

CHEROKEE 140

PA-28-140

Owner's Handbook



**Piper Aircraft Corporation, Vero Beach, Florida
U.S. A.**

SECTION I

SPECIFICATION FEATURES

PERFORMANCE

The gross weight of 1950 pounds in the following performance charts applies to Serial Nos. 28-20000 to 28-20939, unless the airplane has been modified to 2150 pounds gross weight. All airplanes from Serial Nos. 28-20940 and up have been licensed from the factory at 2150 pounds gross weight.

Performance figures are for standard airplanes flown at gross weight under standard conditions at sea level, or stated altitude. Any deviation from Standard equipment may result in changes in performance.

	<u>GROSS WEIGHTS</u>	<u>1950</u>	<u>2150</u>
Take-off Run (ft.) (flaps up)		725	800
Take-off Distance Over 50 ft. Obstacle (ft.) (flaps up)		1500	1700
Best Rate of Climb Speed (mph)		85	85
Rate of Climb (ft. per min.)		820	660
Service Ceiling (ft.)		15,000	14,300
Absolute Ceiling		17,000	16,800
Top Speed (mph)		141 (144*)	139 (142*)
Cruising Speed (75% power, sea level) (mph)		120 (123*)	121 (124*)
Optimum Cruising Speed (75% power, 7000 ft., mph)		130 (133*)	130 (133*)
Instructional Power Cruise Speed (50% power, sea level)		100 (102*)	100 (102*)
Fuel Consumption (gal. per hr. 75%)		7.9	8.4
Fuel Consumption (gal. per hr. 50%)		5.3	5.6
Cruising Range (75% power, sea level, mi.)	515, 4 hrs. (720, 6 hrs.**)	490, 4 hrs. (680, 6 hrs.**)	
Cruising Range (75% power, 7000 ft., mi.)		560 (780**)	535 (725**)
Optimum Cruising Range (55% power, 10,000 ft.)		600 (840**)	570 (790**)

*When Fenders Installed

**With 50 gal. Reserve Fuel

SPECIFICATION FEATURES: (cont)

PERFORMANCE

	GROSS WEIGHTS	<u>1950</u>	<u>2150</u>
Instructional Power Cruising Range (50% power, sea level)	640, 6.5 hrs. (895, 9 hrs. **)	650, 6.5 hrs. (910, 9 hrs. **)	-
Stalling Speed (flaps down, mph)		52	54
Landing Roll (flaps down, ft.)		485	535

WEIGHTS

Gross Weight (lbs.)	1950	2150
Empty Weight (Standard) (lbs.)	1180	1201
USEFUL LOAD (Standard) (lbs.)	770	949
Empty Weight (AutoFlight) (lbs.)	1220	1241
USEFUL LOAD (AutoFlight) (lbs.)	730	909

POWER PLANT

Engine - Lycoming	O-320-E2A	O-320-E2A
Rated Horsepower and Speed (rpm)	140 at 2450	150 at 2700
Bore (inches)	5.125	5.125
Stroke (inches)	3.875	3.875
Displacement (cubic inches)	319.8	319.8
Compression Ratio	7:1	7:1
Dry Weight (pounds)	272	272
Oil Sump Capacity (qts.)	8	8
Propeller (Sensenich)	M74DM	M74DM

**With 50 gal. Reserve Fuel

SPECIFICATION FEATURES: (cont)

	GROSS WEIGHTS	<u>1950</u>	<u>2150</u>
FUEL AND OIL			
Fuel Capacity (gal.) Standard		36	36
Fuel Capacity (gal.) Reserve		50	50
Oil Capacity (qts.)		8	8
Fuel Aviation Grade (Minimum Octane)		80/87	80/87
(Specified Octane)		80/87	80/87
(Alternate Fuels)		See page 30	

BAGGAGE

Maximum Baggage (lbs.)	100	200***
Baggage Space (cubic ft.)	22	22

DIMENSIONS

Wing Span (ft.)	30	30
Wing Area (sq. ft.)	160	160
Wing Loading (lbs. per sq. ft.)	12.2	13.4
Length (ft.)	23.3	23.3
Height (ft.)	7.3	7.3
Power Loading (lbs. per HP)	13.9	14.3

LANDING GEAR

Wheel Base (ft.)		6.2	6.2
Wheel Tread (ft.)		10.0	10.0
Tire Pressure (lbs.)	Nose	24	24
	Main	24	24

***Except when family seat and safety belts are installed, 340 lbs. is permitted.

GROUND CHECK

Check the magnetos at 2000 RPM by switching from Both to Right then back to Both before switching to Left. Differential drop should not exceed 50 RPM while the total drop on either magneto should not exceed 175 RPM.

