WEIGHT AND BALANCE.

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

Take the licensed Empty Weight and Moment/1000 from the Weight and Balance Data sheet, plus any changes noted on forms FAA-337 carried in your airplane, and write them down in the proper columns. Using the Loading Graph, determine the moment/1000 of each item to be carried. Total the weights and moments/1000 and use the Center of Gravity Moment Envelope to determine whether the point falls within the envelope, and if the loading is acceptable.

2015 Empty
1752.8
moment 63308.32
Arm 36.12
1047.2 useable

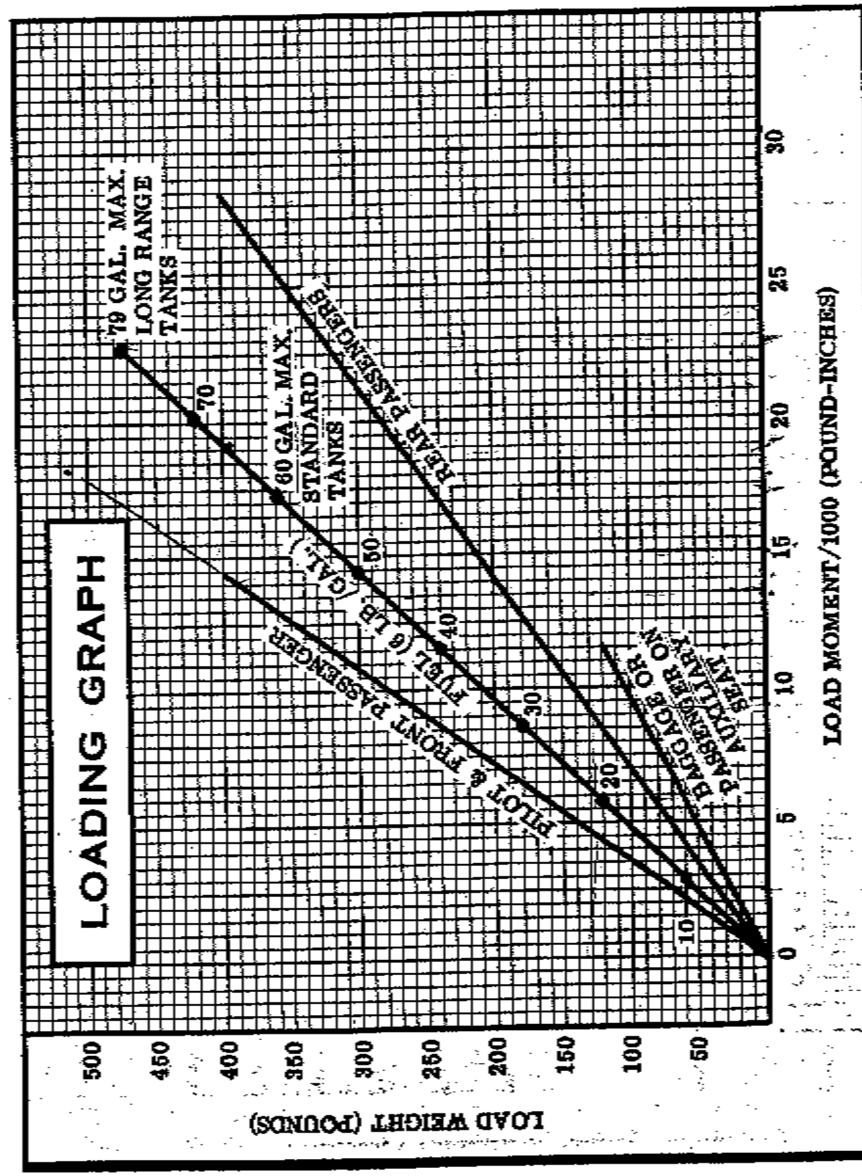
Empty 87
1963.6
Mom 63559.5
63.4

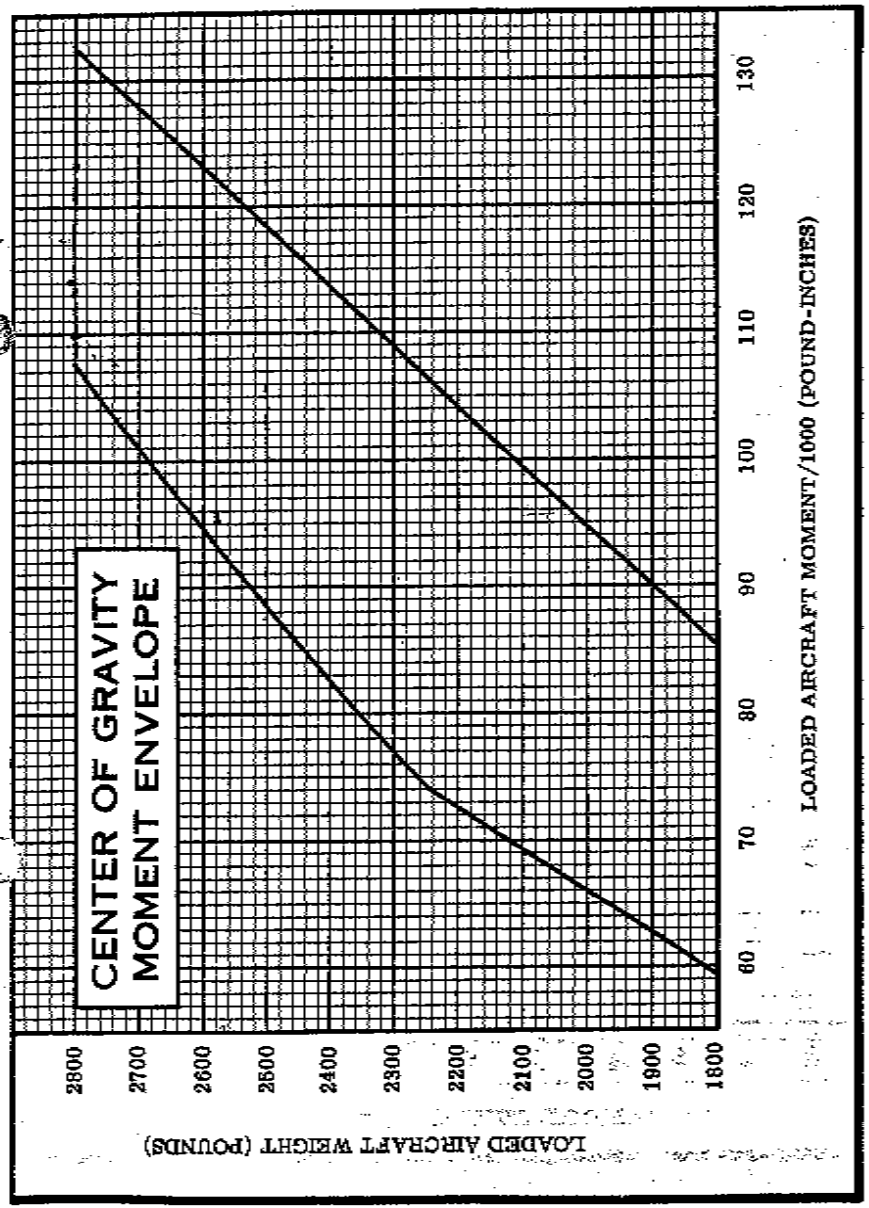
1765

SAMPLE LOADING PROBLEM

SAMPLE LOADING PROBLEM	SAMPLE AIRPLANE Weight (lbs.)	SAMPLE AIRPLANE Moment (lb. - ins. /1000)	YOUR AIRPLANE Weight (lbs.)	YOUR AIRPLANE Moment (lb. - ins. /1000)
1. Licensed Empty Weight (Sample Airplane)	1672	59.4		
2. Oil (12 qts. - Full oil may be assumed for all flights.)	22	-0.3	22	-0.3
3. Pilot and Front Passenger	340	12.2		
4. Fuel (Standard-60 Gal at 6#/Gal)	360	17.3		
X Fuel (Long Range-79 Gal at 6#/Gal) ✓				
5. Rear Passengers	340	24.1		
6. Baggage (or Passenger on Auxiliary Seat)	66	6.4		
7. TOTAL WEIGHT AND MOMENT	2800	119.1		

8. Locate this point (2800 at 119.1) on the center of gravity moment envelope, and since this point falls within the envelope the loading is acceptable.





Section IV

CARE OF THE AIRPLANE

If your airplane is to retain that new-plane performance and dependability, certain inspection and maintenance requirements must be followed. It is wise to follow a planned schedule of lubrication and preventative maintenance based on climatic and flying conditions encountered in your locality.

Keep in touch with your Cessna Dealer, and take advantage of his knowledge and experience. He knows your airplane and how to maintain it. He will remind you when lubrications and oil changes are necessary, and about other seasonal and periodic services.

