

GENERAL SPECIFICATIONS

PERFORMANCE

Published figures are for standard airplanes flown at gross weight under standard conditions at sea level, unless otherwise stated. Performance for a specific airplane may vary from published figures depending upon the equipment installed, the condition of engine, airplane and equipment, atmospheric conditions and piloting technique. Each performance figure below is subject to the same conditions as on the corresponding performance chart from which it is taken in the Performance Charts Section.

Takeoff Ground Run, 25° flaps, sea level (ft)	720
Takeoff Distance Over 50-ft Obstacle, 25° flaps, sea level (ft)	1625
Best Rate of Climb Speed (mph) <i>V_Y</i>	<u>85</u>
Rate of Climb (ft per min)	725
Best Angle of Climb Speed, sea level (mph) <i>V_X</i>	<u>76</u>
Max Speed, sea level (mph)	148*
Max Speed Optimum Altitude 9300 ft, 75% power (TAS) (mph)	141*
Service Ceiling (ft)	14,150
Absolute Ceiling (ft)	16,500
Cruise Speed at best power mixture (mph)	
65% power, 12,800 ft	132
60% power, 13,800 ft	115
Range at best power mixture (mi)**	
75% power, 9300 ft	645
65% power, 12,800 ft	705
Cruise speed at best economy mixture (mph)	
75% power, 9700 ft	131
65% power, 14,000 ft	109
Range at best economy mixture (mi)**	
75% power, 9700 ft	710
65% power, 14,000 ft	750
Stalling Speed, flaps down (CAS) (mph)	<u>61</u>
Stalling Speed, flaps up (CAS) (mph)	<u>68</u>
Landing Roll, sea level, flaps down (ft)	635
Landing Distance Over 50-ft Obstacle, sea level (ft)	1185

*All speeds stated are with optional wheel fairings installed. Subtract 3 mph if wheel fairings are not installed.

**No reserve.

WEIGHTS

Gross Weight (lbs)	2450
Empty Weight (Standard) (lbs)	1390*
USEFUL LOAD (Standard) (lbs)	1060*

*Weight varies with each aircraft.

CHEROKEE ARCHER

POWER PLANT

Engine (Lycoming)	O-360-A4A
Rated Horsepower	180
Rated Speed (rpm)	2700
Bore (inches)	5.125
Stroke (inches)	4.375
Displacement (cubic inches)	361.0
Compression Ratio	8.5:1
Dry Weight (pounds)	285
Propeller	76EM8S5-0-60

FUEL AND OIL

Fuel Capacity (U.S. gal) Usable	48
Oil Capacity (qts)	8
Fuel, Aviation Grade (min octane)	100/130

BAGGAGE

Maximum Baggage (lbs)	200
Baggage Space (cubic ft)	24
Baggage Door Size (in.)	20 x 22

DIMENSIONS

Wing Span (ft)	32
Wing Area (sq ft)	170
Wing Loading (lbs per sq ft)	14.4
Length (ft)	24.0
Height (ft)	7.8
Power Loading (lbs per hp)	13.6

LANDING GEAR

Wheel Base (ft)	6.7
Wheel Tread (ft)	10
Tire Pressure (psi)	24
	24
Tire Size	Nose (4 ply rating)
	Main (4 ply rating)
	6.00 x 6
	6.00 x 6

WEIGHT AND BALANCE DATA

MODEL PA-28-180 CHEROKEE

Airplane Serial Number 28-7505120Registration Number N33083Date 1-15-75

AIRPLANE EMPTY WEIGHT

Item	Weight (Lbs)	× C. G. Arm (Inches Aft of Datum)	= Moment (In-Lbs)
XXXXXX *Empty Weight Computed	1394.0	85.7	119459
Unusable Fuel (13-1/3 pints)	10.0	103.0	1030
Standard Empty Weight	1404.0	85.8	120489
Optional Equipment	94.3	110.0	10374
Licensed Empty Weight	1498.3	87.3	130863

*Empty weight is defined as dry empty weight (including paint and hydraulic fluid) plus 1.8 lbs undrainable engine oil.

AIRPLANE USEFUL LOAD

$$(\text{Gross Weight}) - (\text{Licensed Empty Weight}) = \text{Useful Load}$$

Normal Category: (2450 lbs) - (1498.3 lbs) = 951.7 lbs

Utility Category: (1950 lbs) - (1498.3 lbs) = 451.7 lbs

THIS LICENSED EMPTY WEIGHT, C. G. AND USEFUL LOAD FOR THE AIRPLANE AS DELIVERED FROM THE FACTORY. REFER TO APPROPRIATE AIRCRAFT RECORD WHEN ALTERATIONS HAVE BEEN MADE.

New weight & balance in A/C log dated 12-10-75. See form 337 this date. Price Leford A&P 1424926

C. G. RANGE AND WEIGHT INSTRUCTIONS

1. Add the weight of all items to be loaded to the licensed empty weight.
2. Use the loading graph to determine the moment of all items to be carried in the airplane.
3. Add the moment of all items to be loaded to the licensed empty weight moment.
4. Divide the total moment by the total weight to determine the C.G. location.
5. By using the figures of Item 1 and Item 4, locate a point on the C.G. range and weight graph. If the point falls within the C.G. envelope, the loading meets the weight and balance requirements.

SAMPLE LOADING PROBLEM (Normal Category)

