

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 or cargo is based on seats positioned for average occupants and baggage or cargo loaded in the center of these 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 limitation (seat travel or baggage/cargo 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.

When a cargo pack is installed, it is necessary to determine the C.G. arm and calculate the moment/1000 of items carried in the pack. The arm for any location in the pack can be determined from the diagram on figure 6-5. Multiply the weight of the item by the C.G. arm, then divide by 1000 to get the moment/1000. The maximum loading capacity of the pack is 300 pounds.

NOTE

Each loading should be figured in accordance with the above paragraphs. When the loading is light (such as pilot and copilot, and no rear seats or cargo), be sure to check the forward balance limits. When loading is heavy (near gross weight), be sure to check the aft balance limits.

To avoid time consuming delays in cargo and/or passenger shifting, plan your load so that the heaviest cargo and/or passengers are in the forward part of the airplane or cargo pack, and the lightest in the rear. Always plan to have any vacant space at the rear of the airplane or pack. For example, do not have passengers occupy the aft seat unless the front and center seats are to be occupied.

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.

LOADING ARRANGEMENTS

*Pilot or passenger center of gravity on adjustable seats positioned for average occupant. Numbers in parentheses indicate forward and aft limits of occupant center of gravity range.

**Arms measured to the center of the areas shown.

- NOTES: 1. The usable fuel C.G. arm is located at station 46.5.
2. The aft baggage wall (approximate station 145) can be used as a convenient interior reference point for determining the location of baggage area fuselage stations.

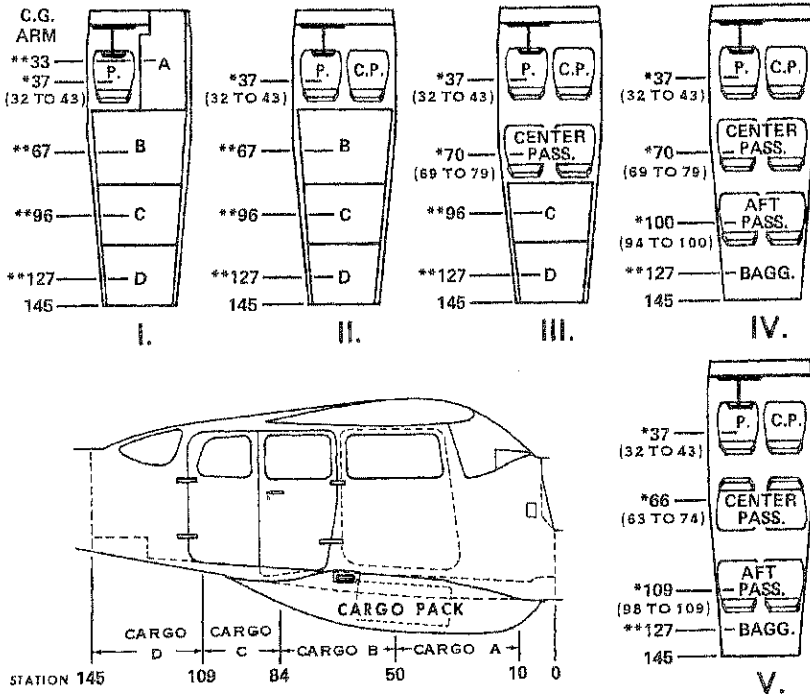


Figure 6-3. Loading Arrangements

Since your Cessna is capable of carrying large amounts of cargo, it will be necessary to properly secure this load before flight. Cargo tie-down blocks which fasten to the seat rails, and "D" rings which fasten to the aft portion of the cabin floor (sta. 124), are available from any Cessna Dealer for airplanes with normal seating and airplanes with club seating. With normal seating, twelve tie-down blocks and three "D" rings may be used. On airplanes equipped with club seating, eight of the twelve tie-down blocks used are designed for use on the larger seat rails installed for the aft facing seats. Care must be taken to ensure that the proper sized tie-down blocks are used. If more tie-down points are needed, the seat belt attaching points, as well as shoulder harness attaching points, may be used. Rope, strap, or cable used for tie-down should be rated at a minimum of ten times the load weight capacity of the tie-down fittings used.