GROUND HANDLING.

The airplane is most easily and safely maneuvered during ground handling by a tow-bar attached to the nosewheel.

NOTE

When using the tow-bar, do not exceed the nosewheel turning angle of 29° either side of center.

MOORING YOUR AIRPLANE.

Proper tie-down procedure is your best precaution against damage to your parked airplane by gusty or strong winds. To tie down your airplane securely, proceed as follows:

(1) Set the parking brake and install the control wheel lock.
(2) Install a surface control lock over the fin and rudder.
(3) Tie sufficiently strong ropes or chains (700 pounds tensile strength) to the wing, tail, and nose tie-down fittings and secure each rope to a ramp tie-down.
(4) Install a pitot tube cover.

STALL SPEED, POWER OFF

Gross Weight 2800 LBS.	ANGLE OF BANK		
CONFIGURATION	0°	30°	60°
FLAPS UP	64	69	91
FLAPS 20°	57	61	81
FLAPS 40°	55	59	78

SPEEDS ARE MPH, CAS

Figure 5-2.

TAKE-OFF DATA

TAKE-OFF DISTANCE WITH 20° FLAPS FROM HARD SURFACE RUNWAY.

GROSS WEIGHT LBS.	IAS @ 50' MPH	HEAD WIND MPH	AT SEA LEVEL & 59°F. GROUND RUN	AT SEA LEVEL & 59°F. TOTAL TO CLEAR 50' OBS	AT 2500 FT. & 50°F. GROUND RUN	AT 2500 FT. & 50°F. TOTAL TO CLEAR 50' OBS	AT 5000 FT. & 41°F. GROUND RUN	AT 5000 FT. & 41°F. TOTAL TO CLEAR 50' OBS	AT 7500 FT. & 32° F. GROUND RUN	AT 7500 FT. & 32° F. TOTAL TO CLEAR 50' OBS
2800	61	0	825	1205	745	1420	895	1695	1095	2090
		15	380	830	460	990	565	1200	700	1505
		30	190	515	240	630	305	780	380	1000
2400	57	0	440	895	525	1035	630	1210	785	1460
		15	255	600	310	705	380	835	470	1020
		30	115	355	150	425	190	515	245	645
2000	52	0	295	655	350	745	415	855	500	1005
		15	160	425	195	490	235	670	290	680
		30	65	235	80	280	105	335	135	405

NOTES: 1. Increase distances 10% for each 25°F above standard temperature for particular altitude.
2. For operation on a dry, grass runway, increase distances (both "ground run" and "total to clear 50 ft. obstacle") by 7% of the "total to clear 50 ft. obstacle" figure.

MAXIMUM RATE-OF-CLIMB DATA

GROSS WEIGHT LBS.	AT SEA LEVEL & 59°F. IAS MPH	AT SEA LEVEL & 59°F. RATE OF CLIMB FT/MIN	AT SEA LEVEL & 59°F. GAL. OF FUEL USED	AT SEA LEVEL & 59°F. IAS MPH	AT 5000 FT. & 41°F. RATE OF CLIMB FT/MIN	AT 5000 FT. & 41°F. From SL FUEL USED	AT 10,000 FT. & 23°F. IAS MPH	AT 10,000 FT. & 23°F. RATE OF CLIMB FT/MIN	AT 10,000 FT. & 23°F. From SL FUEL USED	AT 15,000 FT. & 5°F. IAS MPH	AT 15,000 FT. & 5°F. RATE OF CLIMB FT/MIN	AT 15,000 FT. & 5°F. From SL FUEL USED	AT 20,000 FT. & -12°F. IAS MPH	AT 20,000 FT. & -12°F. RATE OF CLIMB FT/MIN	AT 20,000 FT. & -12°F. From SL FUEL USED
2800	88	980	1.6	86	745	3.7	84	510	6.3	82	285	10.2	80	50	20.5
2400	86	1295	1.5	84	1005	3.1	82	720	5.0	79	435	7.6	77	150	13.9
2000	84	1710	1.5	82	1350	2.7	79	995	4.1	76	640	5.9	74	290	9.3

NOTES: 1. Flaps up, full throttle, 2600 RPM, mixture leaned for smooth operation above 5000 ft.
2. Fuel used includes warm-up and take-off allowance.
3. For hot weather, decrease rate of climb 30 ft./min. for each 10°F above standard day temperature for particular altitude.

Figure 5-3.