Check vacuum gauge, indicator should read 5" Hg ± 1 " Hg at 2000 RPM.

Check both the oil temperature and pressure. The temperature may be low for some time if the engine is being run for the first time of the day, but as long as the pressure is within limits the engine is ready for take-off.

Carburetor heat should also be checked prior to take-off to be sure that the control is operating properly and to clear any ice which may have formed during taxiing. Avoid prolonged ground operation with carburetor heat ON as the air is unfiltered.

Mixture should be set full rich, except a minimum amount of leaning is permitted for smooth engine operation when taking off at high elevation.

TAKE-OFF

Just before take-off the following items should be checked:

- | | |
|--------------------------|----------------------------|
| 1. Controls free | 7. Electric fuel pump "ON" |
| 2. Flaps "UP" | 8. Engine gauges normal |
| 3. Tab set | 9. Door latched |
| 4. Mixture "RICH" | 10. Altimeter set |
| 5. Carburetor heat "OFF" | 11. Fasten belts/harness |
| 6. Fuel on proper tank | |

The take-off technique is conventional for the Cherokee. The tab should be set slightly aft of neutral, with the exact setting determined by the loading of the aircraft. Allow the airplane to accelerate to 50 to 60 miles per hour, then ease back on the wheel enough to let the airplane fly itself off the ground. Premature raising of the nose, or raising it to an excessive angle, will result in a delayed take-off. After take-off let the aircraft accelerate to the desired climb speed by lowering the nose slightly.

Short Field, Obstacle Clearance:

Lower the flaps to 25° (second notch), accelerate to 55-60 miles per hour and ease back on the control wheel to rotate. After breaking ground, accelerate to the best angle of climb speed, 74 miles per hour. Slowly retract the flaps when the obstacle has been cleared and continue climb at 85 miles per hour.

Short Field, No Obstacles:

Lower the flaps to 25° (second notch) accelerate to 55-60 miles per hour. Ease back on the control wheel to rotate and accelerate to best rate of climb speed, 85 miles per hour. Slowly retract the flaps while climbing out.

Soft Field, No Obstacle:

Lower the flaps to 25° (second notch), accelerate aircraft and pull nose gear from the ground as soon as possible, lift off at lowest possible airspeed. Accelerate just above the ground to best rate of climb speed, 85 miles per hour. Climb out while slowly retracting the flaps.

Soft Field, Obstacle Clearance:

Lower flaps to 25° (second notch), accelerate aircraft, pull nose gear off as soon as possible and lift off at lowest possible airspeed. Accelerate just above the ground to best angle of climb speed, 74 miles per hour to climb past obstacle clearance height, continue climb while accelerating to best rate of climb speed, 85 miles per hour and slowly retract the flaps.

CLIMB

The best rate of climb at gross weight will be obtained at 85 miles per hour. The best angle of climb may be obtained at 74 miles per hour. At lighter than gross weight these speeds are reduced somewhat. For climbing enroute a speed of 100 miles per hour is recommended. This will produce better forward speed and increased visibility over the nose during the climb.

applying the brakes. Braking is most effective when back pressure is applied to the control wheel, putting most of the aircraft weight on the main wheels. In high wind conditions, particularly in strong cross-winds, it may be desirable to approach the ground at higher than normal speeds with partial or no flaps.

To stop the engine after landing, pull the mixture control full back to idle cut-off. When alternate fuels are used, the engine should be run up to 1200 RPM for one minute prior to shutdown to clean out any unburned fuel. After the engine stops turn magneto and master switches off.

MOORING

The Cherokee should be moved on the ground with the aid of the nose wheel tow bar provided with each plane and secured in the baggage compartment. Tie downs may be secured to rings provided under each wing, and to the tail skid. The aileron and stabilator controls should be secured by looping the safety belt through the control wheel and pulling it tight. The rudder is held in position by its connections to the nose wheel steering, and normally does not have to be secured. The flaps are locked when in the full up position, and should be left retracted.