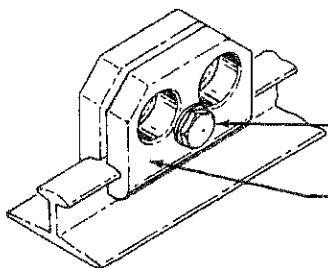
The following table shows the maximum allowable cargo weight for each type of attachment:

ITEM	LOCATION	*MAXIMUM LOAD (LBS.)
Seat Rail Tie-Down Assy	On Seat Rail Section Without Lock Pin Holes	200
Seat Rail Tie-Down Assy	On Seat Rail Section With Lock Pin Holes	100
"D" Rings	Floor only	60
Seat Belt Attachment	Floor or Side-Wall	200
Shoulder Strap	Cabin Top	175

*Rated load per attachment (Cargo Item Wt. ÷ No. Tie-Downs). A sufficient number of attachments to restrain the cargo from shifting should be used in addition to load requirements

FOR EXAMPLE:

A 400# load would require a minimum of four (4) tie-downs rated at 100# each.



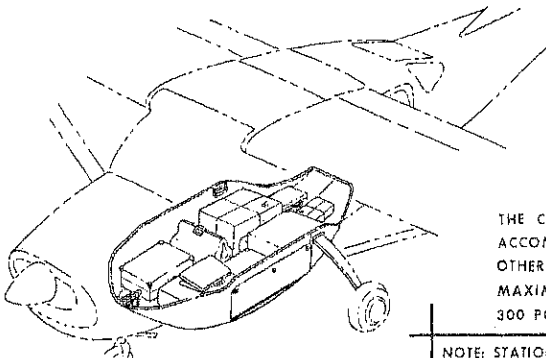
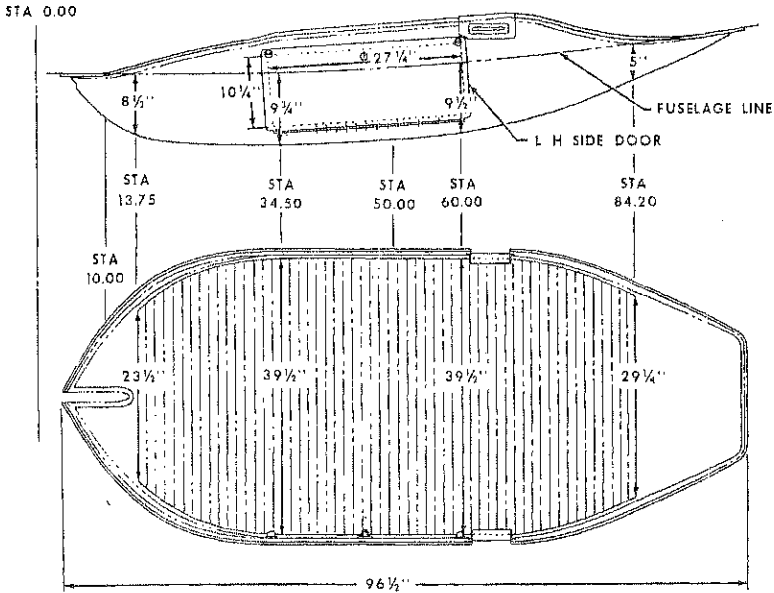
MUST BE TIGHTENED TO A MINIMUM OF 50 INCH POUNDS.

SEAT RAIL TIE-DOWN ASSEMBLY (TWO SIZES REQUIRED FOR CLUB SEATING)

Figure 6-4. Cargo Loading

SECTION 6
WEIGHT & BALANCE/
EQUIPMENT LIST

CESSNA
MODEL U208G



THE CARGO PACK WAS DESIGNED TO ACCOMMODATE THREE "TWO-SUITERS" PLUS OTHER SMALL MISCELLANEOUS ARTICLES. MAXIMUM LOADING FOR CARGO PACK IS 300 POUNDS.

