

N41376

PA-28-151

Limitations, Weight & Balance, Performance Charts

SECTION I
LIMITATIONS

The following limitations must be observed in the operation of this airplane:

A. ENGINE

Lycoming O-320-E3D

ENGINE LIMITS

For all operations 2700 RPM, 150 HP

B. FUEL

80/87 octane aviation fuel minimum grade

C. PROPELLER

Sensenich 74DM6, maximum diameter 74 inches. Minimum diameter 72 inches. Static RPM at maximum permissible throttle setting: Not over 2375, not under 2275. No additional tolerance permitted.

McCaughey 1C160/EGM7653, maximum diameter 76 inches. Minimum diameter 74.5 inches. Static RPM at maximum permissible throttle setting: Not over 2400, not under 2300. No additional tolerance permitted.

D. POWER INSTRUMENTS

OIL TEMPERATURE

Green Arc (Normal Operating Range)

75° F to 245° F
245° F

Red Line (Maximum)

OIL PRESSURE

Green Arc (Normal Operating Range)

60 PSI to 90 PSI

Yellow Arc (Caution Range)

25 PSI to 60 PSI

Red Line (Minimum)

25 PSI

Red Line (Maximum)

90 PSI

FUEL PRESSURE

Green Arc (Normal Operating Range)

.5 PSI to 8 PSI

Red Line (Minimum)

.5 PSI

Red Line (Maximum)

8 PSI

TACHOMETER

Green Arc (Normal Operating Range)

500 to 2700 RPM

Red Line (Maximum Continuous Power)

2700 RPM

CHEROKEE WARRIOR

POWER PLANT

Engine (Lycoming)	O-320-E3D
Rated Horsepower	150
Rated Speed (rpm)	2700
Bore (inches)	5.125
Stroke (inches)	3.875
Displacement (cubic inches)	319.8
Compression Ratio	7:1
Dry Weight (pounds)	276
Propeller	
McCauley	1C160/EGM7653
Sensenich	74DM6-0-58

FUEL AND OIL

Fuel Capacity (U.S. gal) (standard)	50
Fuel Capacity (U.S. gal) Usable	48
Oil Capacity (qts)	8
Fuel, Aviation Grade	
Minimum Octane	80/87
Specified Octane	80/87
Alternate Fuels	Refer to Fuel Requirements, Section 10 - Page 10-9

DIMENSIONS

Wing Span (ft)	35
Wing Area (sq ft)	170.0
Length (ft)	23.8
Height (ft)	7.3
Wing Loading (lbs per sq ft)	13.7
Power Loading (lbs per hp)	15.5
Propeller Diameter (in.)	
McCauley	76
Sensenich	74
Turning Radius	13.0

BAGGAGE

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

LANDING GEAR

Wheel Base (ft)	6.7
Wheel Tread (ft)	10.0
Tire Pressure (psi)	
Nose	30
Main	24
Tire Size	
Nose (4 ply rating)	5.00 x 5
Main (4 ply rating)	6.00 x 6

CHEROKEE WARRIOR

E. AIRSPEED LIMITATIONS AND AIRSPEED INSTRUMENT MARKINGS (Calibrated Airspeed)

NEVER EXCEED	176 MPH
MAXIMUM STRUCTURAL CRUISE	140 MPH
MANEUVERING	124 MPH
→ FLAPS EXTENDED (Ser. nos. 7415001 through 7515449)	125 MPH
FLAPS EXTENDED (Ser. nos. 7615001 and up)	115 MPH
MAXIMUM POSITIVE LOAD FACTOR	(Normal Category) 3.8
MAXIMUM POSITIVE LOAD FACTOR	(Utility Category) 4.4
MAXIMUM NEGATIVE LOAD FACTOR	No inverted maneuvers approved

AIRSPEED INSTRUMENT MARKINGS

Red Radial Line (Never Exceed)	176 MPH (153 KTS)
Yellow Arc (Caution Range)	140 MPH to 176 MPH
(Smooth Air Only)	(122 KTS to 153 KTS)
Green Arc (Normal Operating Range)	64.5 MPH to 140 MPH
	(56 KTS to 122 KTS)
White Arc (Flap Down Range) (Ser. nos. 7415001 through 7515449)	58 MPH to 125 MPH
	(50 KTS to 109 KTS)
White Arc (Flap Down Range) (Ser. nos. 7615001 and up)	58 MPH to 115 MPH
	(50 KTS to 100 KTS)

F. MAXIMUM WEIGHT

Normal Category	2325 LBS
Utility Category	1950 LBS

G. BAGGAGE CAPACITY

200 LBS

H. C. G. RANGE

The datum used is 78.4 inches ahead of wing leading edge at the intersection of the straight and tapered section.

