

MANEUVERS - UTILITY CATEGORY.

This airplane is not designed for purely aerobatic flight. However, in the acquisition of various certificates such as commercial pilot, instrument pilot and flight instructor, certain maneuvers are required by the FAA. All of these maneuvers are permitted in this airplane when operated in the utility category. In connection with the utility category, the following gross weight and flight load factors apply, with maximum entry speeds for maneuvers as shown:

Gross Weight	2000 lbs
Flight Load Factor	
Flaps Up	+4.4 -1.76
Flaps Down	+3.5

In the utility category, the baggage compartment and rear seat must not be occupied. No aerobatic maneuvers are approved except those listed below:

<u>MANEUVER</u>	<u>MAXIMUM ENTRY SPEED*</u>
Chandelles	122 mph (106 knots)
Lazy Eights	122 mph (106 knots)
Steep Turns	122 mph (106 knots)
Spins - <i>NOT ALLOWED w/ Hartman STOL</i>	Slow Deceleration
Stalls (Except Whip Stalls)	Slow Deceleration

*Higher speeds can be used if abrupt use of the controls is avoided.

Aerobatics that may impose high loads should not be attempted. The important thing to bear in mind in flight maneuvers is that the airplane is clean in aerodynamic design and will build up speed quickly with the nose down. Proper speed control is an essential requirement for execution of any maneuver, and care should always be exercised to avoid excessive speed which in turn can impose excessive loads. In the execution of all maneuvers, avoid abrupt use of controls.

Some engine power and a slightly greater rate of deceleration than is used on stalls may be required to obtain a spin entry. Full pro-spin control deflections must be held until recovery to maintain the spin. During extended spins of two to three turns or more, the spin will tend to change into a spiral. This will be accompanied by an increase in airspeed and gravity loads on the airplane. If this occurs, recovery should be accomplished by leveling the wings and recovering from the resulting dive.

AIRSPED LIMITATIONS (CAS).

The following is a list of the certificated calibrated airspeed (CAS) limitations for the airplane.

Never Exceed Speed (glide or dive, smooth air)	174 MPH
Maximum Structural Cruising Speed	140 MPH
Maximum Speed, Flaps Extended	100 MPH
*Maneuvering Speed	122 MPH

*The maximum speed at which you may use abrupt control travel.

AIRSPED INDICATOR MARKINGS.

The following is a list of the certificated calibrated airspeed markings (CAS) for the airplane.

Never Exceed (glide or dive, smooth air)	174 MPH (red line)
Caution Range	140-174 MPH (yellow arc)
Normal Operating Range	59-140 MPH (green arc)
Flap Operating Range	52-100 MPH (white arc)

ENGINE OPERATION LIMITATIONS.

Power and Speed	150 BHP at 2700 RPM
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ENGINE INSTRUMENT MARKINGS.

OIL TEMPERATURE GAGE.

Normal Operating Range	Green Arc
Maximum Allowable	245°F (red line)

OIL PRESSURE GAGE.

Minimum Idling	25 psi (red line)
Normal Operating Range	60-90 psi (green arc)
Maximum	100 psi (red line)

FUEL QUANTITY INDICATORS.

Empty (2.0 gallons unusable each tank) E (red line)

TACHOMETER.

Normal Operating Range:

At sea level 2200-2500 RPM (inner green arc)

At 5000 feet 2200-2600 RPM (middle green arc)

At 10,000 feet 2200-2700 RPM (outer green arc)

Maximum Allowable 2700 RPM (red line)

CARBURETOR AIR TEMPERATURE GAGE (OPT).

Icing Range -15° to 5°C (yellow arc)

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" from the Weight and Balance Data sheet (or changes noted on FAA Form 337) carried in your airplane, and write them down in the column titled "YOUR AIRPLANE" on the Sample Loading Problem.