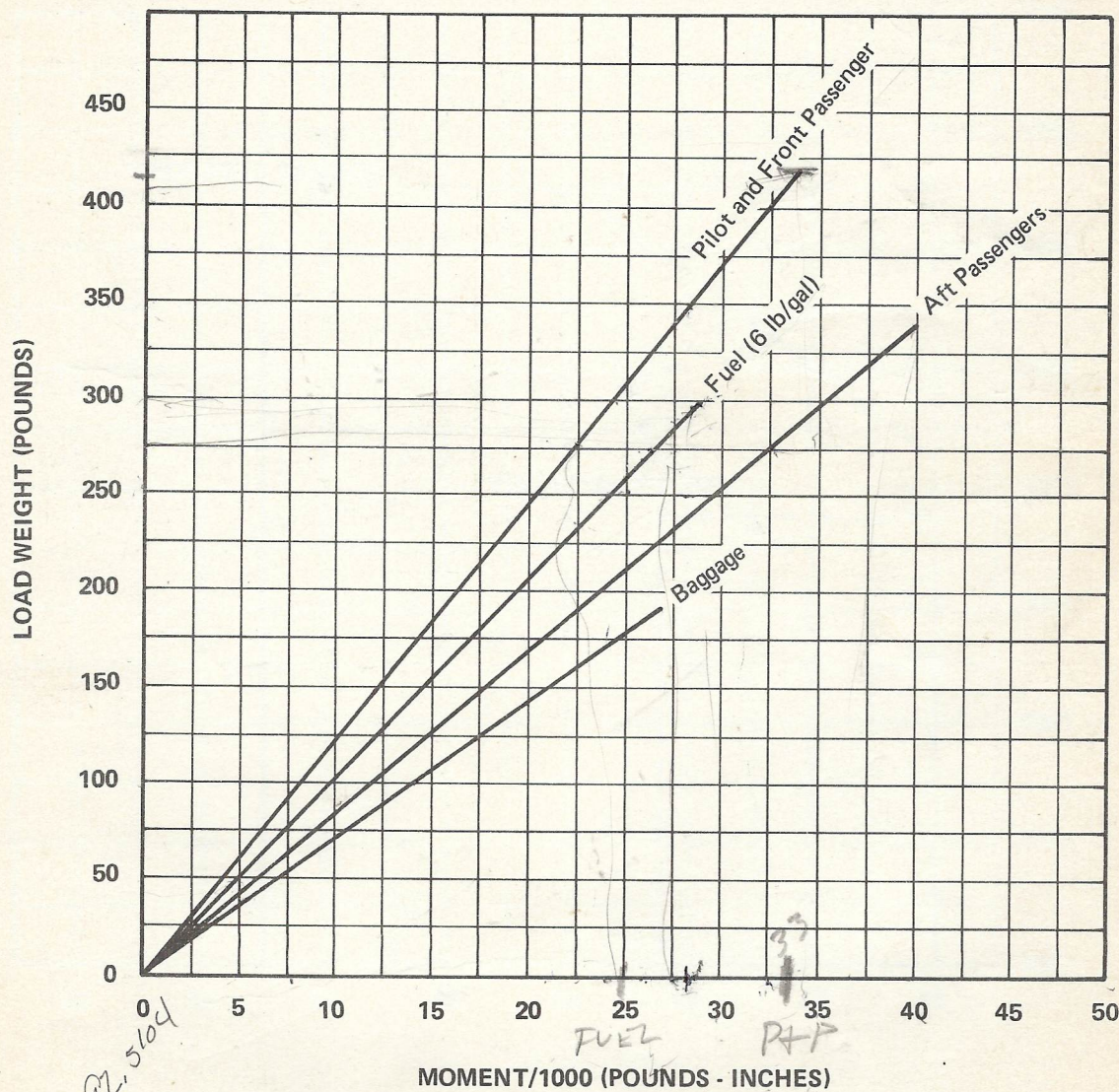
	Weight (Lbs)	Arm Aft Datum (Inches)	Moment (In-Lbs)
Licensed Empty Weight	1498.3	87.3	130863
Oil (8 quarts)	15	27.5	413
Pilot and Front Passenger <i>400</i>	340	80.5	27370
Passengers, Aft* (Rear Seat) <i>270</i>	340	118.1	40154
Fuel (48 Gal. Maximum)	256.7	95.0	24387
Baggage* <i>50</i>		142.8	
Total Loaded Airplane	2450.0	91.1	223187

The center of gravity (C.G.) of this sample loading problem is at 91.1 inches aft of the datum line. Locate this point (91.1) on the C.G. range and weight graph. Since this point falls within the weight - C.G. envelope, this loading meets the weight and balance requirements.

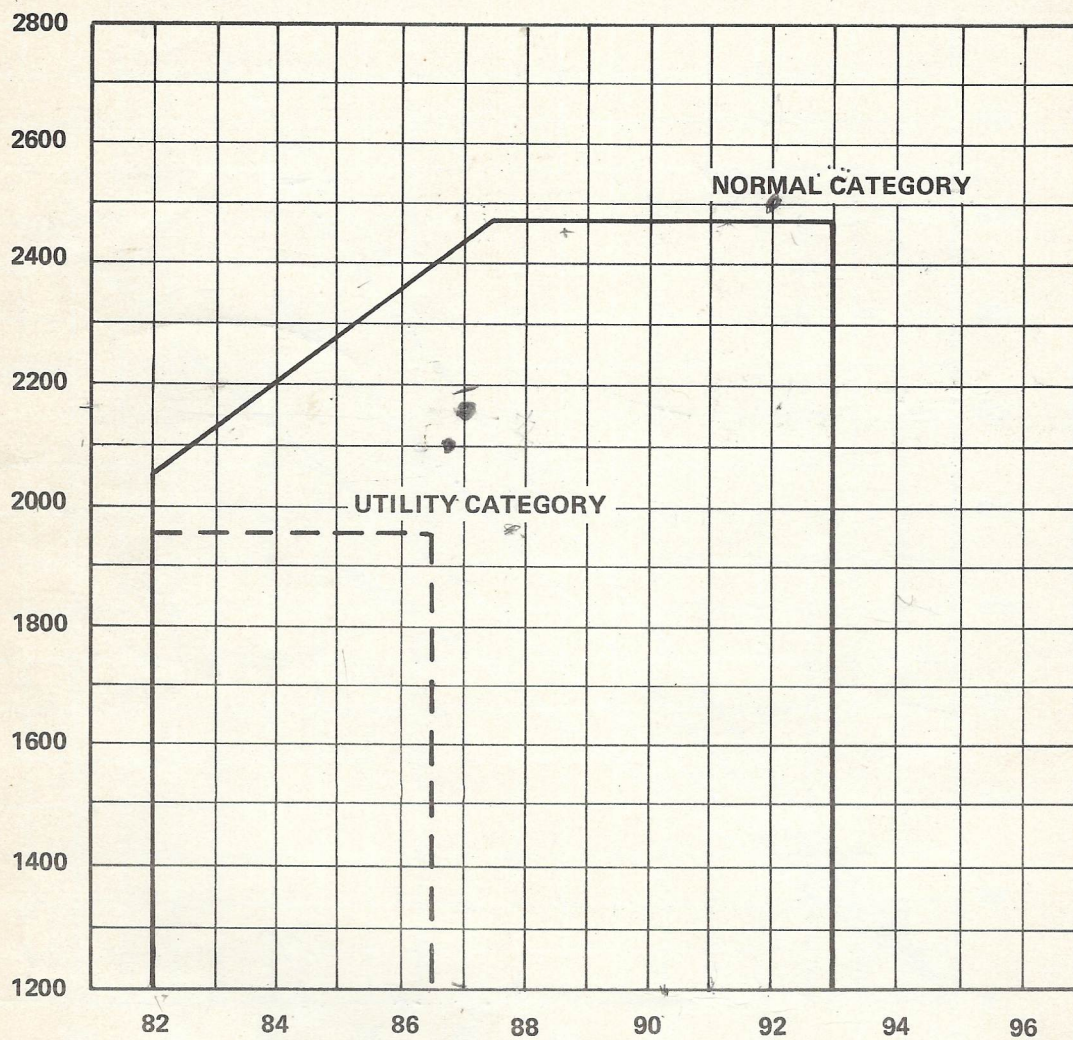
IT IS THE RESPONSIBILITY OF THE PILOT AND AIRCRAFT OWNER TO INSURE THAT THE AIRPLANE IS LOADED PROPERLY.

