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Many portions were omitted for brevity.

## 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 items 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 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.

## BAGGAGE TIE-DOWN

A nylon baggage net having six tie-down straps is provided as standard equipment to secure baggage in the area aft of the rear seat (Baggage A) and over the wheel well (Baggage B). Eight eyebolts serve as

attaching points for the net. Two eyebolts for the forward tie-down straps are mounted on the cabin floor near each sidewall just forward of the baggage door approximately at station 92; two eyebolts are installed on the cabin floor slightly inboard of each sidewall just forward of the wheel well approximately at station 109; and two eyebolts are mounted on the upper forward surface of the wheel well slightly inboard of each sidewall approximately at station 109. The two aft eyebolts are installed above the aft portion of the wheel well and slightly inboard of each sidewall approximately at station 124.

When the cabin floor (Baggage A) only is utilized for baggage, the four eyebolts located on the cabin floor may be used, or the two forward eyebolts on the cabin floor and the two eyebolts on the upper forward surface of the wheel well may be used. When the upper surface of the wheel well (Baggage B) only contains baggage, the two eyebolts on the upper forward surface of the wheel well and the two aft eyebolts above the aft portion of the wheel well should be used. When there is baggage in both areas, the two forward eyebolts on the cabin floor, the two eyebolts on the upper forward surface of the wheel well, and the two aft eyebolts above the aft portion of the wheel well should be utilized.

# LOADING ARRANGEMENTS

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

\*\* Baggage area center of gravity.

NOTE: The aft baggage wall (approximate station 134) can be used as a convenient interior reference point for determining the location of baggage area fuselage stations.

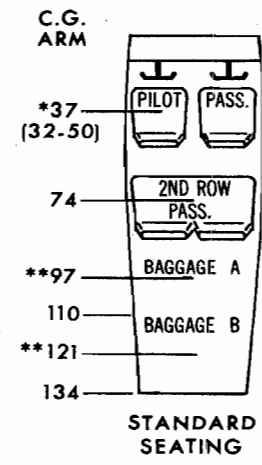
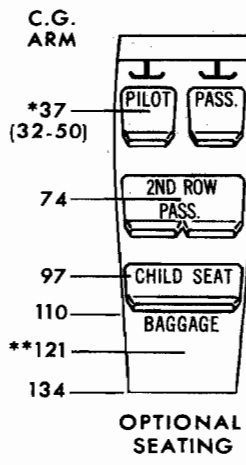
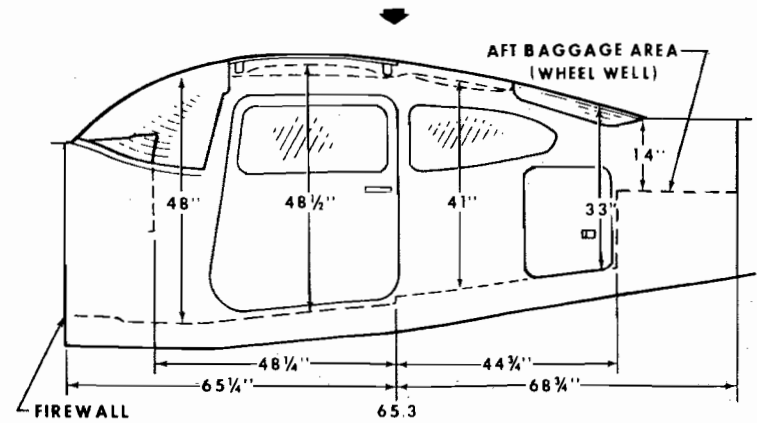


Figure 6-3. Loading Arrangements

**CABIN HEIGHT MEASUREMENTS**



**DOOR OPENING DIMENSIONS**

	WIDTH (TOP)	WIDTH (BOTTOM)	HEIGHT (FRONT)	HEIGHT (REAR)	
CABIN DOOR	32"	36 1/2"	41"	38 1/2"	● LWR WINDOW LINE
BAGGAGE DOOR	15 1/4"	15 1/4"	22"	20 1/2"	* CABIN FLOOR