NOTE

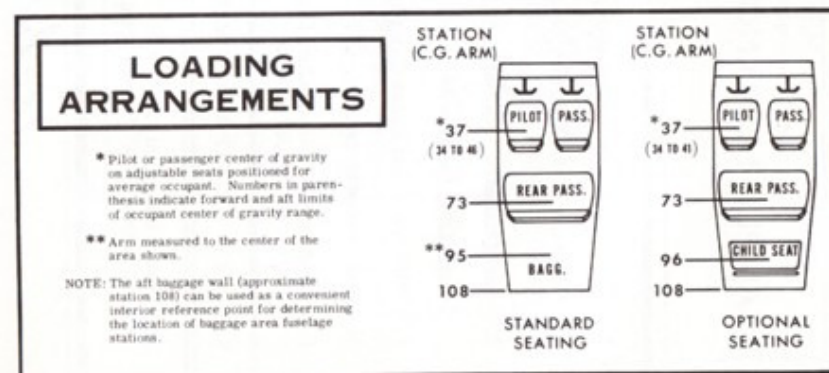
The Weight and Balance Data sheet is included in the aircraft file. In addition to the licensed empty weight and moment noted on this sheet, the c.g. arm (fuselage station) is shown. The c.g. arm figure need not be used on the Sample Loading Problem. The moment shown on the sheet must be divided by 1000 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

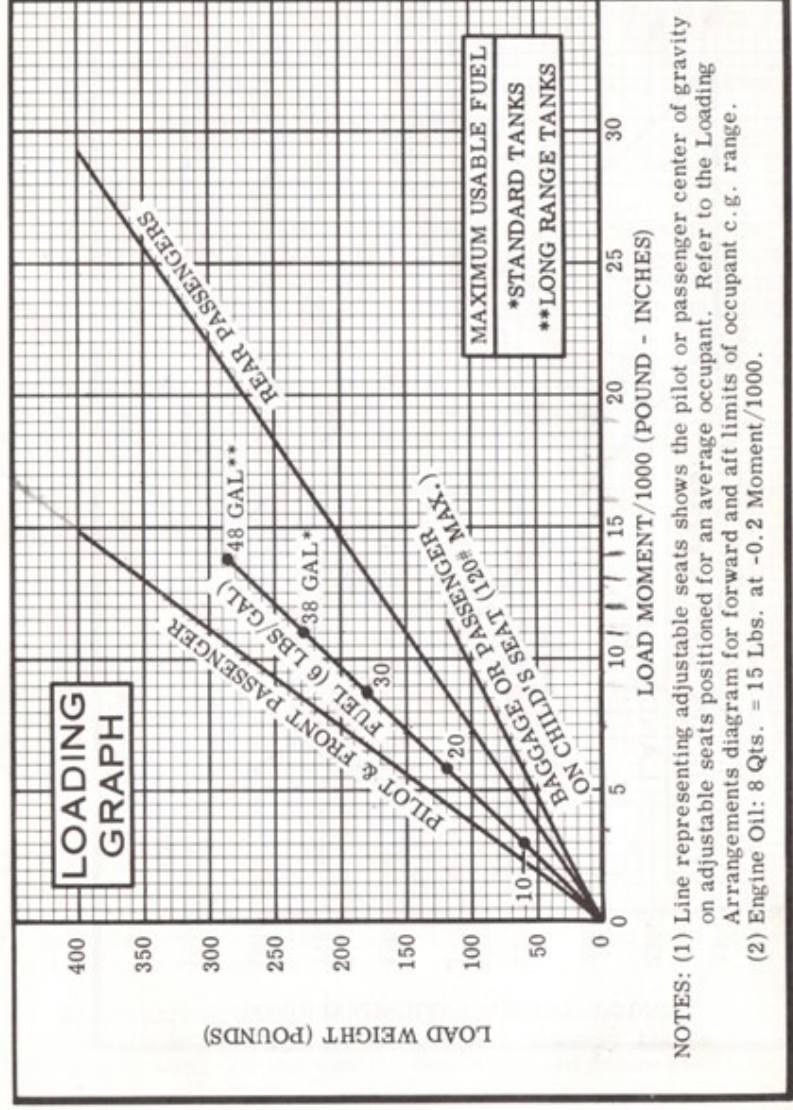
Loading Graph information is based on seats positioned for average occupants and baggage loaded in the center of the baggage area. For other than average loading situations, the Sample Loading Problem lists fuselage stations for these items to indicate their forward and aft c.g. range limitation (seat travel or 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.

