/1000 for each additional item to be carried; then list these on the loading problem.

NOTE

Loading Graph information for the pilot, passengers and baggage is based on seats positioned for average occupants and baggage loaded in the center of the baggage areas as shown on the Loading Arrangements diagram. For loadings which may differ from these, the Sample Loading Problem lists fuselage stations for these items to indicate their forward and aft C.G. range limitations (seat travel and baggage area limitation). Additional moment calculations, based on the actual weight and C.G. arm (fuselage station) of the item being loaded, must be made if the position of the load is different from that shown on the Loading Graph.

Total the weights and moments/1000 and plot these values on the Center of Gravity Moment Envelope to determine whether the point falls within the envelope, and if the loading is acceptable.

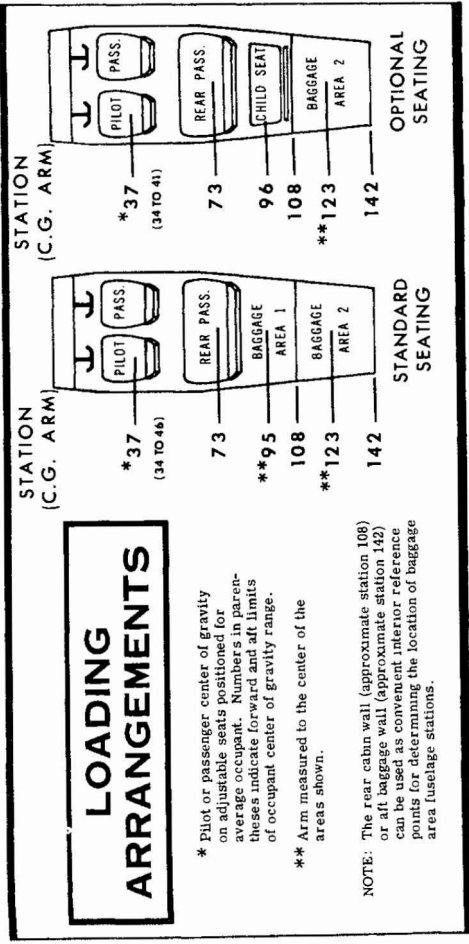
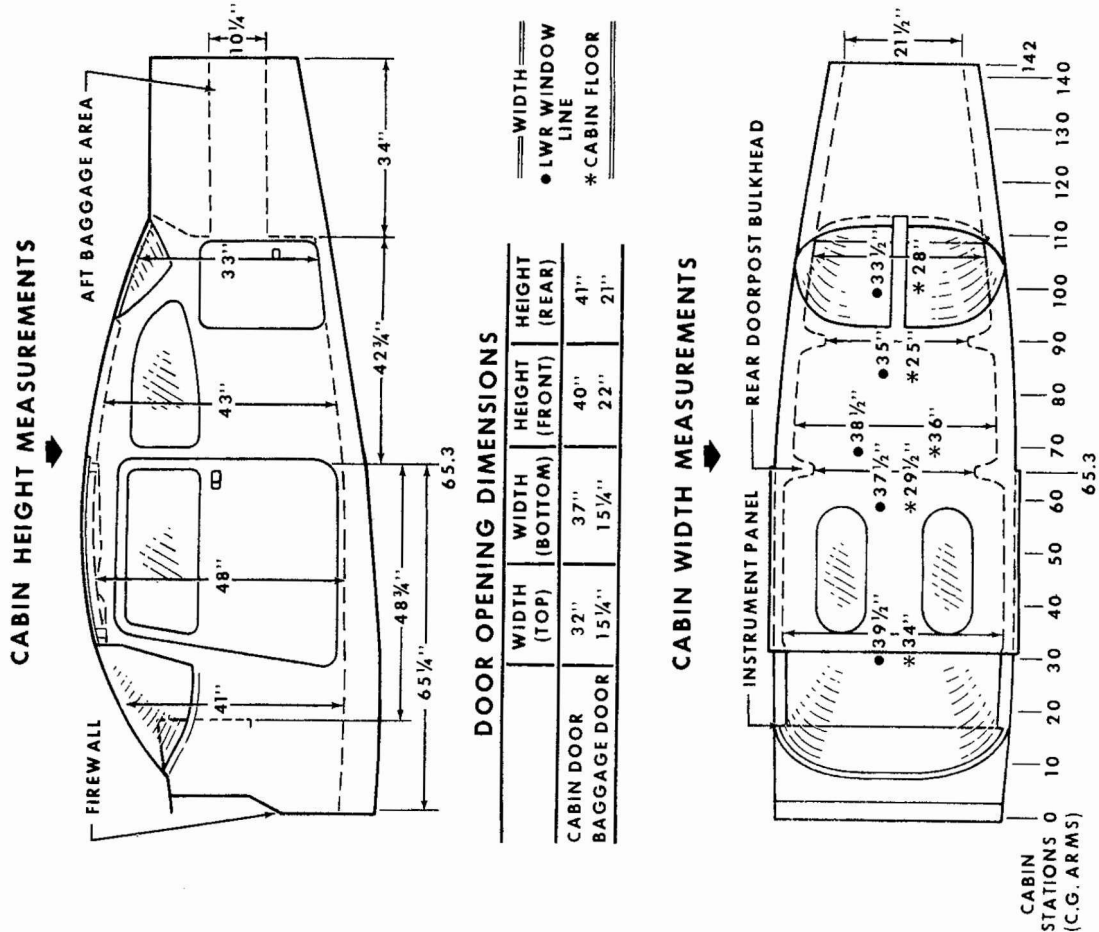