WEIGHT AND BALANCE

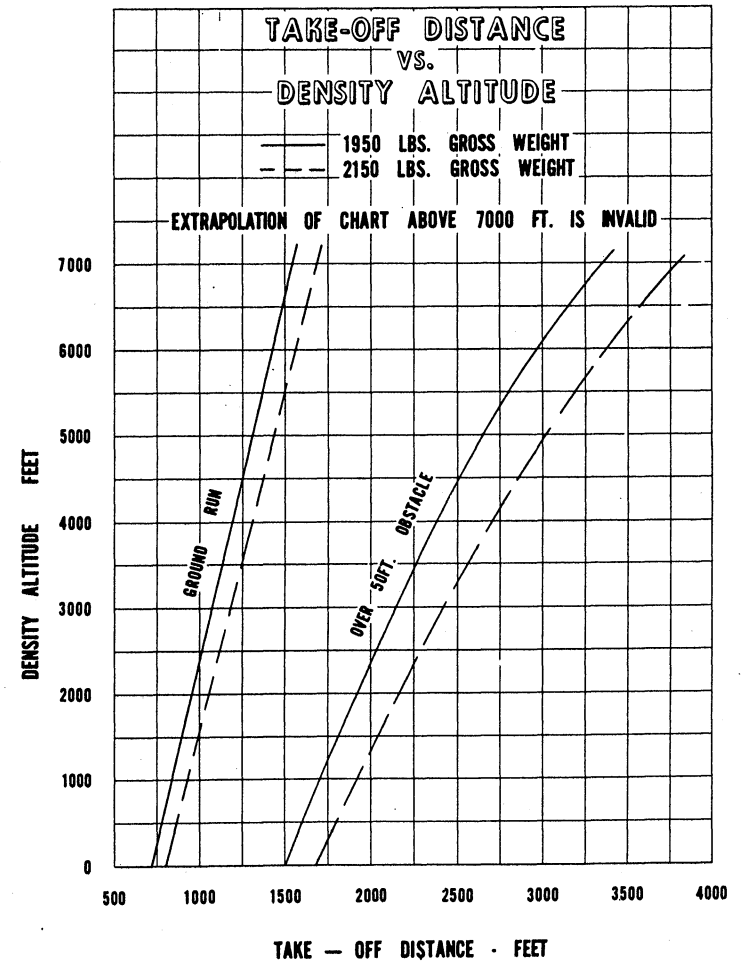
It is the responsibility of the owner and pilot to determine that the airplane remains within the allowable weight vs center of gravity envelope while in flight. For weight and balance data see the Airplane Flight Manual and Weight and Balance Form supplied with each airplane.