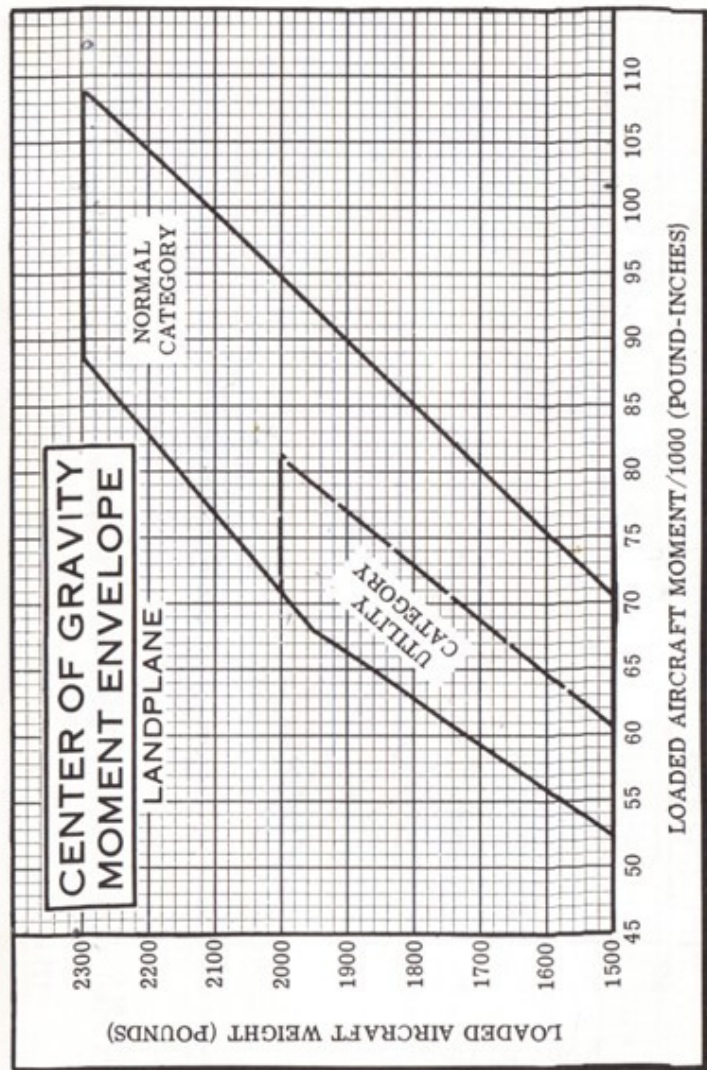


SAMPLE AIRPLANE		YOUR AIRPLANE	
		Weight (lbs.)	Moment (lb. -ins. /1000)
1. Licensed Empty Weight (Sample Airplane) . . .	1474	1474	58.68
2. Oil (8 qts. - Full oil may be assumed for all flights)	15	15	-0.2
3. Fuel (Standard - 38 Gal at 6#/Gal)	228	228	10.9
Fuel (Long Range - 48 Gal at 6#/Gal)			
4. Pilot and Front Passenger (Station 34 to 46) . . .	340		12.6
5. Rear Passengers	340		24.8
6. Baggage (or Passenger on Child's Seat (Station 82 to 108)	13		1.2
7. TOTAL WEIGHT AND MOMENT	2300		101.0
8. Locate this point (2300 at 101.0) on the center of gravity moment envelope, and since this point falls within the envelope, the loading is acceptable.			

useful load 897.9 737-8# 11/24/88 874.05
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NOTES: (1) 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.
 (2) Engine Oil: 8 Qts. = 15 Lbs. at -0.2 Moment/1000.



Section V

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 preventive 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 by hand with the tow-bar attached to the nose wheel. When towing with a vehicle, do not exceed the nose gear turning angle of 30° either side of center, or damage to the gear will result. If the airplane is towed or pushed over a rough surface during hangaring, watch that the normal cushioning action of the nose strut does not cause excessive vertical movement of the tail and the resulting contact with low hangar doors or structure. A flat nose wheel tire or deflated strut will also increase tail height.

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) Tie sufficiently strong ropes or chains (700 pounds tensile strength) to wing, tail and nose tie-down rings and secure each rope to a ramp tie-down.