NOTE: STATION LOCATION AND C.G. ARM ARE IDENTICAL

Figure 6-5. Cargo Pack

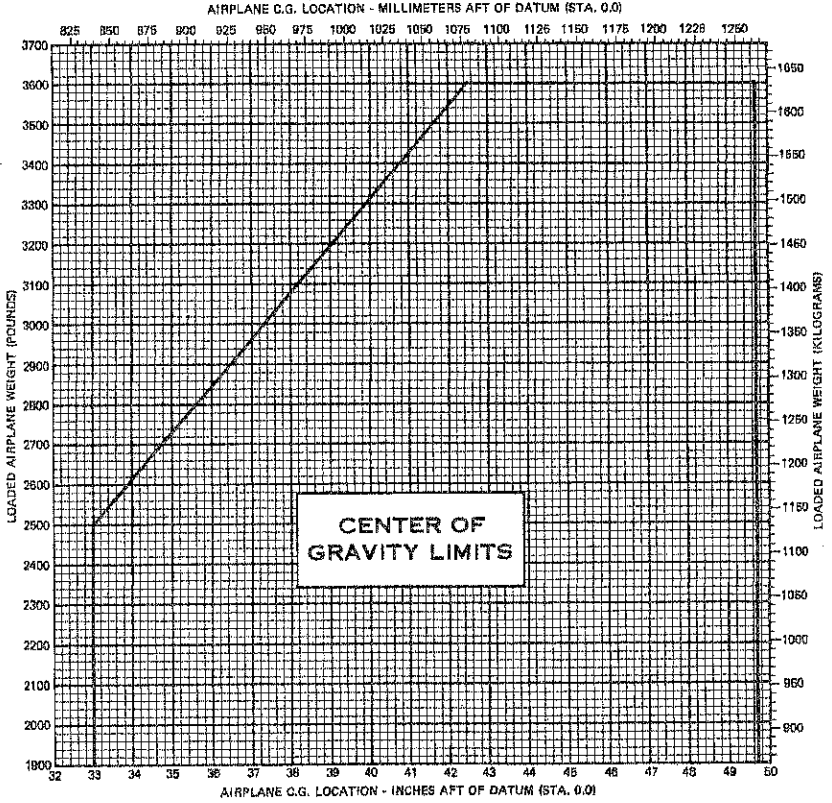


Figure 6-10. Center of Gravity Limits

SECTION 6
WEIGHT & BALANCE/
EQUIPMENT LIST

CESSNA
MODEL U206G

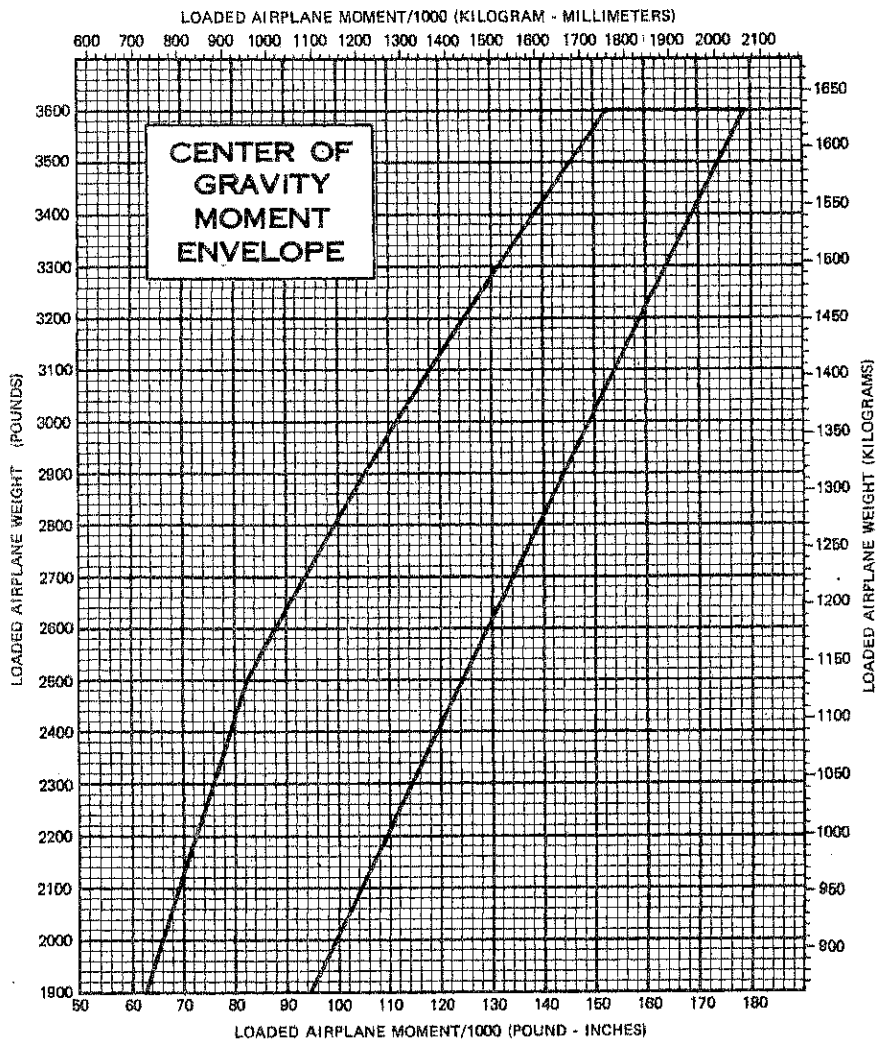
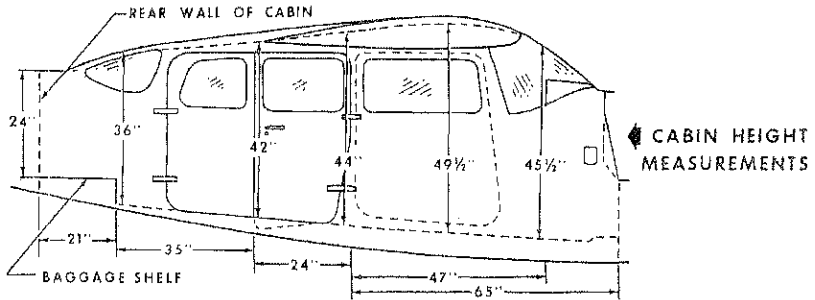