1. Normal Category

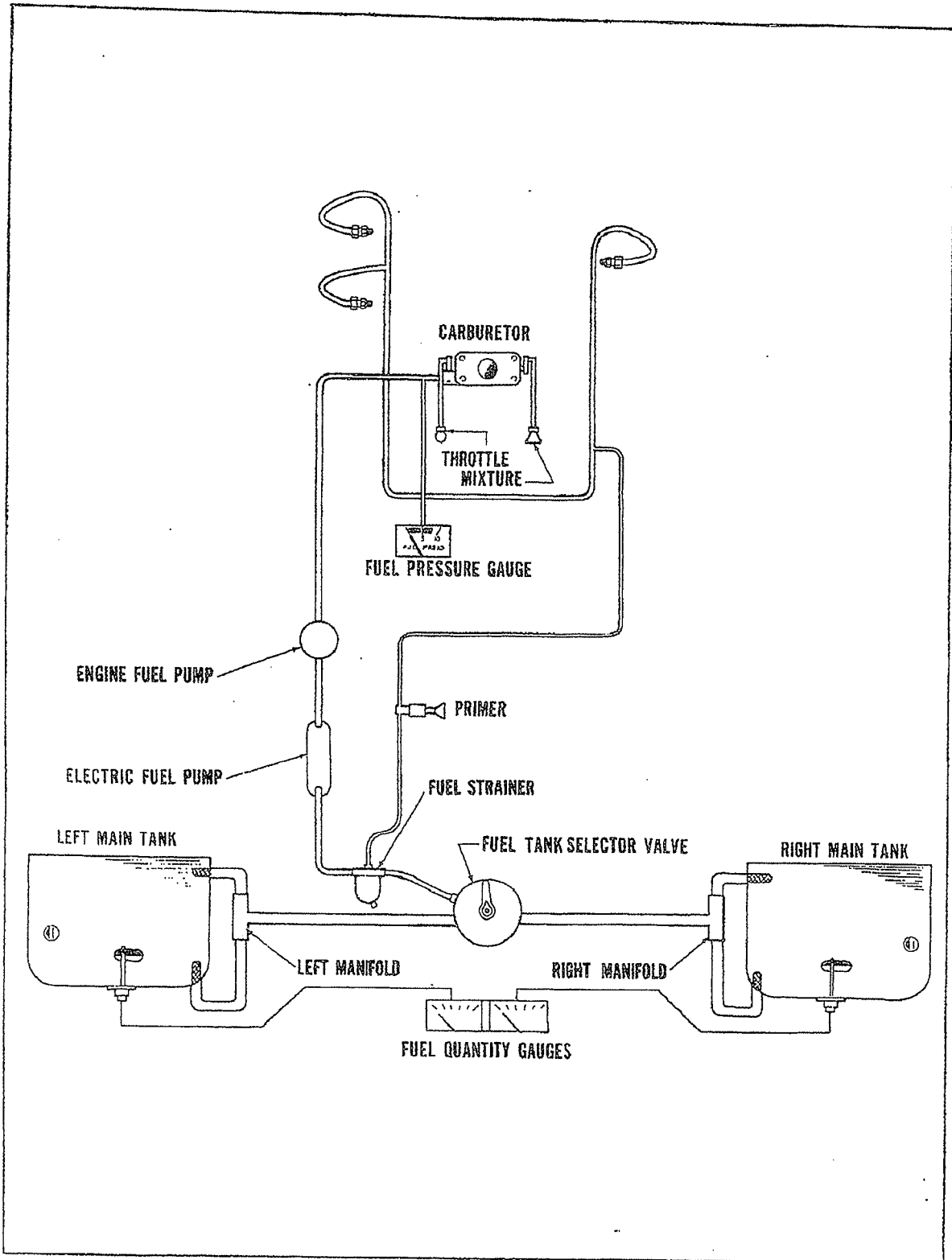
Weight (Pounds)	Forward Limit (In. Aft of Datum)	Rearward Limit (In. Aft of Datum)
2325	87.0	93.0
1950	83.0	93.0

2. Utility Category

Weight (Pounds)	Forward Limit (In. Aft of Datum)	Rearward Limit (In. Aft of Datum)
1950	83.0	86.5

Straight line variation between points given.