Figure 6-3. Loading Arrangements



SAMPLE LOADING PROBLEM				YOUR AIRPLANE			
1. Basic Empty Weight (Use the data pertaining to your airplane as it is presently equipped. Includes unusable fuel and full oil)	2. Usable Fuel (At 6 Lbs./Gal.) Standard Tanks (40 Gal. Maximum)	3. Pilot and Front Passenger (Station 34 to 46)	4. Rear Passengers	5. * Baggage Area 1 or Passenger on Child's Seat (Station 82 to 108) 120 Lbs. Max.	6. * Baggage Area 2 (Station 108 to 142) 50 Lbs. Max.	7. TOTAL WEIGHT AND MOMENT	8. Locate this point (2300 at 103.2) on the Center of Gravity Moment Envelope, and since this point falls within the envelope, the loading is acceptable.
1454	240	340	170	96	103.2	2300	
Weight (lbs.)	Weight (lb. - ins. Moment /1000)	Weight (lbs.)	Weight (lb. - ins. Moment /1000)	Weight (lbs.)	Weight (lb. - ins. Moment /1000)	Weight (lbs.)	Weight (lb. - ins. Moment /1000)

NOTE

* The maximum allowable combined weight capacity for baggage areas 1 and 2 is 120 lbs.

Figure 6-5. Sample Loading Problem

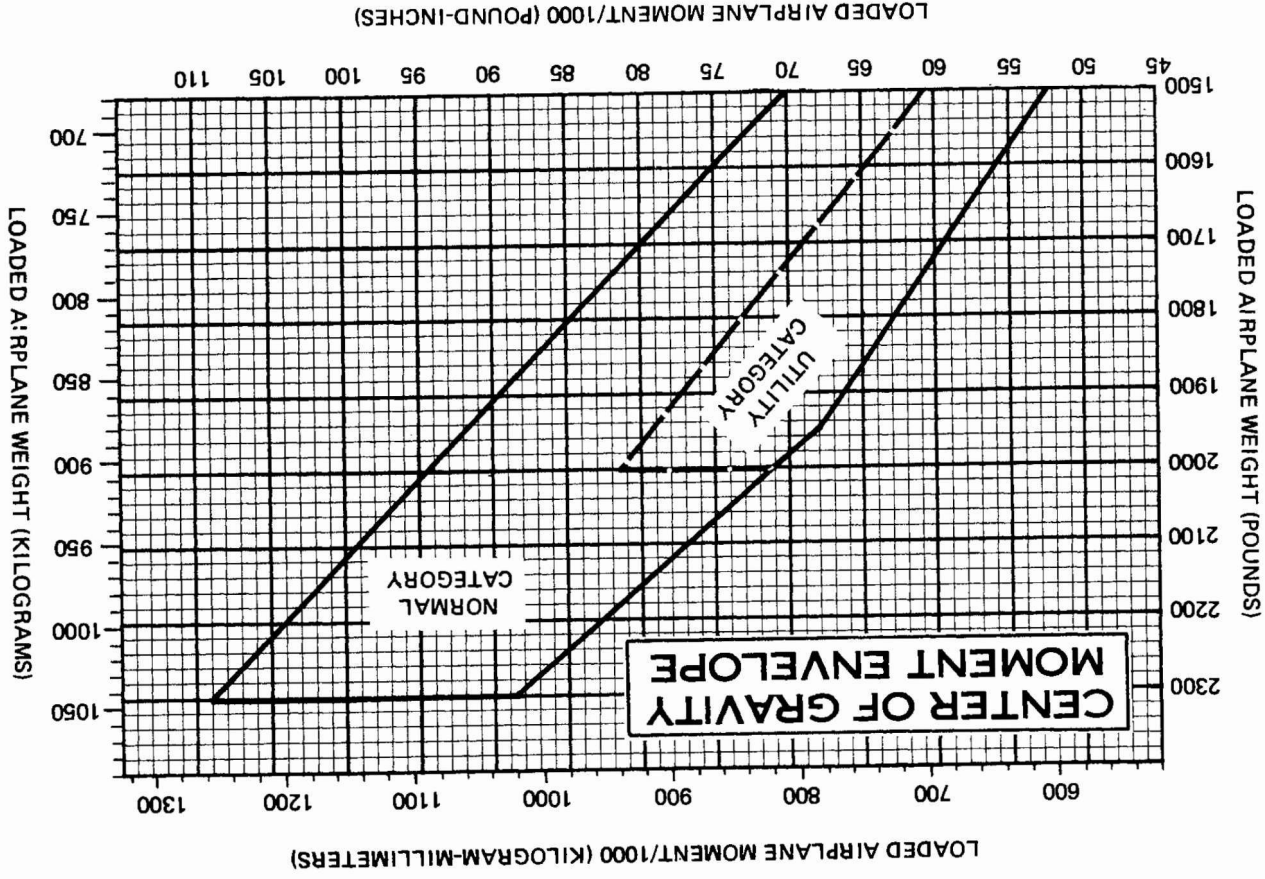


Figure 6-7. Center of Gravity Moment Envelope

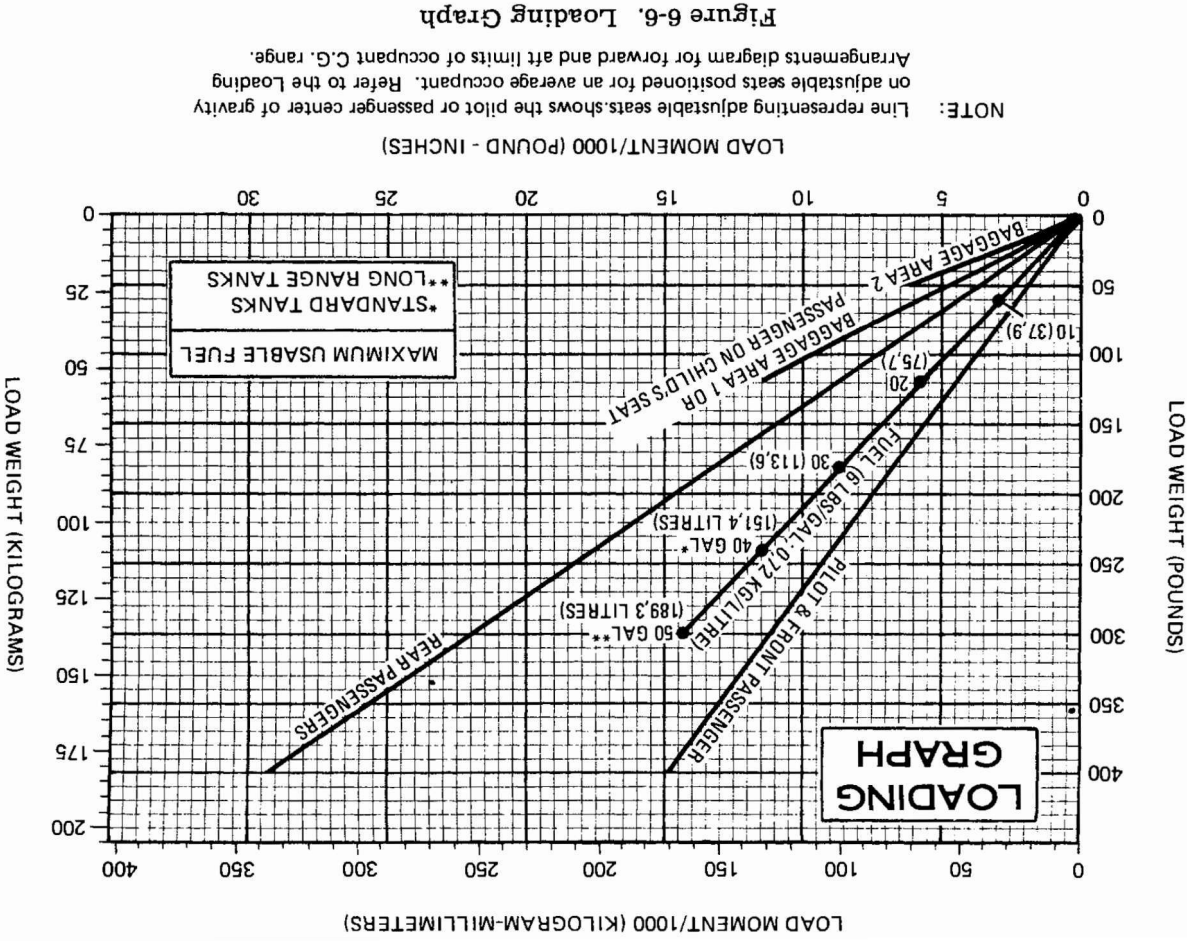


Figure 6-6. Loading Graph

NOTE: Line representing adjustable seats shows the pilot or passenger center of gravity on adjustable seats positioned for an average occupant. Refer to the Loading Arrangements diagram for forward and aft limits of occupant C.G. range.

EQUIPMENT LIST

The following equipment list is a comprehensive list of all Cessna equipment available for this airplane. A separate equipment list of items installed in your specific airplane is provided in your aircraft file. The following list and the specific list for your airplane have a similar order of listing.

This equipment list provides the following information:

An **item number** gives the identification number for the item. Each number is prefixed with a letter which identifies the **descriptive** grouping (example: A. Powerplant & Accessories) under which it is listed. Suffix letters identify the equipment as a required item, a standard item or an optional item. Suffix letters are as follows:

- R = required items of equipment for FAA certification
- S = standard equipment items
- O = optional equipment items replacing required or standard items
- A = optional equipment items which are in addition to required or standard items

A **reference drawing** column provides the drawing number for the item.

NOTE

If additional equipment is to be installed, it must be done in accordance with the reference drawing, accessory kit instructions, or a separate FAA approval.