**CABIN WIDTH MEASUREMENTS**

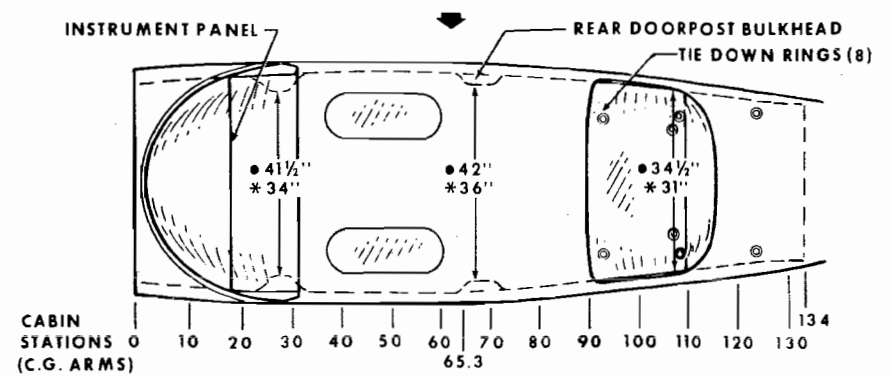


Figure 6-4. Internal Cabin Dimensions

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) . . . . .	1850	62.0	1951	69.82
2. Usable Fuel (At 6 Lbs./Gal.)				
Standard Tanks (88 Gal. Maximum) . . . . .				
Reduced Fuel (65 Gal.) . . . . .	390	18.1		
3. Pilot and Front Passenger (Sta. 32 to 50) . . . . .	340	12.6		
4. Second Row Passengers . . . . .	340	25.2		
5. Baggage (Area "A") or Passenger on Child's Seat (Station 82 to 110) 120 Lbs. Maximum . . . . .	120	11.6		
6. Baggage - Aft (Area "B") (Station 110 to 134) 80 Lbs. Maximum . . . . .	72	8.7		
7. RAMP WEIGHT AND MOMENT	3112	138.2		
8. Fuel allowance for engine start, taxi and runup	-12	-.6		
9. TAKEOFF WEIGHT AND MOMENT (Subtract step 8 from step 7)	3100	137.6		
10. Locate this point (3100 at 137.6) on the Center of Gravity Moment Envelope, and since this point falls within the envelope, the loading is acceptable.				

Figure 6-5. Sample Loading Problem

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WEIGHT & BALANCE/  
EQUIPMENT LIST  
  
CESSNA  
MODEL TR182

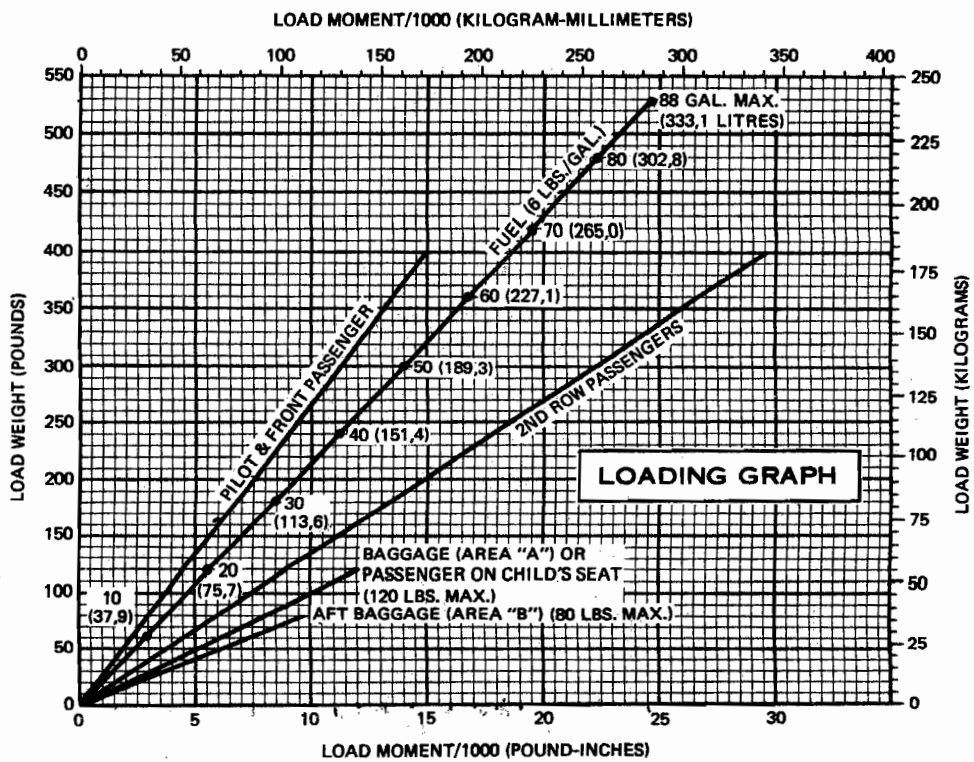
Wt & as of 10/20/05

Empty Weight = 1950.6 lbs.

Useful Load = 1149 lbs.

Empty A/C Mom = 69,818 x 1000

Empty A/C CG = 35.79"



NOTES: Line representing adjustable seats shows pilot and front seat 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.