CHEROKEE WARRIOR



Fuel System Schematic (Ser. Nos. 7415001 through 7515449)

ISLIP AVIONICS INC

135 Schaeffer Dr.
L.I. MacArthur Airport
Ronkonkoma, NY 11779



Phone: (631) 588-3543
Fax: (631) 588-1313
E-mail: sales@islipavionics.com

REVISION TO WEIGHT AND BALANCE / EQUIPMENT LIST:

AIRCRAFT NUMBER: N41376
SERIAL NUMBER: 28-7415191

MAKE: Piper
MODEL: PA-28-151

DATA TAKEN FROM PREVIOUS WEIGHT AND BALANCE DATED: 09/11/2019

ITEM	WEIGHT	ARM	MOMENT
PREVIOUS DATA	1411.98	86.49	122,122.79
<i>Removals:</i>			
King KX-155 Nav/Com Radio	(5.5)	57.4	(314.6)
<i>Installations:</i>			
Garmin GNC-255A Nav/Com Radio	3.1	57.4	177.9
TOTALS:		1,409.60	121,986.18

<u>TOTAL MOMENT</u>	=	<u>121,986.18</u>	=	86.54
<u>TOTAL WEIGHT</u>		1,409.60		

AIRCRAFT GROSS WEIGHT: 2,325.00	NEW EMPTY WEIGHT: 1,409.60
NEW EMPTY WEIGHT C.G.: 86.54	NEW USEFUL LOAD: 915.40

DATE: 08/21/2020
Work Order: 7833



 AUTHORIZED SIGNATURE
 FAA CRS# FJ1R141K

CHEROKEE WARRIOR

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)

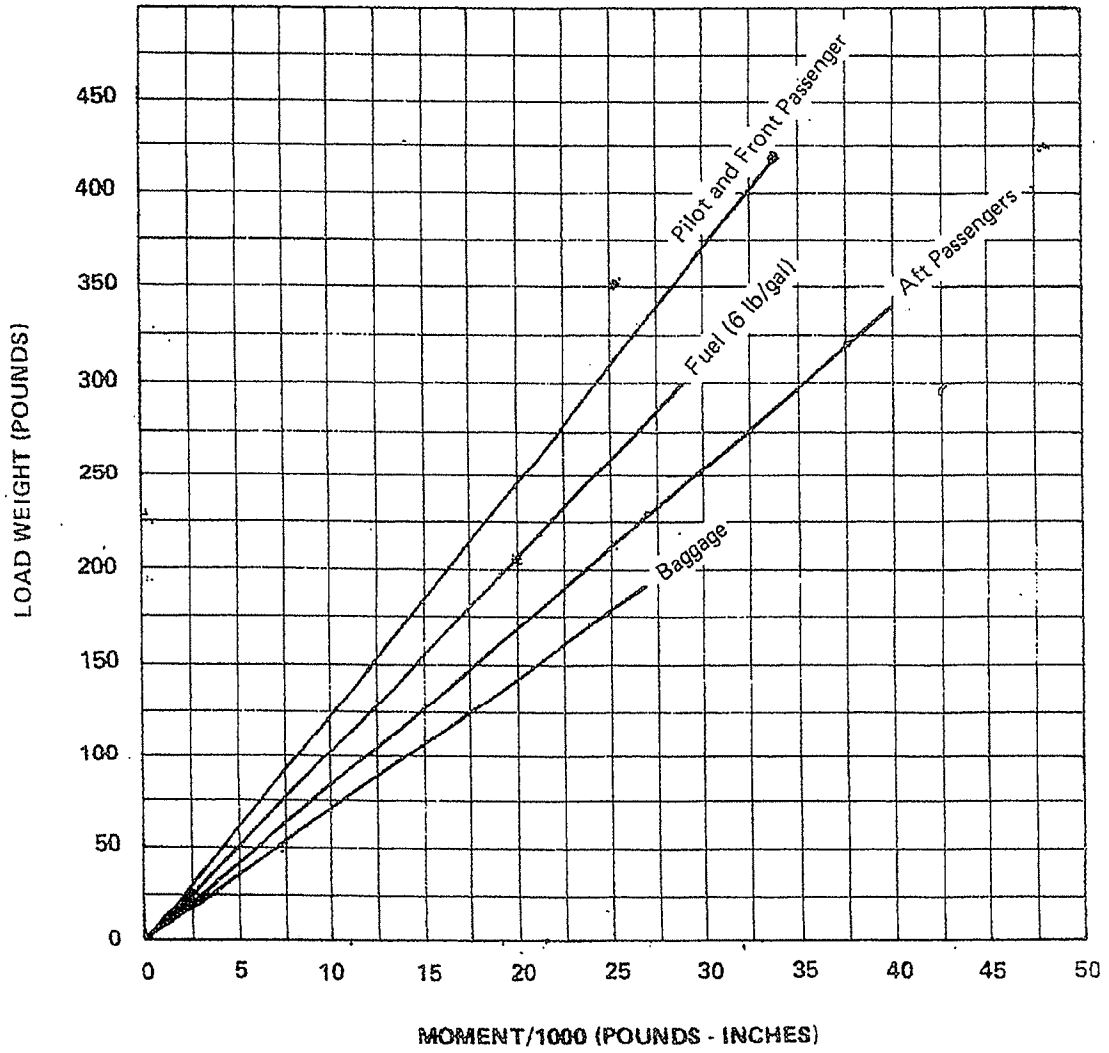
	Weight (Lbs)	Arm Aft Datum (Inches)	Moment (In-Lbs)
Licensed Empty Weight	1,409.6	86.54	121,986.18
Oil (8 quarts)	15	27.5	413
Pilot and Front Passenger		80.5	
Passengers, Aft* (Rear Seat)		118.1	
Fuel (48 Gal. Maximum)		95.0	
Baggage*		142.8	
Total Loaded Airplane			