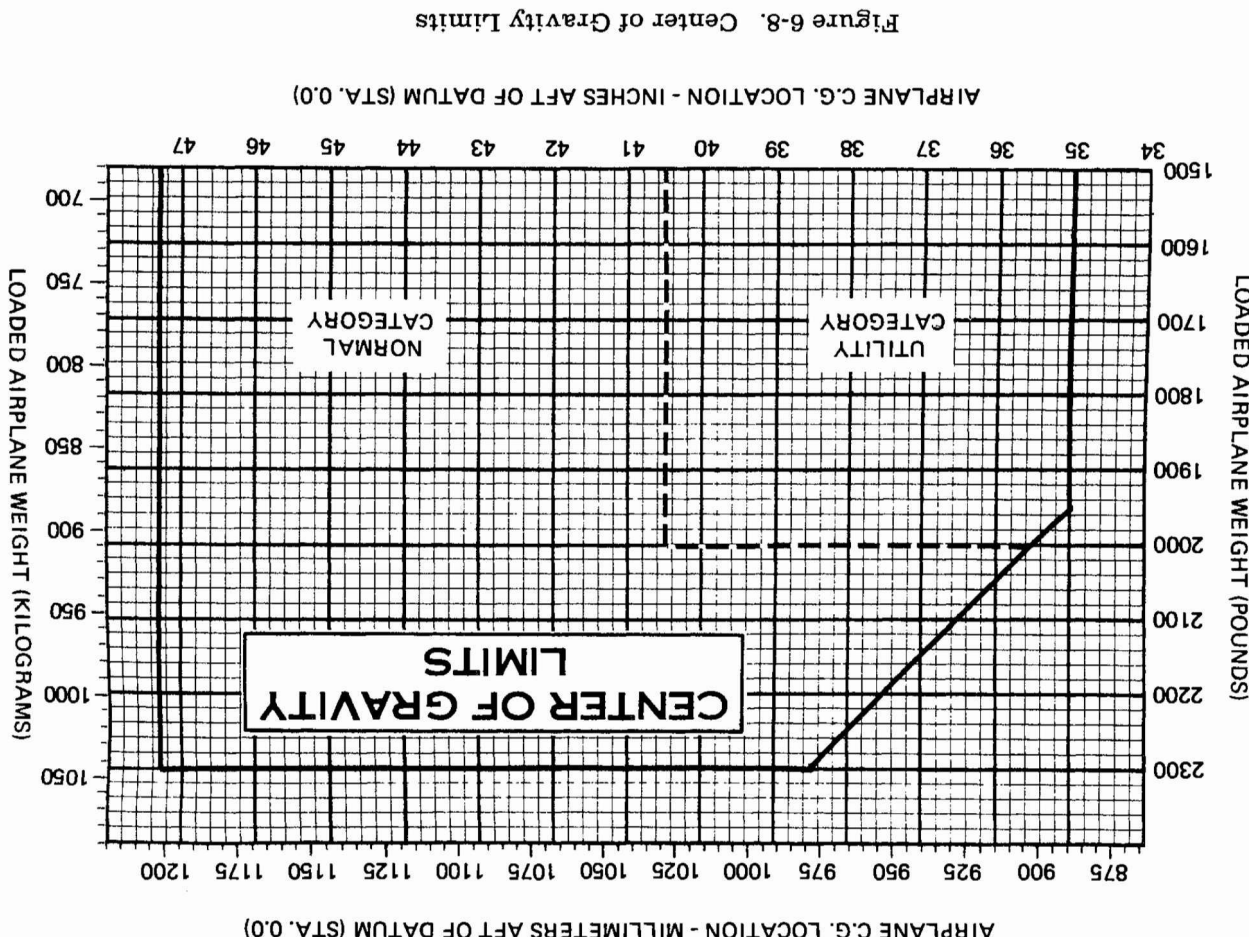
Columns showing **weight (in pounds)** and **arm (in inches)** provide the weight and center of gravity location for the equipment.

NOTE

Unless otherwise indicated, true values (not net change values) for the weight and arm are shown. Positive arms are distances aft of the airplane datum; negative arms are distances forward of the datum.

NOTE

Asterisks (*) after the item weight and arm indicate complete assembly installations. Some major components of the assembly are listed on the lines immediately following. The summation of these major components does not necessarily equal the complete assembly installation.



ITEM NO	EQUIPMENT LIST DESCRIPTION	REF DRAWING	WT LBS	ARM INS
	J15-A INTERCONNECT SYSTEM (STOWED) COWL ASSY, FLOATPLANE (NET CHG)	0560012 0552162	0.4 NEGL	95.11

SECTION 7

AIRPLANE & SYSTEMS DESCRIPTIONS

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