SECTION IV

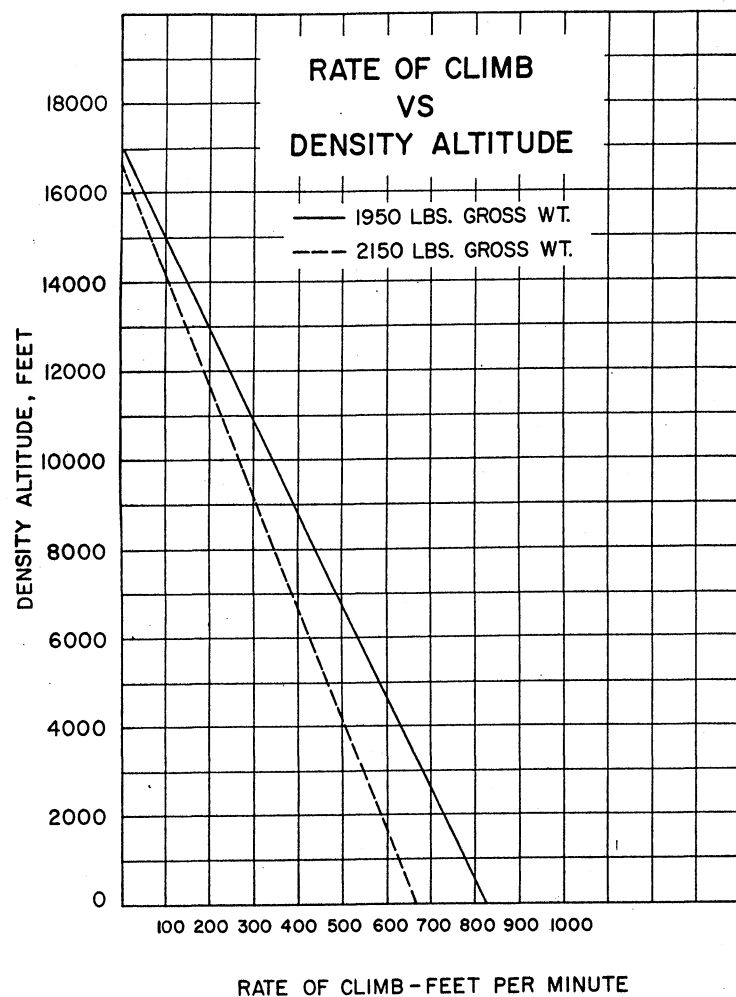
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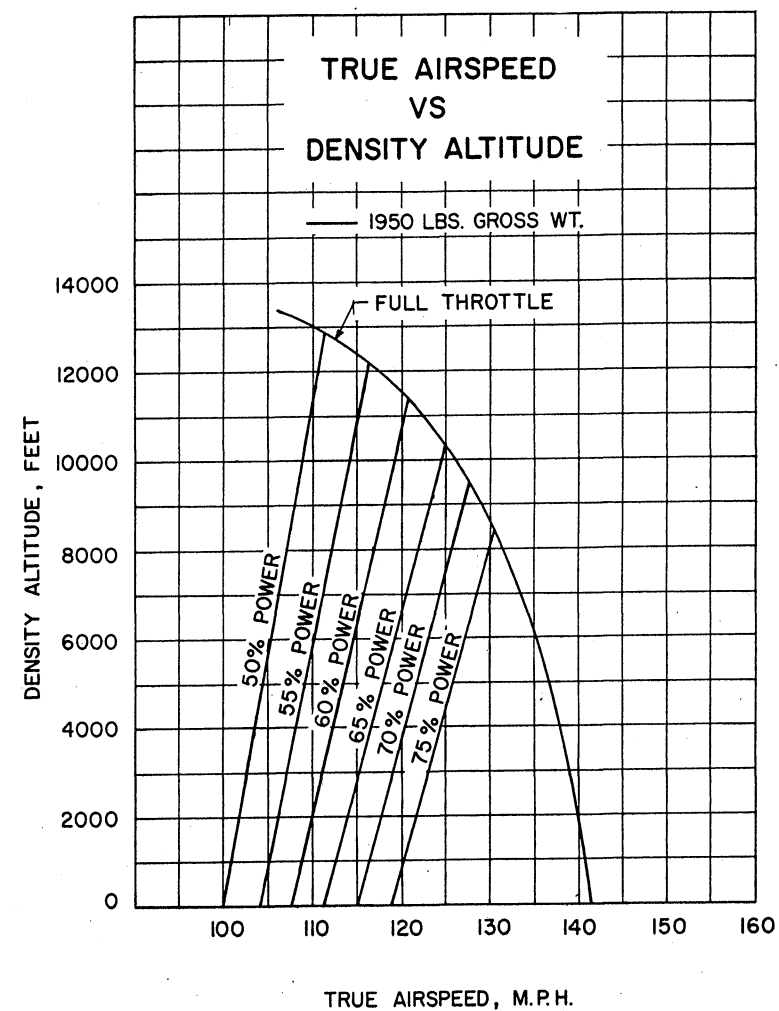