The center of gravity (C.G.) of this sample loading problem is at _____ inches aft of the datum line. Locate this point () 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.

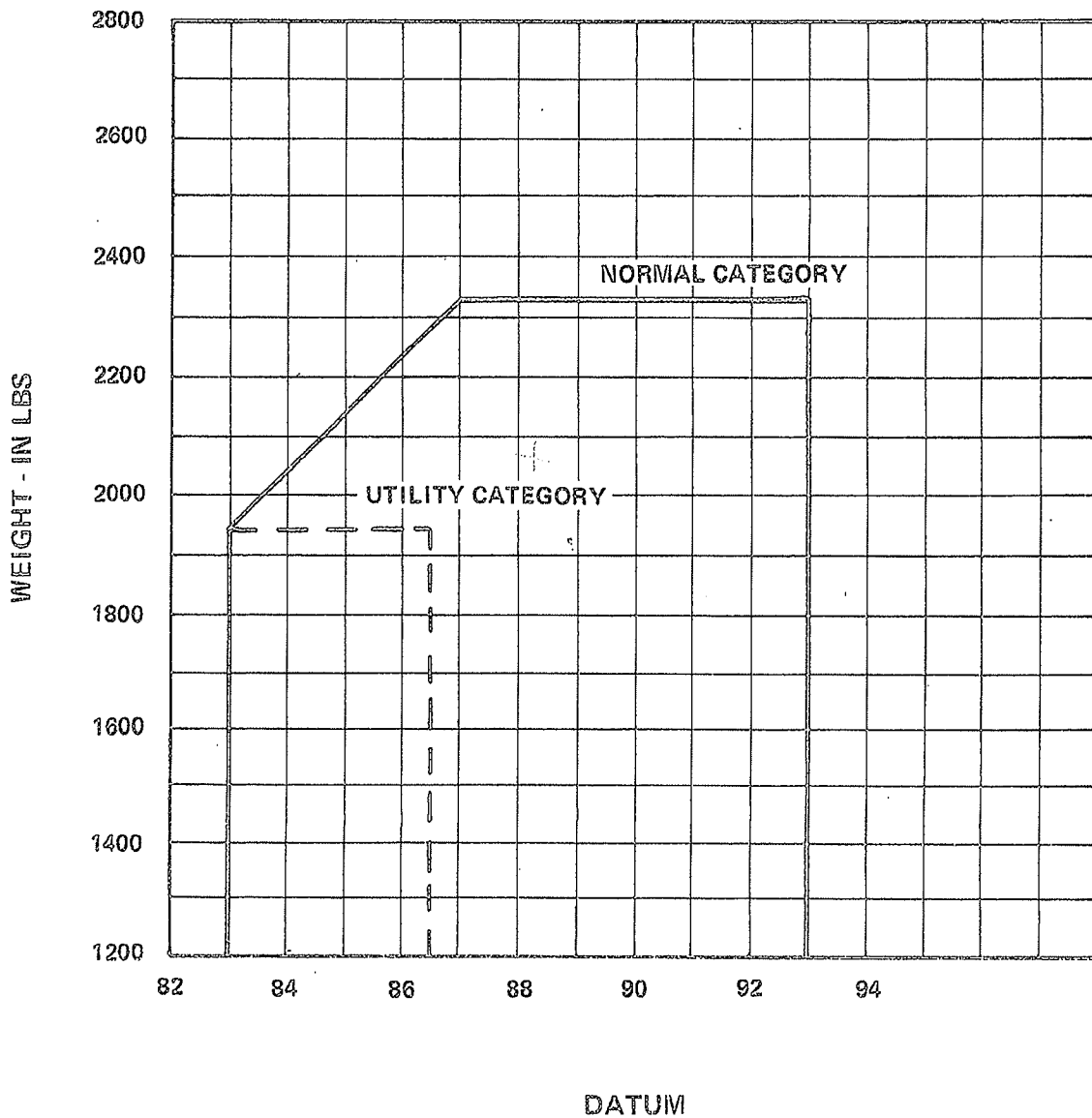
IT IS THE RESPONSIBILITY OF THE PILOT AND AIRCRAFT OWNER TO INSURE THAT THE AIRPLANE IS LOADED PROPERLY.