Figure 6-9. Center of Gravity Moment Envelope



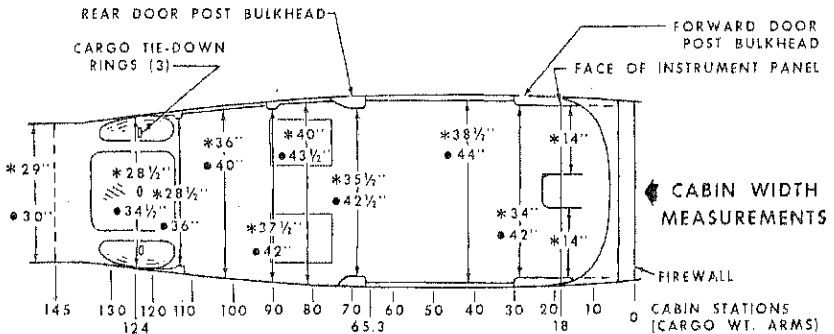
..... WIDTH

* CABIN FLOOR

● LWR. WINDOW LINE

DOOR OPENING DIMENSIONS

	WIDTH (TOP)	WIDTH (BOTTOM)	HEIGHT (FRONT)	HEIGHT (REAR)
CABIN DOOR	32 1/2"	37"	41"	39"
CARGO DOORS	43"	40"	39 1/4"	37 1/2"



NOTES:

1. Use the forward face of the rear door post as a reference point to locate C. G. arms. For example, a box with its center of weight located 13 inches aft of the rear door post would have a C. G. arm of (85.3 + 13.0 = 98.3) 98.3 inches.
2. Maximum allowable floor loading: 200 pounds-square foot. However, when items with small or sharp support areas are carried, the installation of a 1/4" plywood floor is highly recommended to protect the aircraft structure.

Figure 6-6. Internal Cabin Dimensions

SECTION 6
WEIGHT & BALANCE/
EQUIPMENT LIST

CESSNA
MODEL U206G

SAMPLE LOADING PROBLEM	SAMPLE AIRPLANE		YOUR AIRPLANE	
	Weight (lbs.)	Moment (lb.-ins. /1000)	Weight (lbs.)	Moment (lb.-ins. /1000)
1. Basic Empty Weight (Use the data pertaining to your airplane as it is presently equipped. Includes unusable fuel and full oil)	2019	76.4		
2. Usable Fuel (At 6 Lbs./Gal.) Standard Tanks (88 Gal. Max.)	528	24.6		
Reduced Fuel (65 Gal.)				
3. Pilot and Copilot (Sta. 32 to 43)	340	12.6		
4. Center Passengers Standard Seating (Sta. 69 to 79)	340	23.8		
Club Seating (Sta. 63 to 74)				
Aft Passengers Standard Seating (Sta. 94 to 100)	340	34.0		
Club Seating (Sta. 98 to 109)				
Baggage IV or V (Sta. 109 to 145, 180 Lbs. Max.)	45	5.7		
5. *Cargo "A" (Sta. 10 to 50)				
*Cargo "B" (Sta. 50 to 84)				
*Cargo "C" (Sta. 84 to 109)				
*Cargo "D" (Sta. 109 to 145)				
6. Cargo Pack (Sta. 10 to 84; 300 Lbs. Max.) . . .				
7. RAMP WEIGHT AND MOMENT	3612	177.1		
8. Fuel allowance for engine start, taxi, and runup	-12	-6		
9. TAKEOFF WEIGHT AND MOMENT (Subtract Step 8 from Step 7)	3600	176.5		
10. Locate this point (3600 at 176.5) on the Center of Gravity Moment Envelope, and since this point falls within the envelope, the loading is acceptable. *Maximum allowable cargo loads will be determined by the type and number of tie-downs used, as well as by the airplane weight and C.G. limitations. Floor loading must not exceed 200 lbs. per square foot.				

Figure 6-7. Sample Loading Problem