

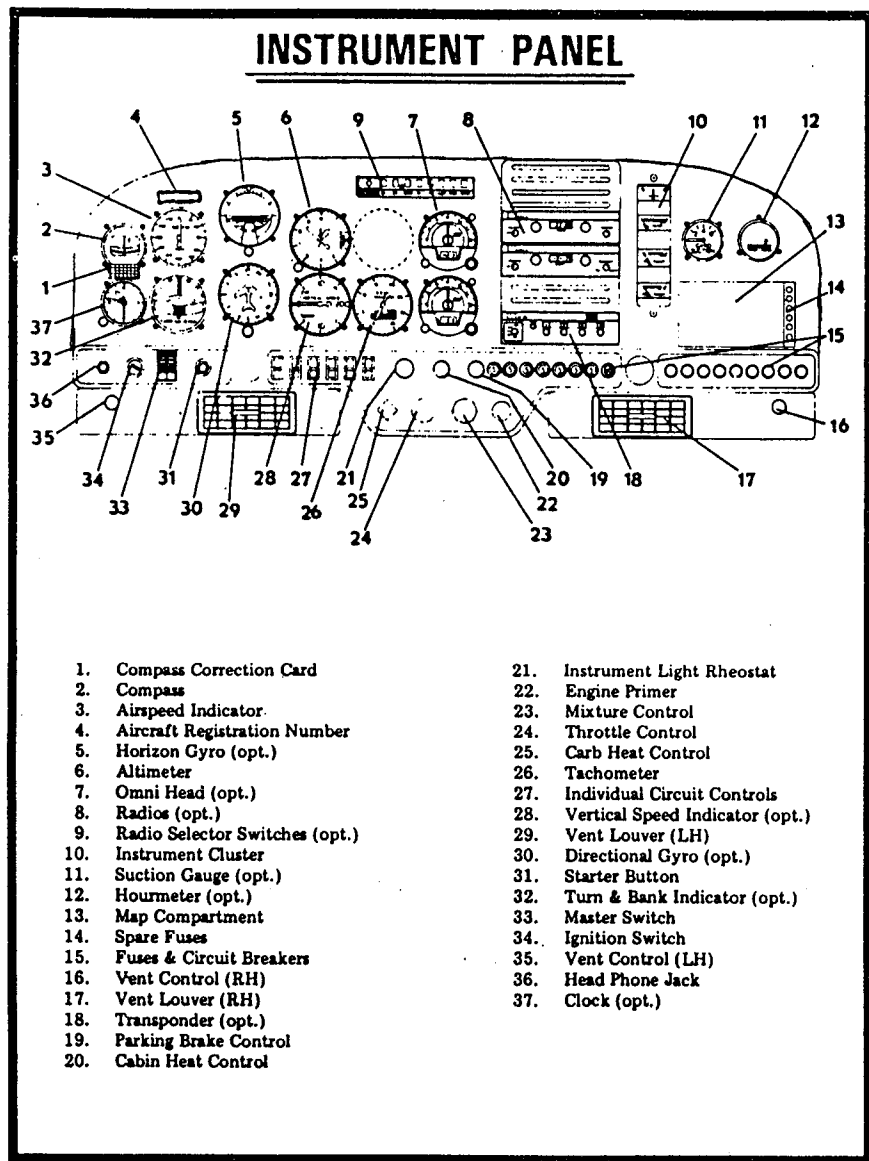


Figure 4

SAMPLE LOADING PROBLEM	SAMPLE AIRPLANE			YOUR AIRPLANE		
	WEIGHT (LBS.)	ARM (IN.)	MOMENT (LB. - IN. /1000)	WEIGHT (LBS.)	ARM (IN.)	MOMENT (LB. - IN. /1000)
1. LICENSED EMPTY WEIGHT	1041	73.4	76.449			
2. OIL-6 QTS. (1 QT. = 1.8 LBS.)	11	39.0	.429		39.0	
3. FUEL (IN EXCESS OF UNUSEABLE)	132	84.5	11.154		54.5	
4. PILOT AND CO-PILOT	340	92.5	31.450		92.5	
5. BAGGAGE (MAX. ALLOW - ABLE 100 LBS.)*	36	120.0	4.320		120.0	
6. TOTAL AIRCRAFT WEIGHT (LOADED)	1560	79.4	123.802			

*Maximum allowable is 100 pounds if C. G. is within Center of Gravity Envelope.

Figure 7

and elevator, then apply *smooth* elevator back pressure to bring the nose up to a level flight attitude.

NOTE

If recovery controls are not briskly applied in the first turn, more than one additional turn will be required for recovery. For quick recovery, apply full anti-spin controls as the spin begins, before one turn is completed.