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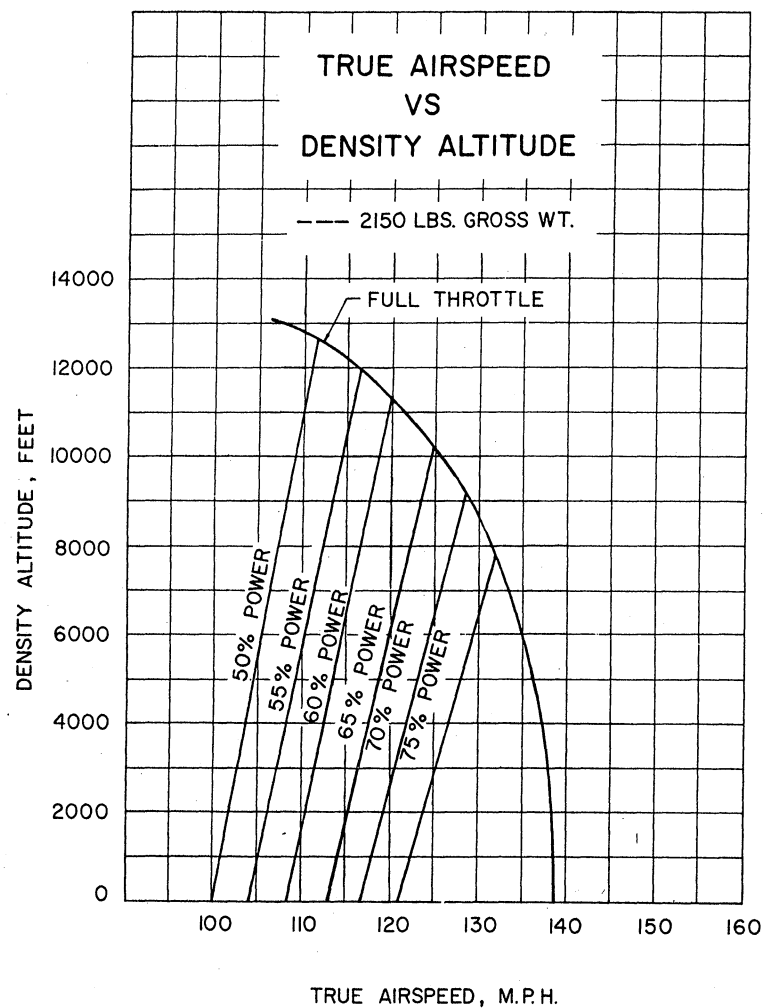
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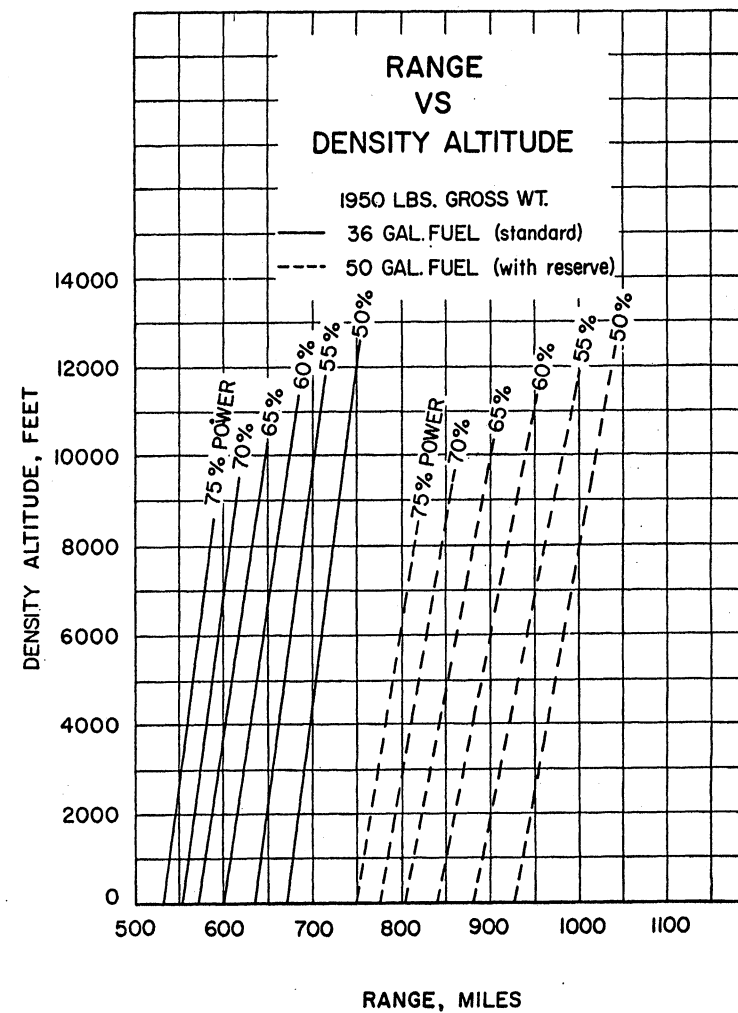