2000-1-1000
*Utility Category Operation - No baggage or aft passengers allowed.

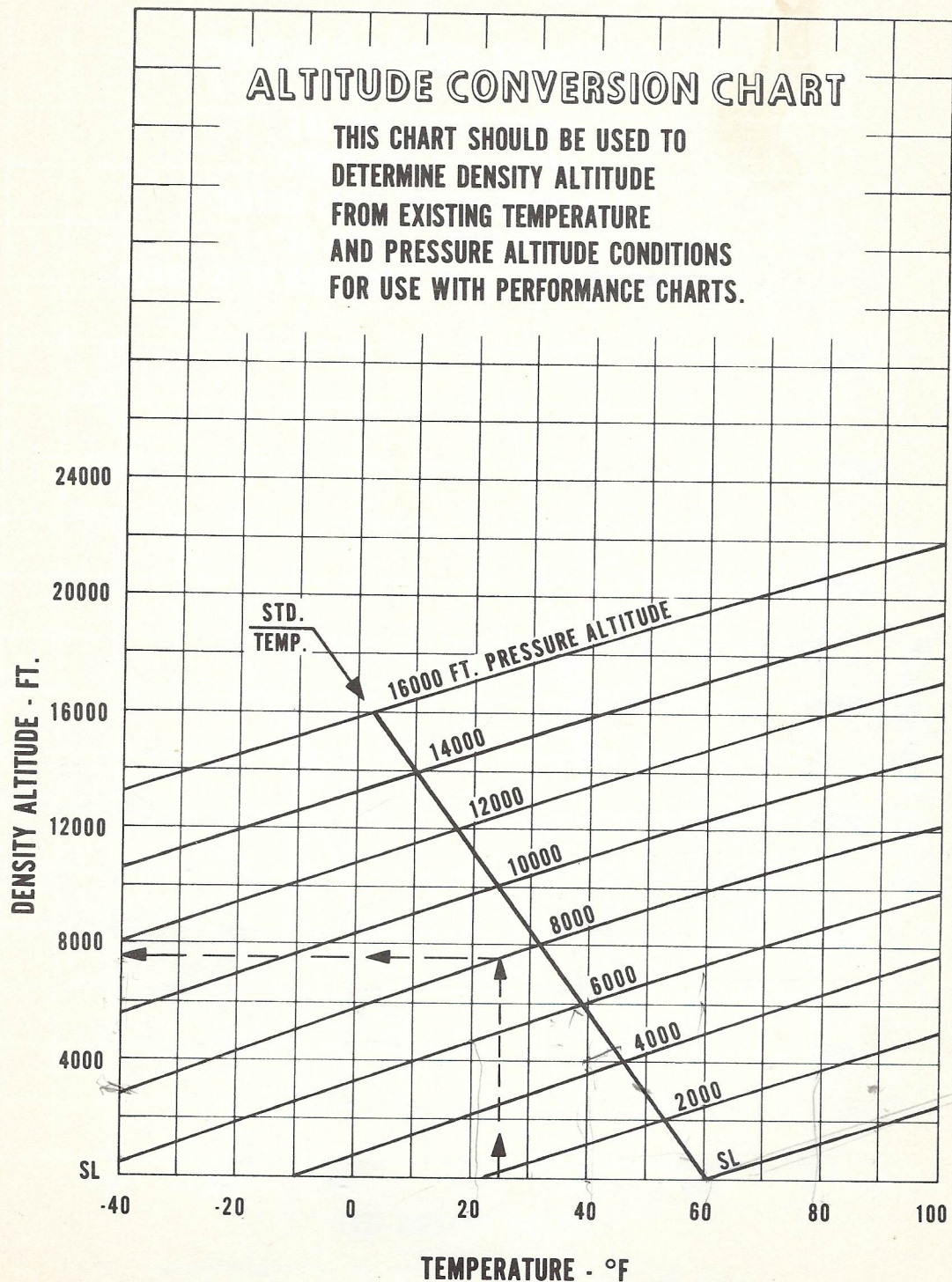
LOADING GRAPH



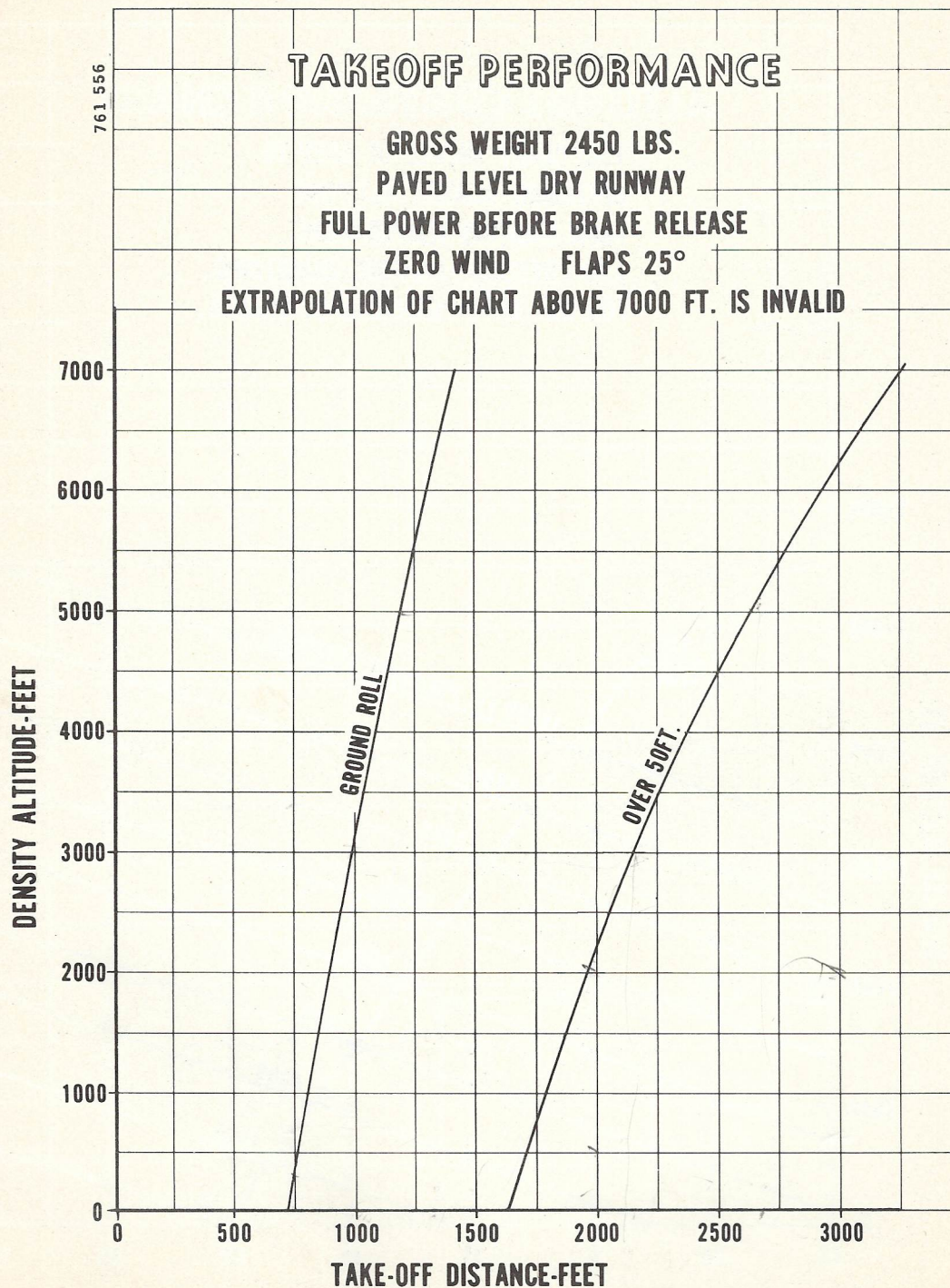