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

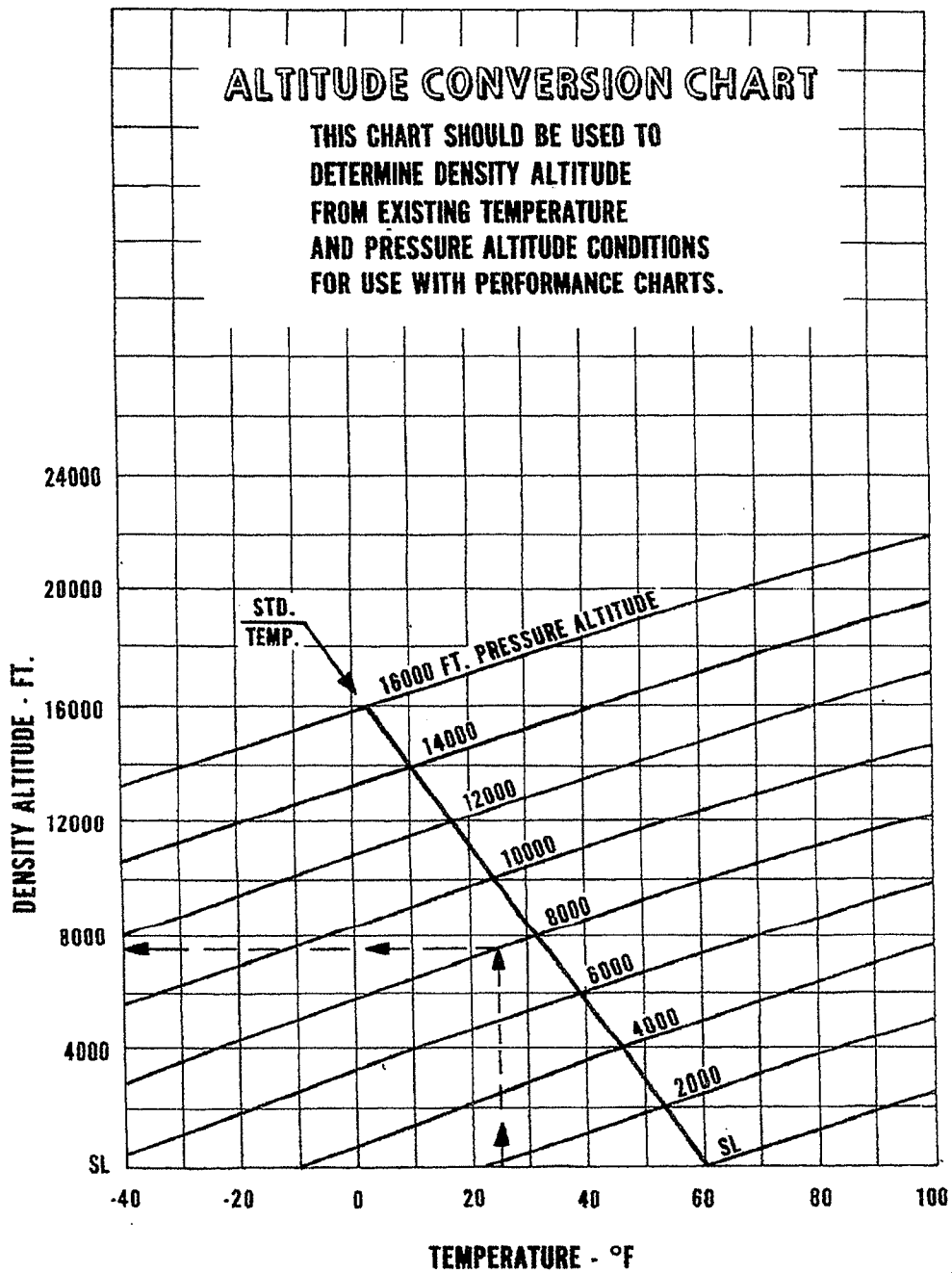