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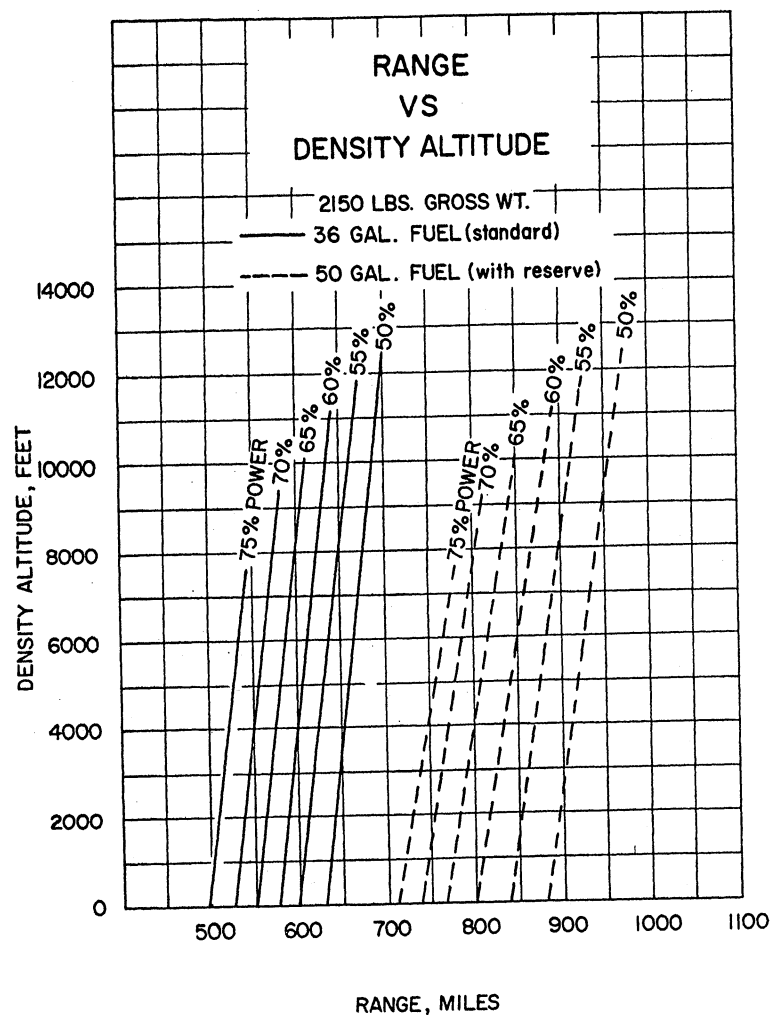
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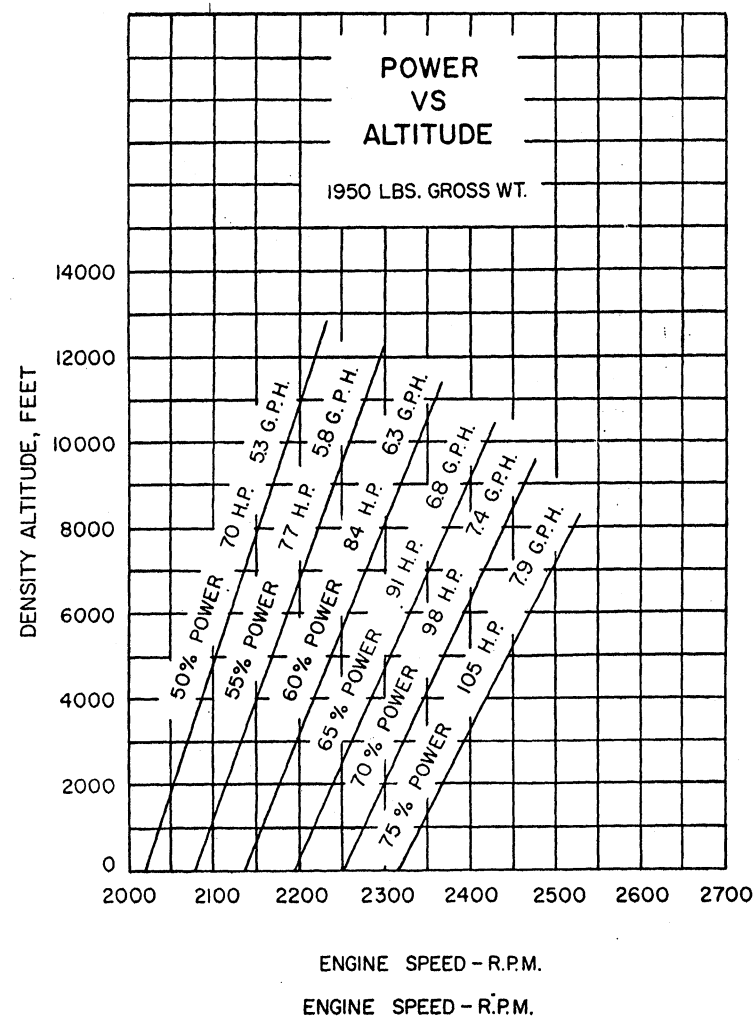