C. G. RANGE AND WEIGHT



PA-28-180 CHEROKEE



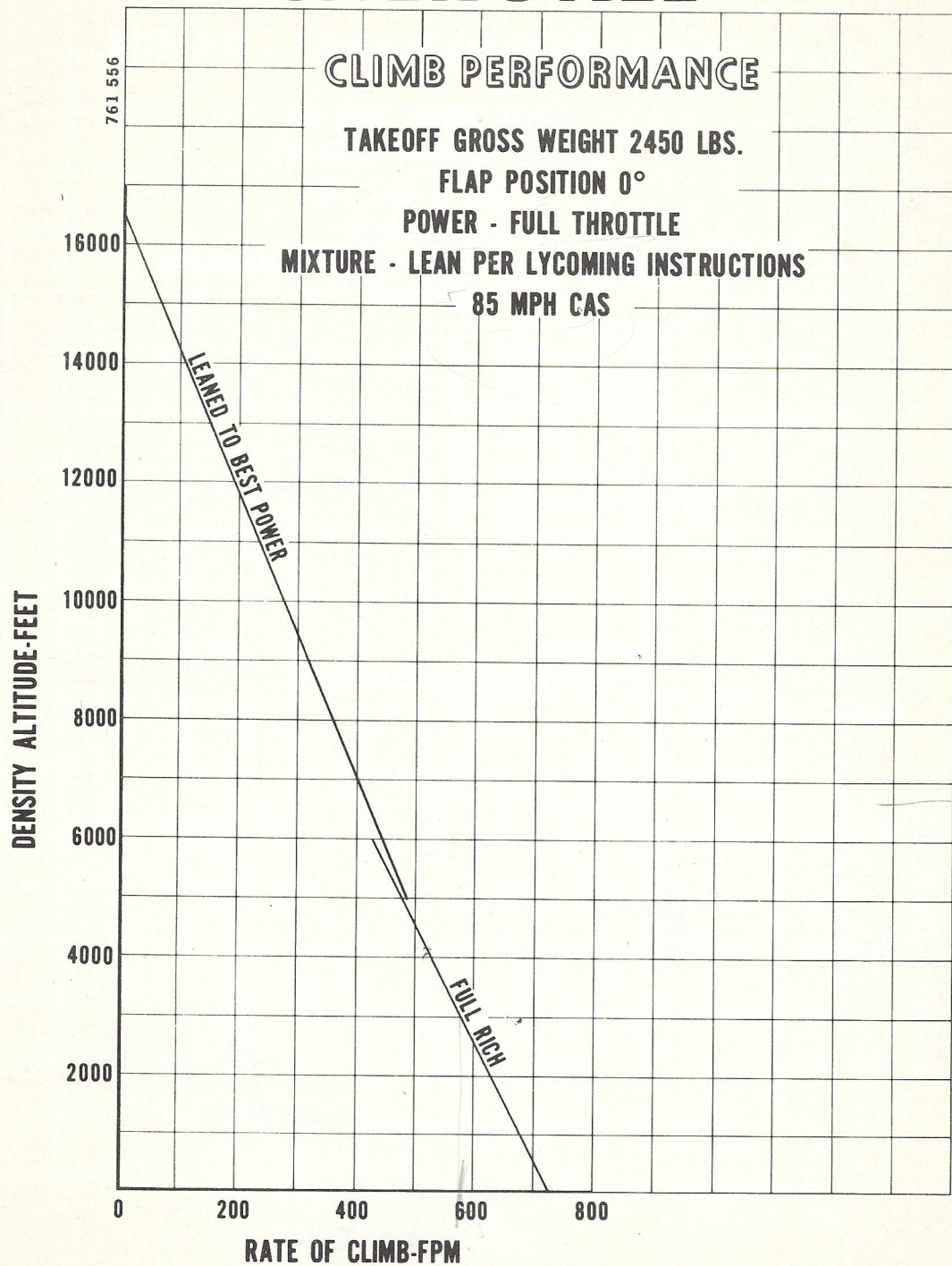
PA-28-180 CHEROKEE



NOTE: SEE SECTION 7 FOR EFFECTS OF AIR CONDITIONING
INSTALLATION ON PERFORMANCE.