AIRSPED LIMITATIONS

Maximum Glide or Dive, Smooth Air (red line)	195 MPH CAS
Caution Range (Yellow Arc)	144-195 MPH CAS
Normal Range (Green Arc)	64-144 MPH CAS
Flap Operating Range (White Arc)	61-115 MPH CAS
Maneuvering Speed	135 MPH CAS
Maximum-Canopy Open to Placard	130 MPH CAS

ENGINE INSTRUMENT MARKINGS

Oil Temperature Gauge - Normal Operating Range	Green Arc
Maximum Allowable	245° (Red Line)
Oil Pressure Gauge - Minimum Idling	25 PSI
Normal Operating Range	60-90 PSI
Maximum Allowable	100 PSI
Fuel Pressure Gauge - Normal Operating Range	0.5-8 PSI
Fuel Quantity Indicators - 0 means one gallon unuseable fuel remaining in the tank.	
Tachometer - Normal Operating Range	2000-2600 RPM

WEIGHT AND BALANCE

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

Write down the "Licensed Empty Weight" and "Moment" on the Sample Loading Problem chart under the column marked "your airplane", from the Weight and Balance Data sheet (and/or changes listed on FAA Form 337) included with your aircraft papers. Also add all additional weights and their corresponding moments (obtained from the "loading graph") of items to be carried on the flight. Plot the total weight and moment on the "Center of Gravity Envelope" chart and if the intersection point is within the envelope, the loading is acceptable.

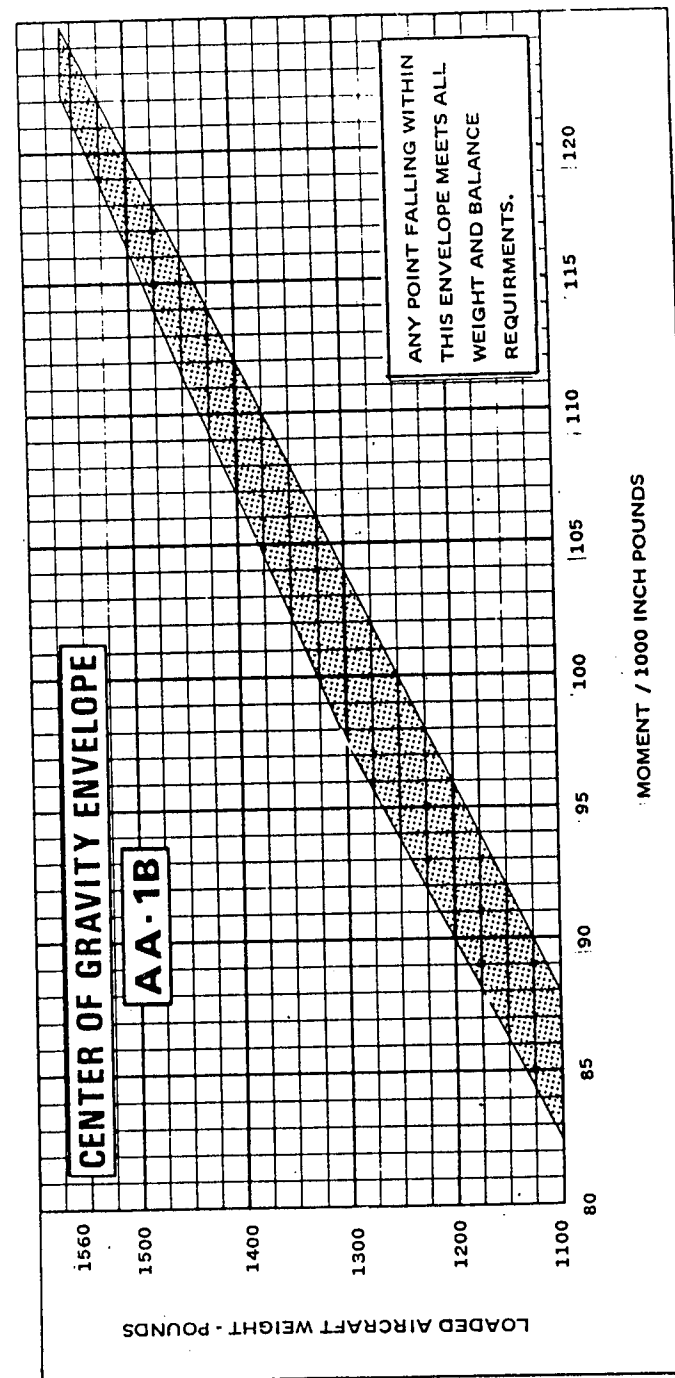


Figure 5

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- Loading Graph**
- LOAD - WEIGHT IN POUNDS
- PILOT & PASSENGERS
- FUEL 22 GAL. USABLE
- BAGGAGE
- MOMENT/1000 POUND INCHES
- | Moment (1000 lb-in) | Pilot & Passengers (lb) | Fuel 22 Gal. Usable (lb) | Baggage (lb) |
|---------------------|-------------------------|--------------------------|--------------|
| 2 | 400 | 100 | 40 |
| 10 | 440 | 150 | 80 |
| 12 | 452 | 164 | 100 |
| 20 | 480 | 190 | 140 |
| 30 | 520 | 230 | 180 |
| 38 | 560 | 270 | 220 |