LOADING GRAPH



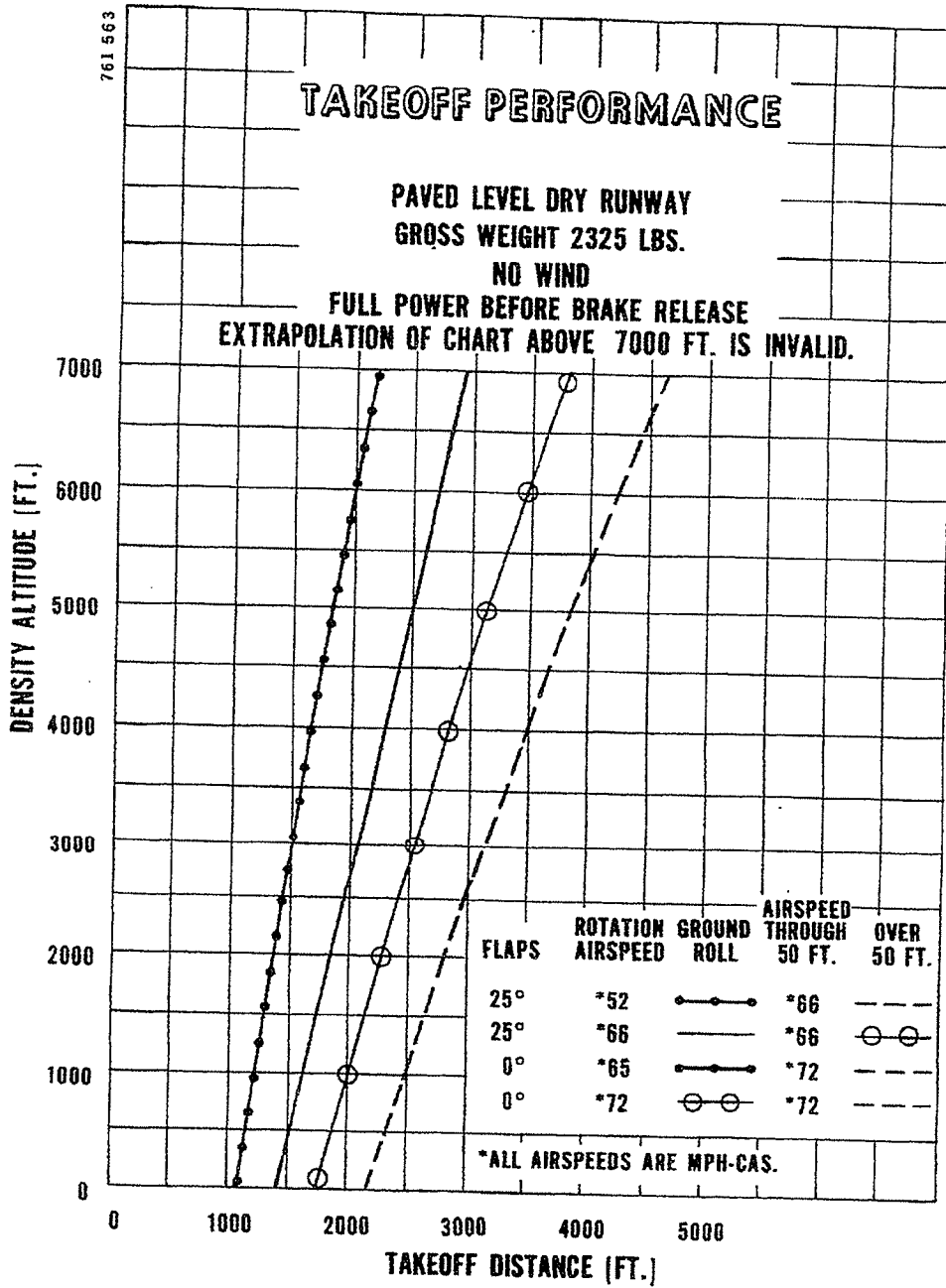
C. G. RANGE AND WEIGHT