PERFORMANCE CHARTS
REVISED: JUNE 17, 1974

PA-28-180 CHEROKEE



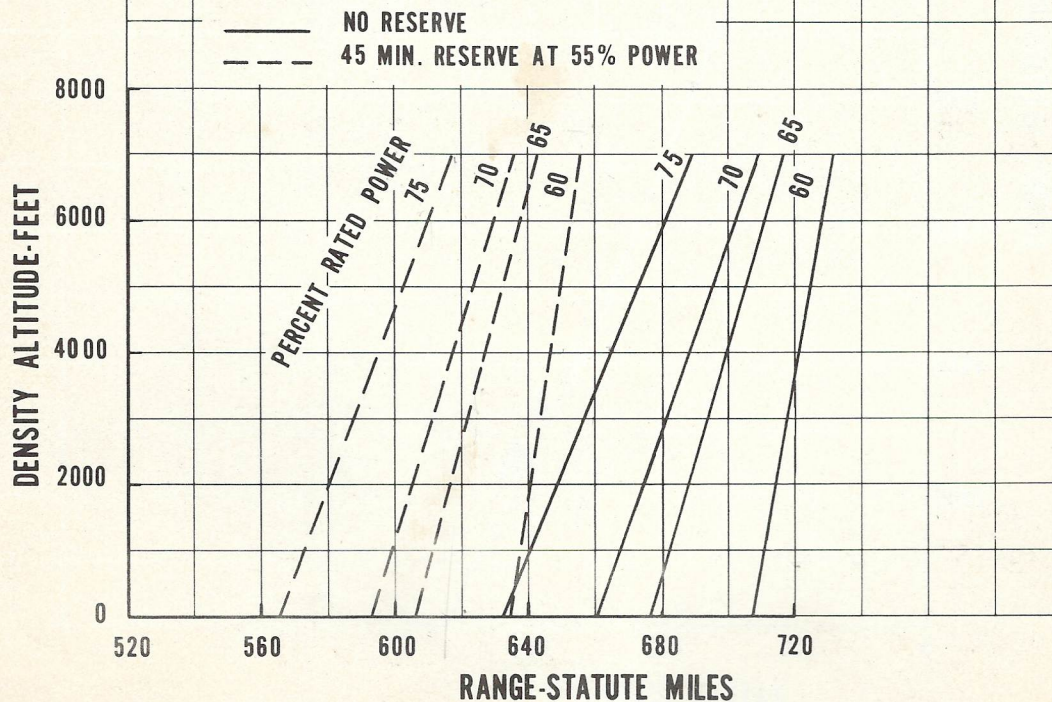
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PA-28-180 CHEROKEE

CRUISE PERFORMANCE - RANGE

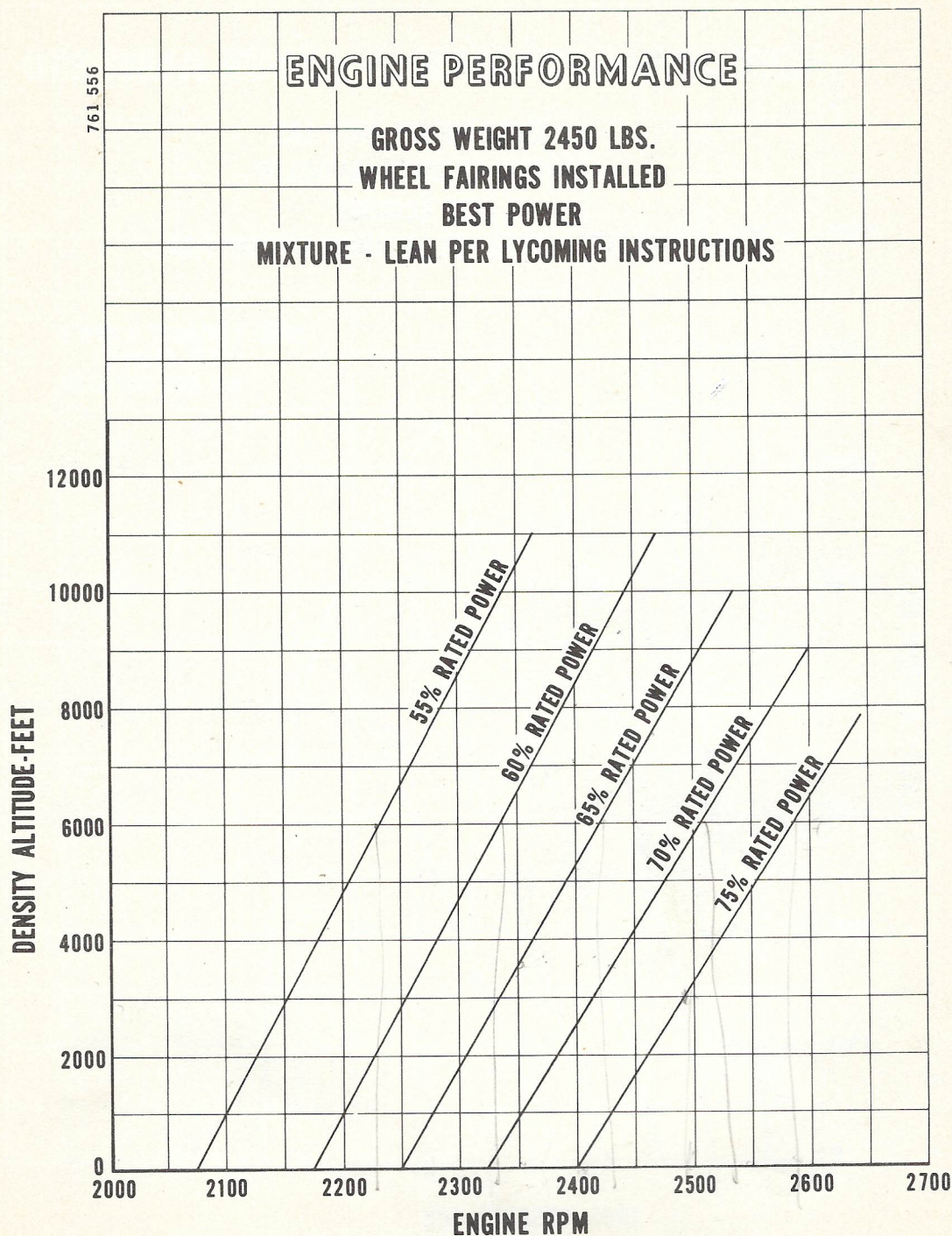
GROSS WEIGHT 2450 LBS.
WHEEL FAIRINGS INSTALLED
48 GAL. USABLE FUEL
BEST ECONOMY
MIXTURE - LEAN PER LYCOMING INSTRUCTIONS
ZERO WIND