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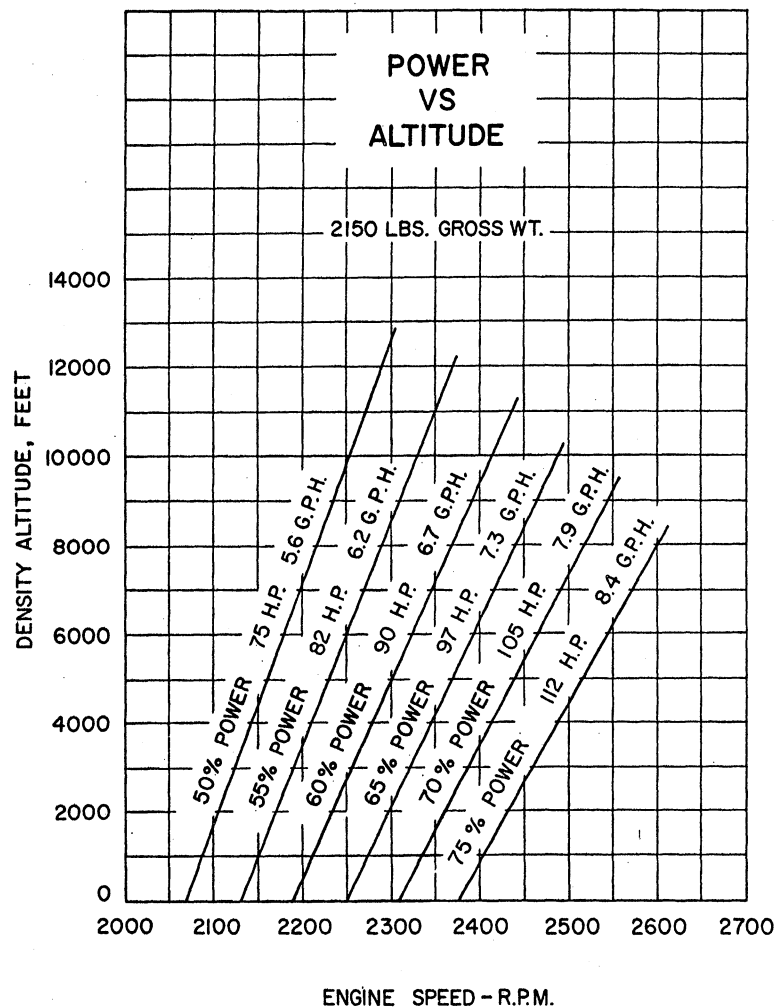
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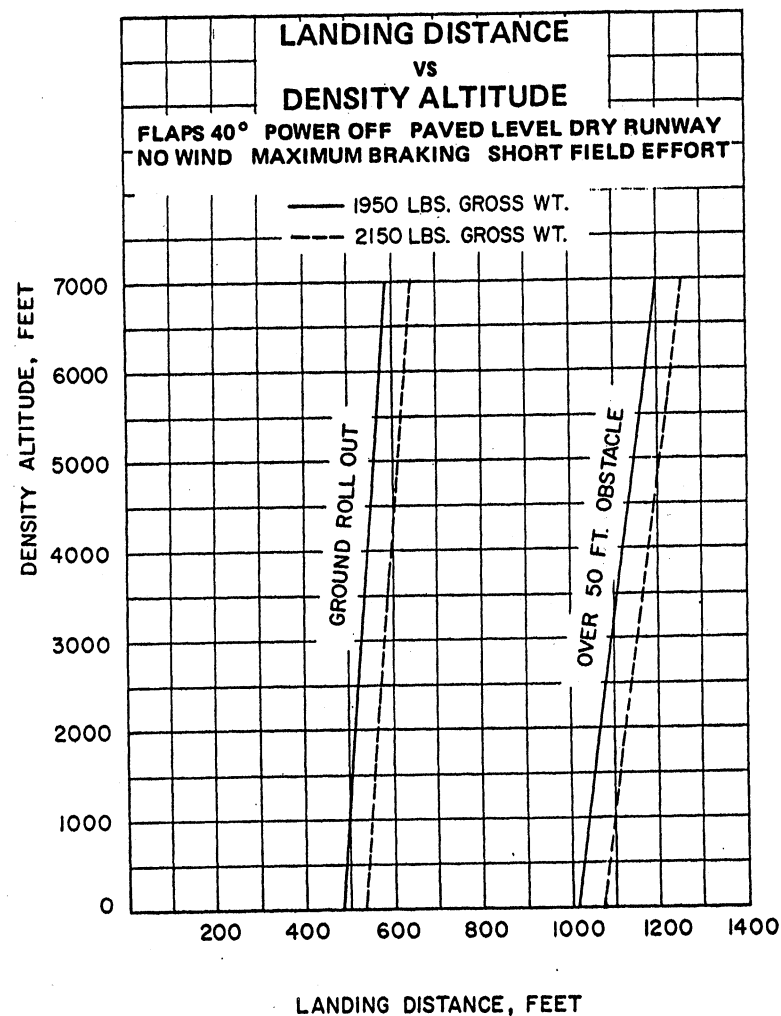