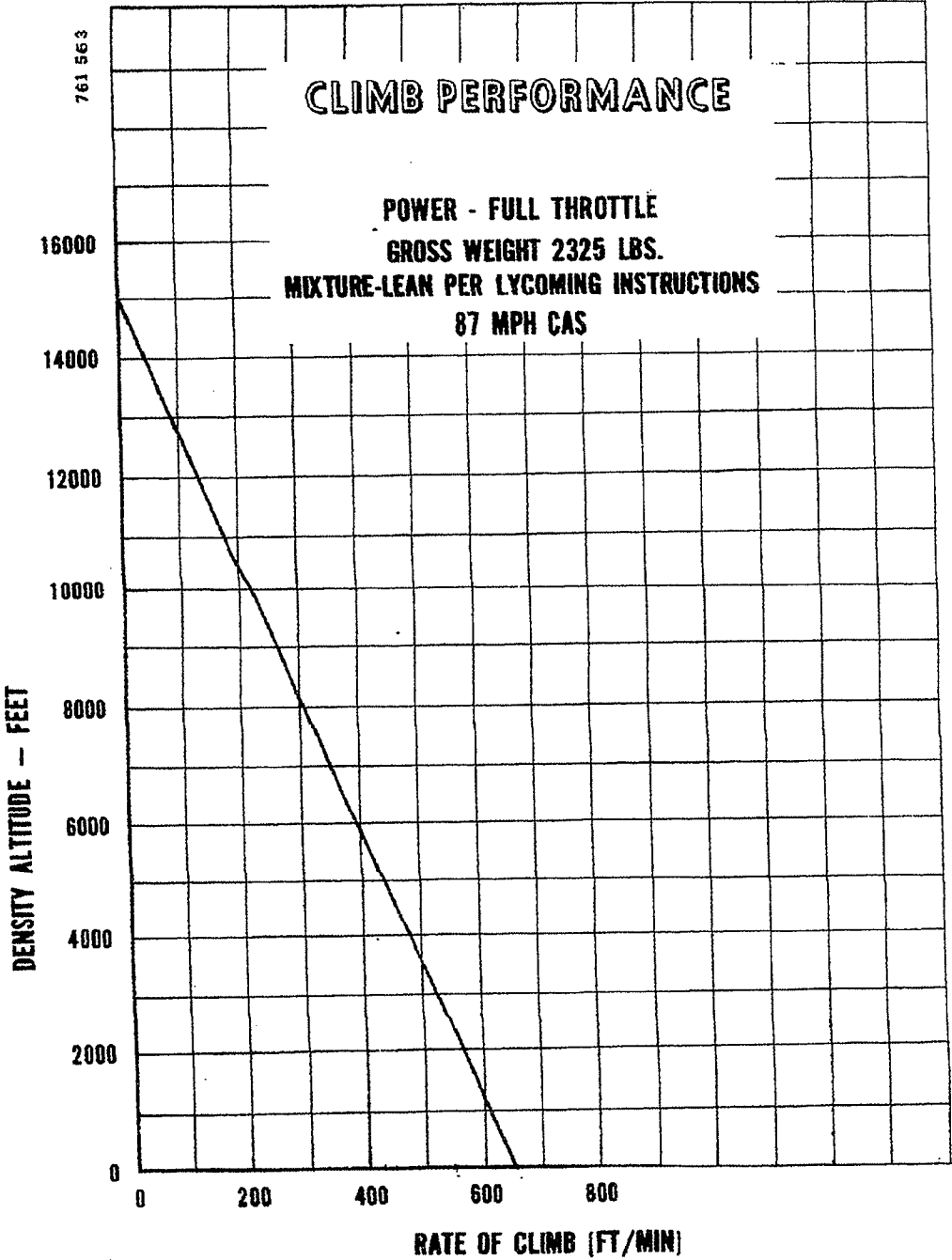
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