PERCENT RATED POWER	APPROX. GPH
75	8.8
70	8.1
65	7.6
60	7.0



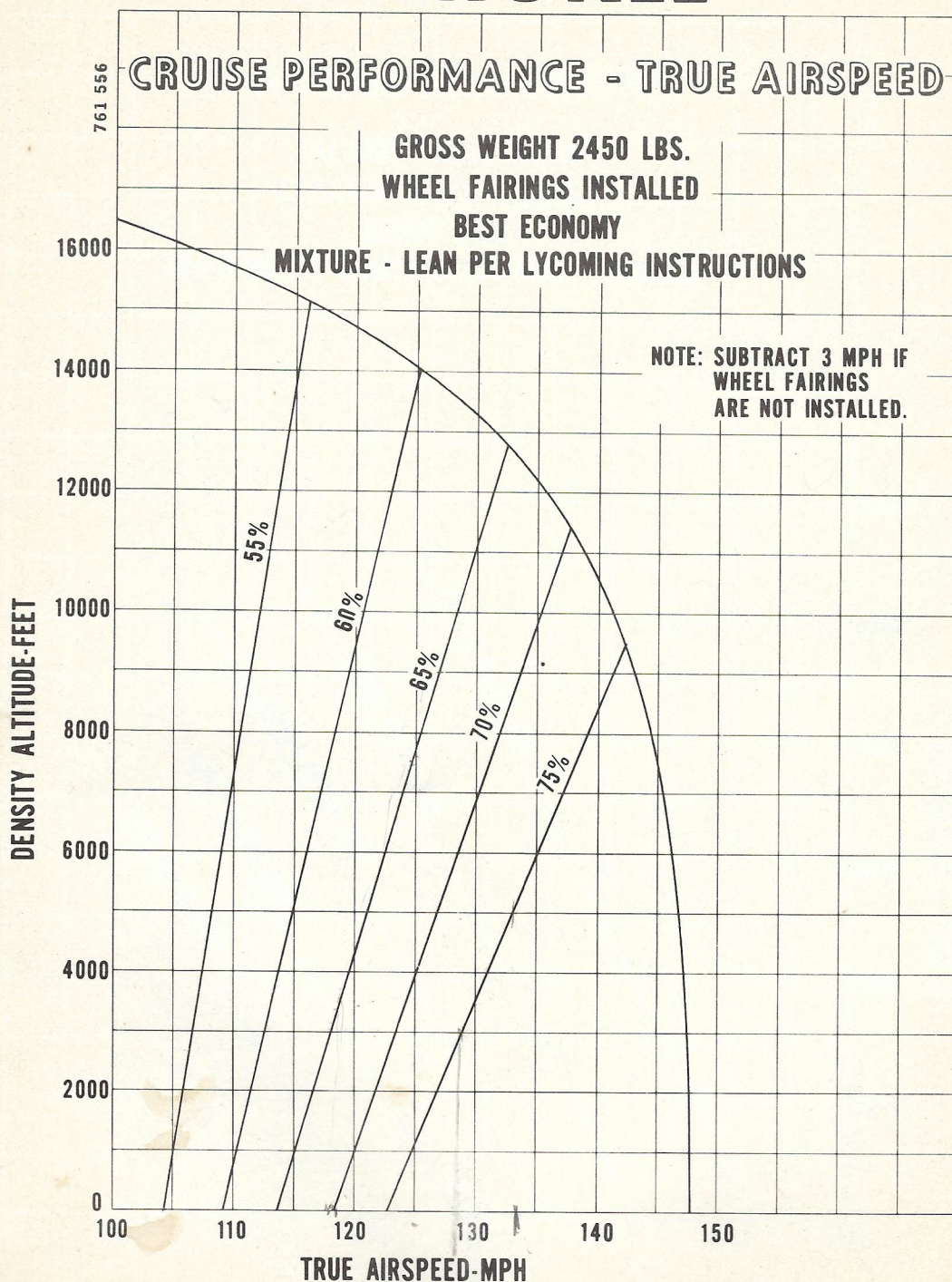
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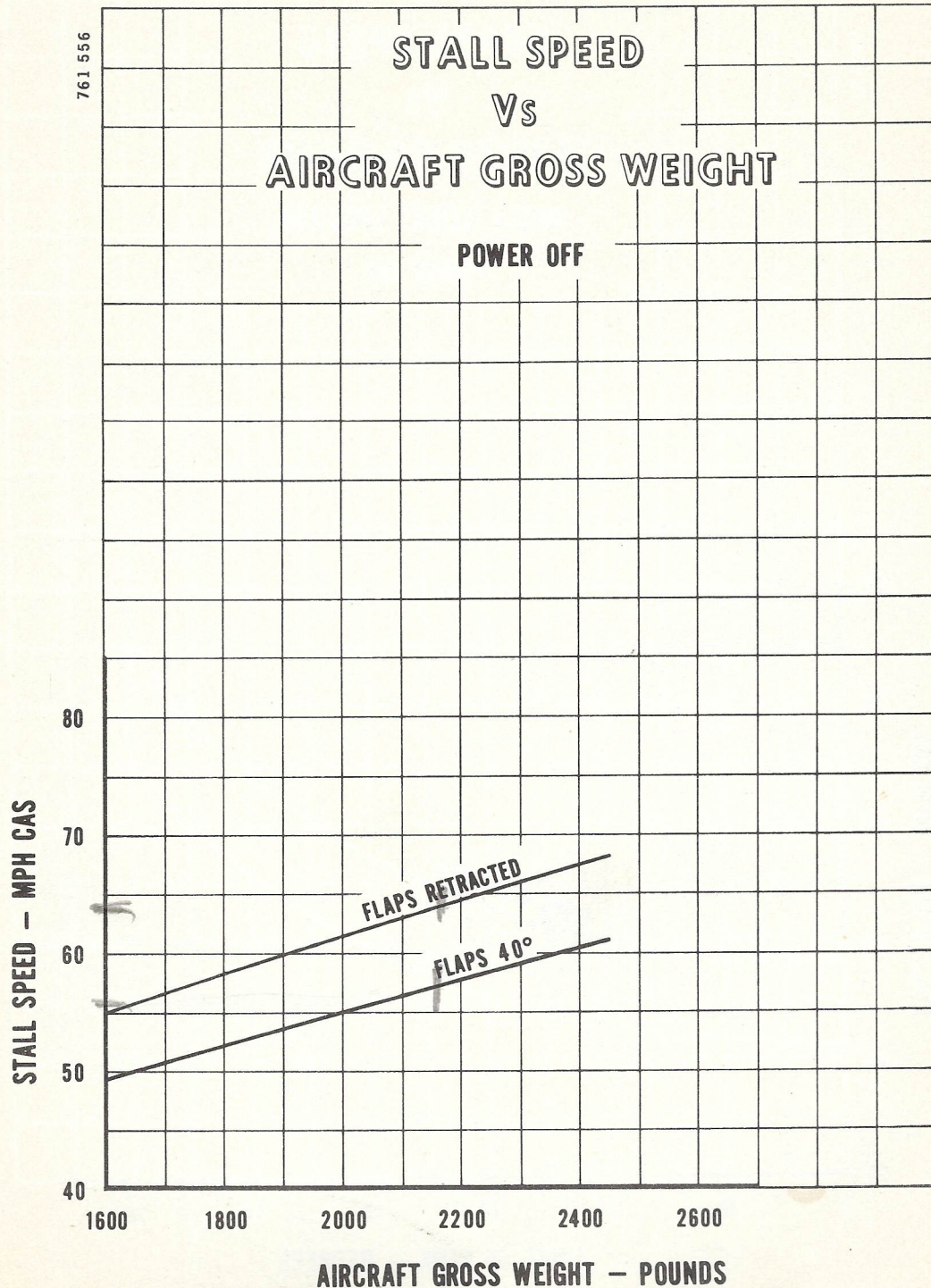