Figure 6-6. Loading Graph

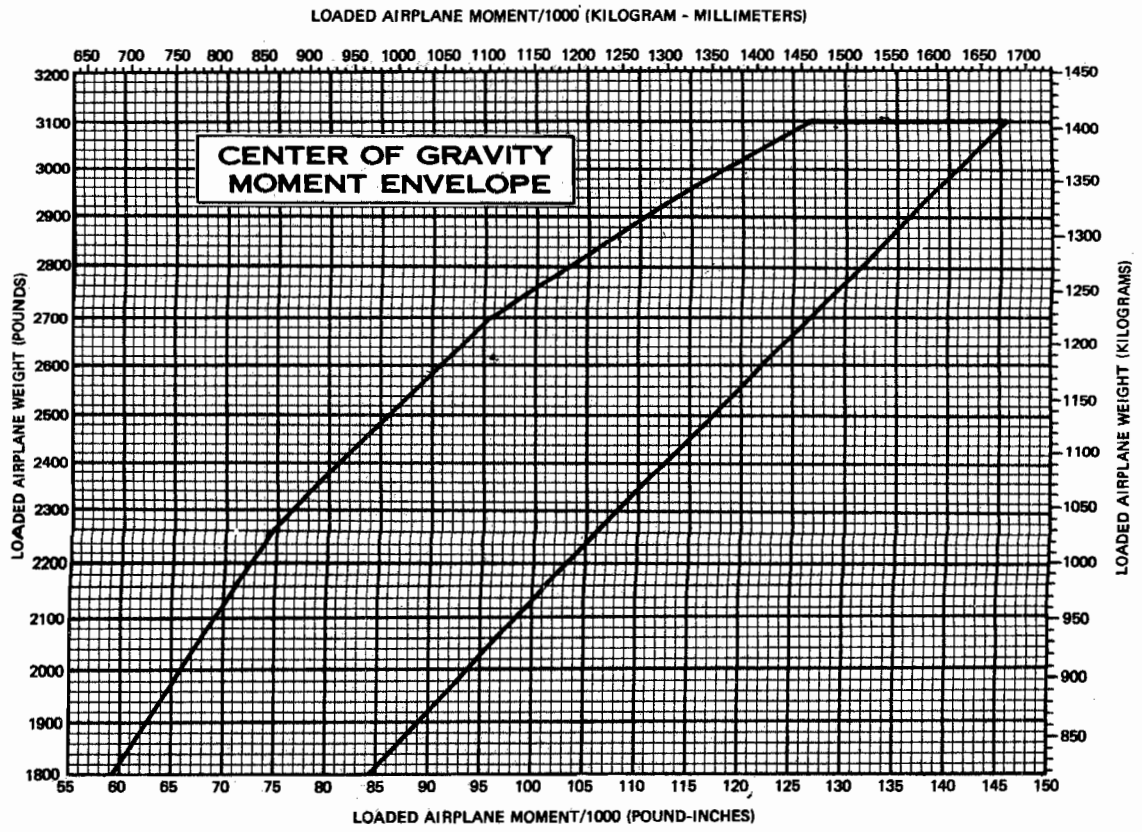
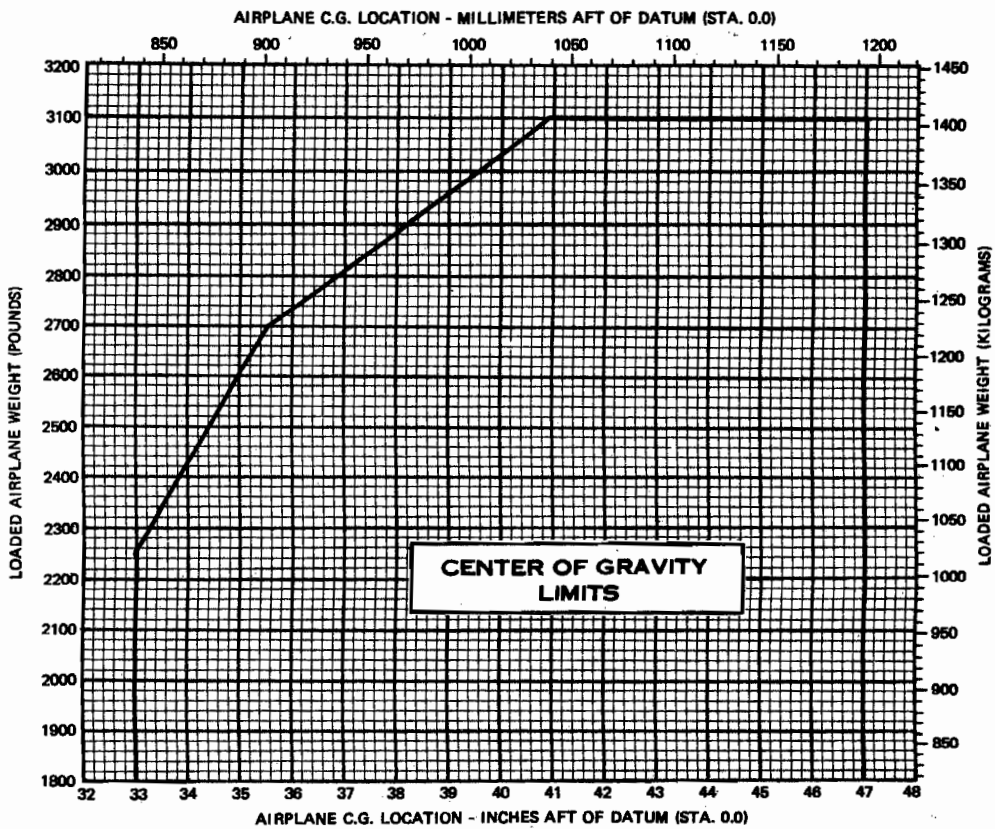


Figure 6-7. Center of Gravity Moment Envelope

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Figure 6-8. Center of Gravity Limits