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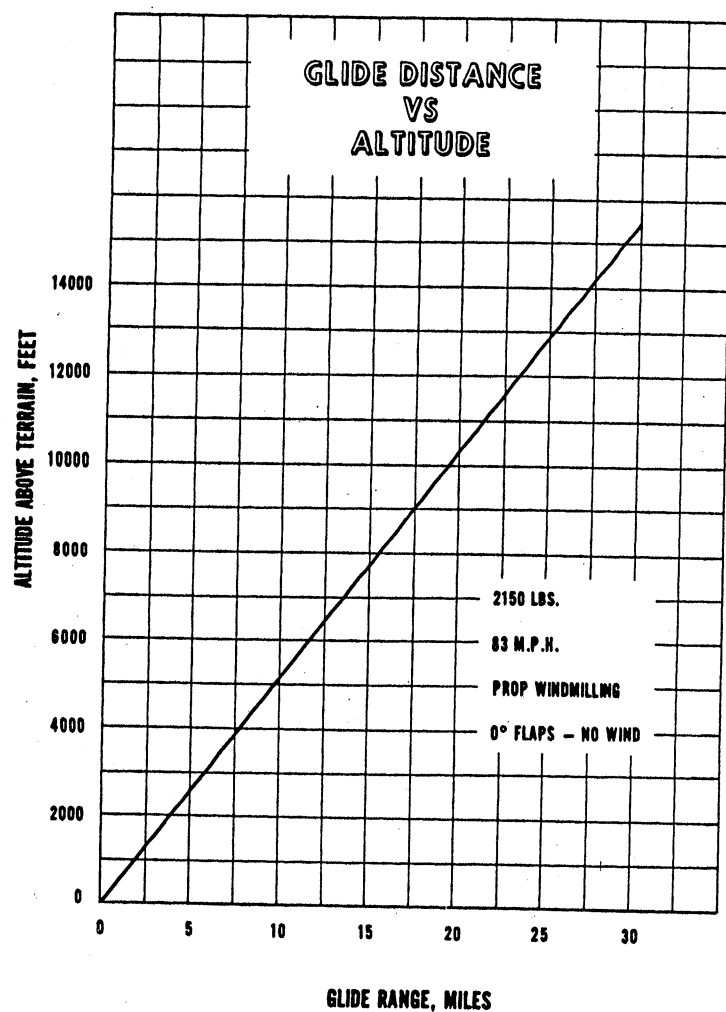
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