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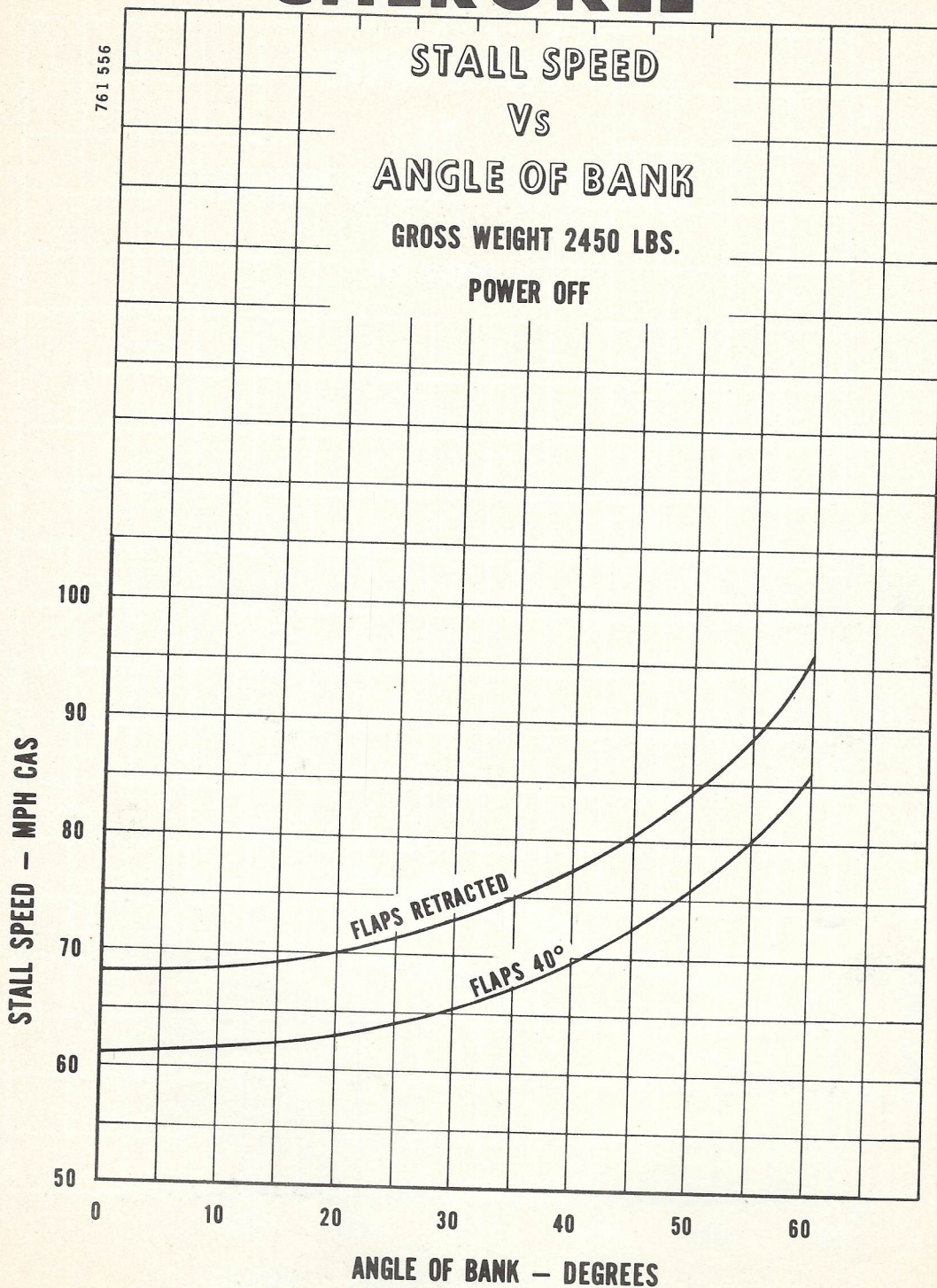
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PA-28-180 CHEROKEE