TAKE-OFF

Accelerate to 60 MPH before applying a light back pressure on the control wheel to lift off. Raising the nose wheel too soon or to an excessive angle may increase take-off ground distance. When airborne, accelerate to the desired climb speed.

After alignment in the take-off direction and with the elevator held in the full up position, apply take-off power smoothly. As the airplane accelerates and the elevator becomes effective, the nose load will lighten reducing nose wheel drag. As the nose raises, the elevator should be eased forward so the nose wheel is held just clear of the ground. After lift-off, accelerate to the best angle of climb speed (75 MPH at sea level) or best rate of climb speed (89 MPH at sea level) depending on obstacles.

Avoid prolonged engine run-up in loose gravel, since the propeller will tend to pick up stones and debris causing blade damage.

After alignment in the take-off direction, advance the throttle without hesitation, and begin the take-off roll with the elevator neutral. Use light smooth brake pressures to maintain low speed directional control. At 60 MPH apply elevator back pressure for rotation, then climb at 75 MPH. If terrain or further obstacles are to be cleared after take-off and above the 50 foot obstacle, accelerate to the best angle of climb speed for that altitude. When obstacles are cleared, accelerate to the desired climb speed.

Speeds given are for gross weight, sea level conditions.

A normal climb speed of 95 MPH is recommended once over ground obstacles. This speed offers good visibility, excellent over-the-ground speed and rate of climb. The best rate of climb speed varies from 89 MPH at sea level to 84 MPH at 10,000 ft. The best angle of climb speed varies from 75 MPH at sea level to 80 MPH at 10,000 ft.

TAKE-OFF DATA

HARD SURFACE RUNWAY - FLAPS UP

AIRCRAFT	GROSS WT. LBS.	IAS AT 50 MPH	HEAD WIND KNOTS	AT S.L. & 59° F.		AT 2000 FT. & 52° F.		AT 4000 FT. & 45° F.		AT 6000 FT. & 38° F.	
				GROUND RUN	TOTAL TO CLEAR 50 FT. OBS.	GROUND RUN	TOTAL TO CLEAR 50 FT. OBS.	GROUND RUN	TOTAL TO CLEAR 50 FT. OBS.	GROUND RUN	TOTAL TO CLEAR 50 FT. OBS.
AA-1B TRAINER WITH CLIMB PROP (STD.)	1560	75	0	810	1550	912	1810	1055	2179	1207	2655
			10	569	1185	651	1399	758	1698	875	2093
			20	373	858	431	1032	510	1266	599	1586
AA-1B TR-2 WITH CRUISE PROP (STD.)	1560	75	0	890	1590	1015	1850	1190	2220	1380	2695
			10	625	1215	725	1430	855	1730	1000	2125
			20	410	880	480	1055	575	1290	685	1610

- NOTES:
1. Increase ground run 7% for each 20° F. above standard temperatures.
 2. The increase in total take-off distance varies from 8% at sea level to 14% at 6000 feet for each 20° F. above standard temperature.

Figure 8

MAXIMUM RATE-OF-CLIMB DATA

1560 POUNDS GROSS WEIGHT - FLAPS RETRACTED

AIRCRAFT	ALTITUDE FEET	TEMPERATURE °F.	IAS MPH	RATE OF CLIMB FT. /MIN.	FUEL USED FROM S.L. GALLONS
AA-1B TRAINER WITH CLIMB PROP (STD.)	S.L.	59°	89	705	1.0
	2500	50°	88	585	1.6
	4500	43°	87	485	2.1
	6500	36°	86	390	2.6
	8500	28°	85	290	3.3
	10500	21°	84	190	4.1
AA-1B TR-2 WITH CRUISE PROP (STD.)	S.L.	59°	89	660	1.0
	2500	50°	88	540	1.6
	4500	43°	87	440	2.1
	6500	36°	86	345	2.7
	8500	28°	85	245	3.4
	10500	21°	84	145	4.2

- NOTES:
1. Full-throttle climb, mixture leaned above 5,000 feet to smooth engine operation.
 2. Fuel used includes taxi and warm up allowance.
 3. Power loss attributable to the presence of humidity can be as high as 7%, this represents approximately 100 FPM loss in climb rate at sea level.

Figure 9