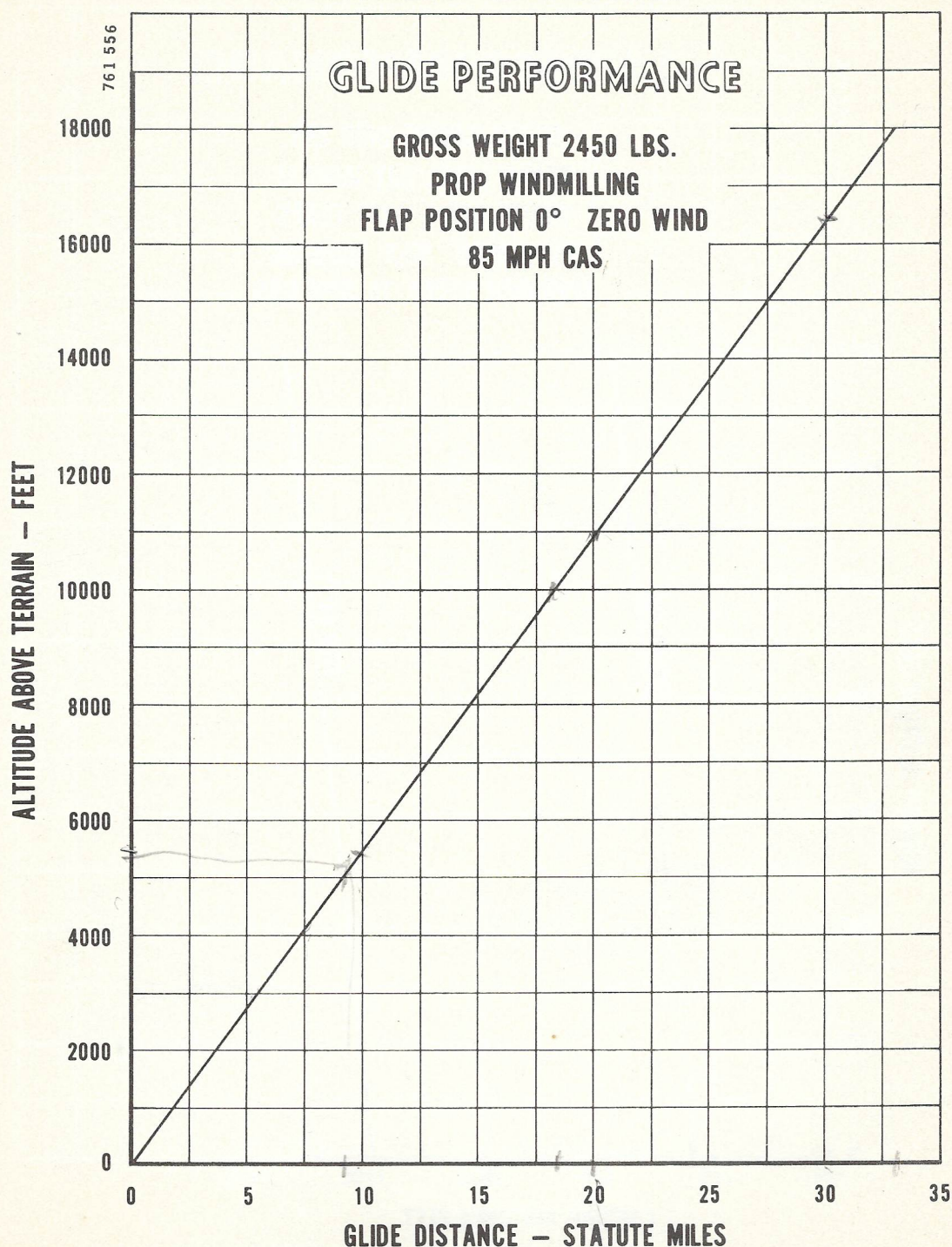
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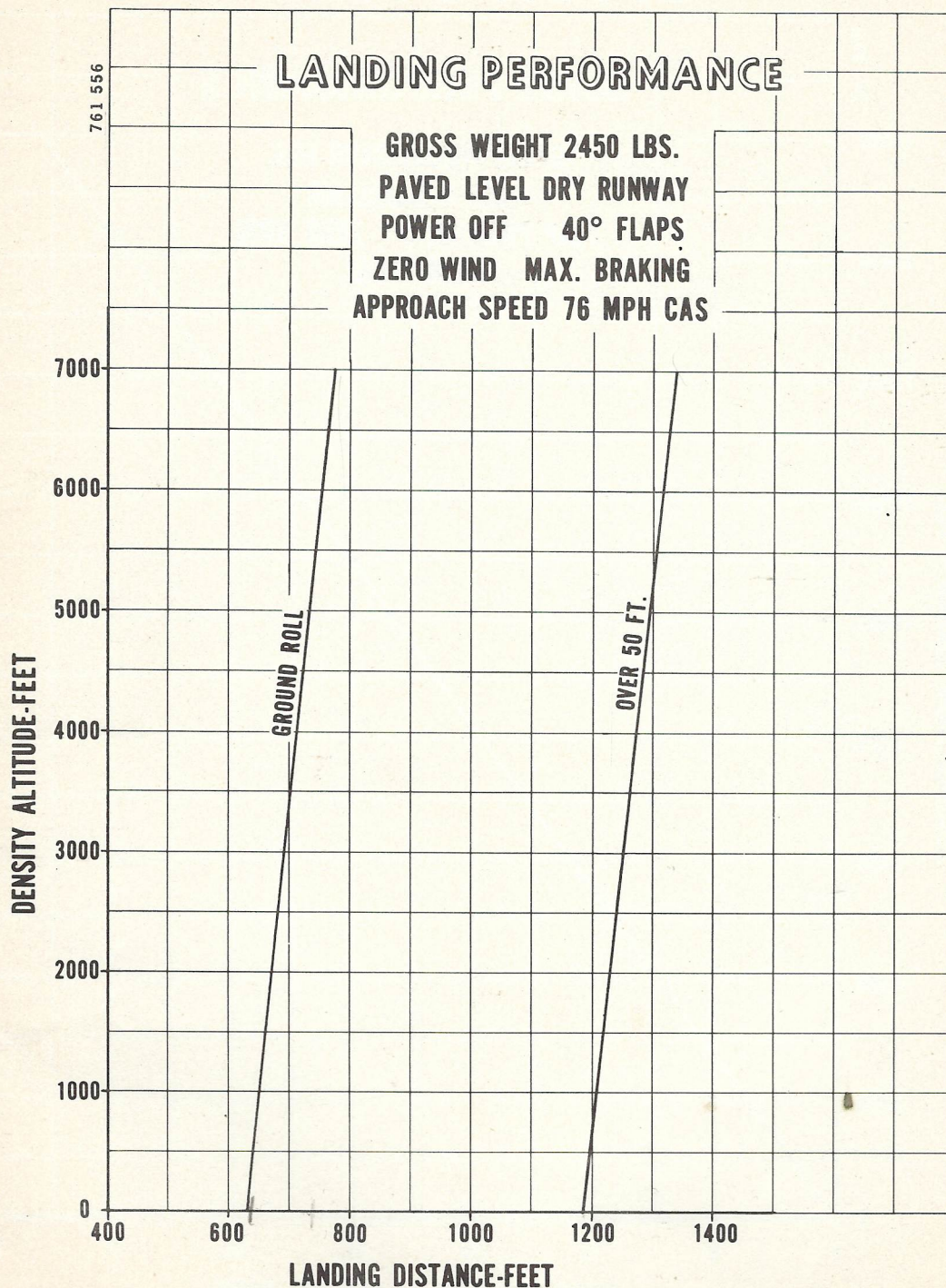
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