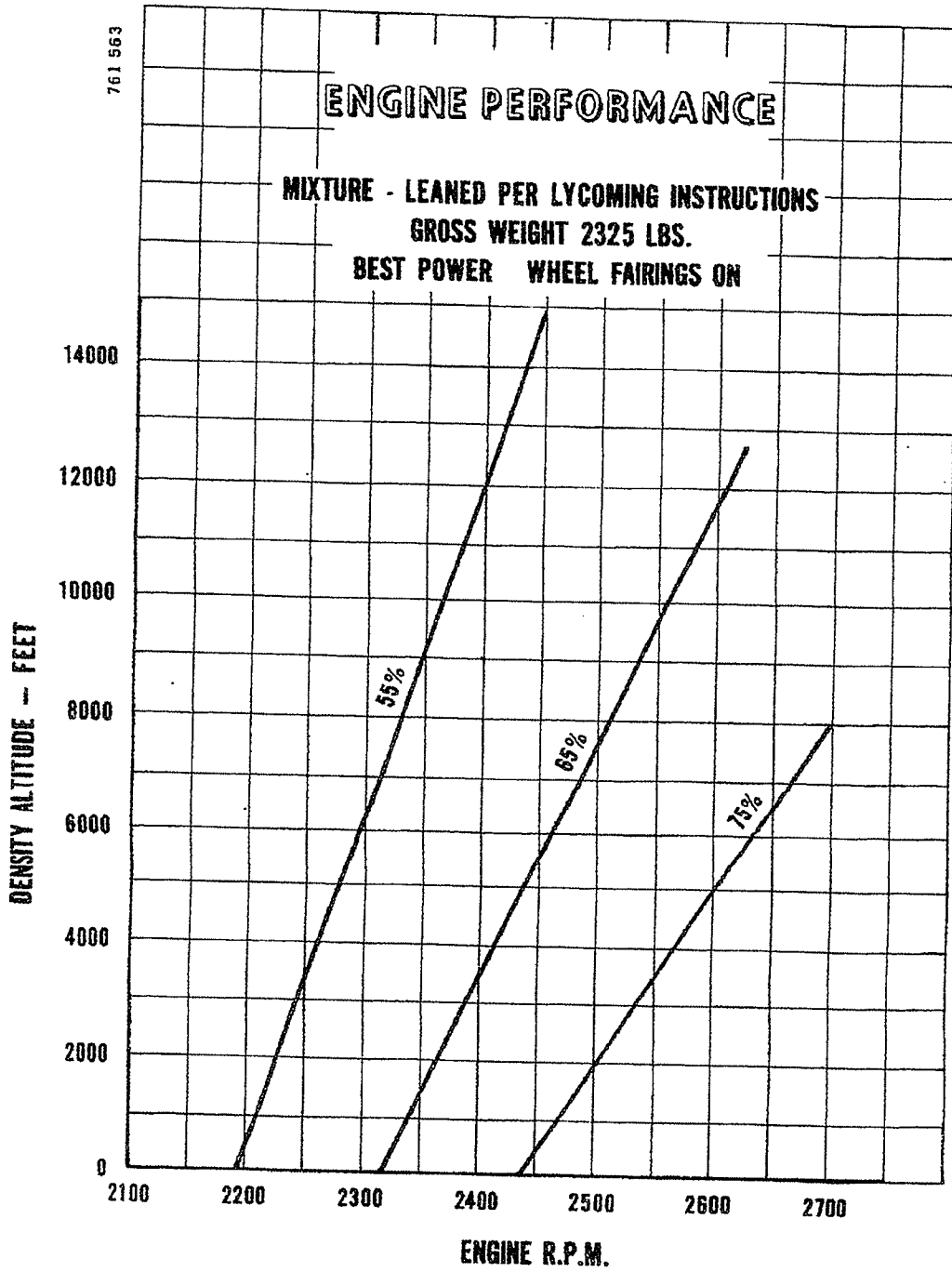
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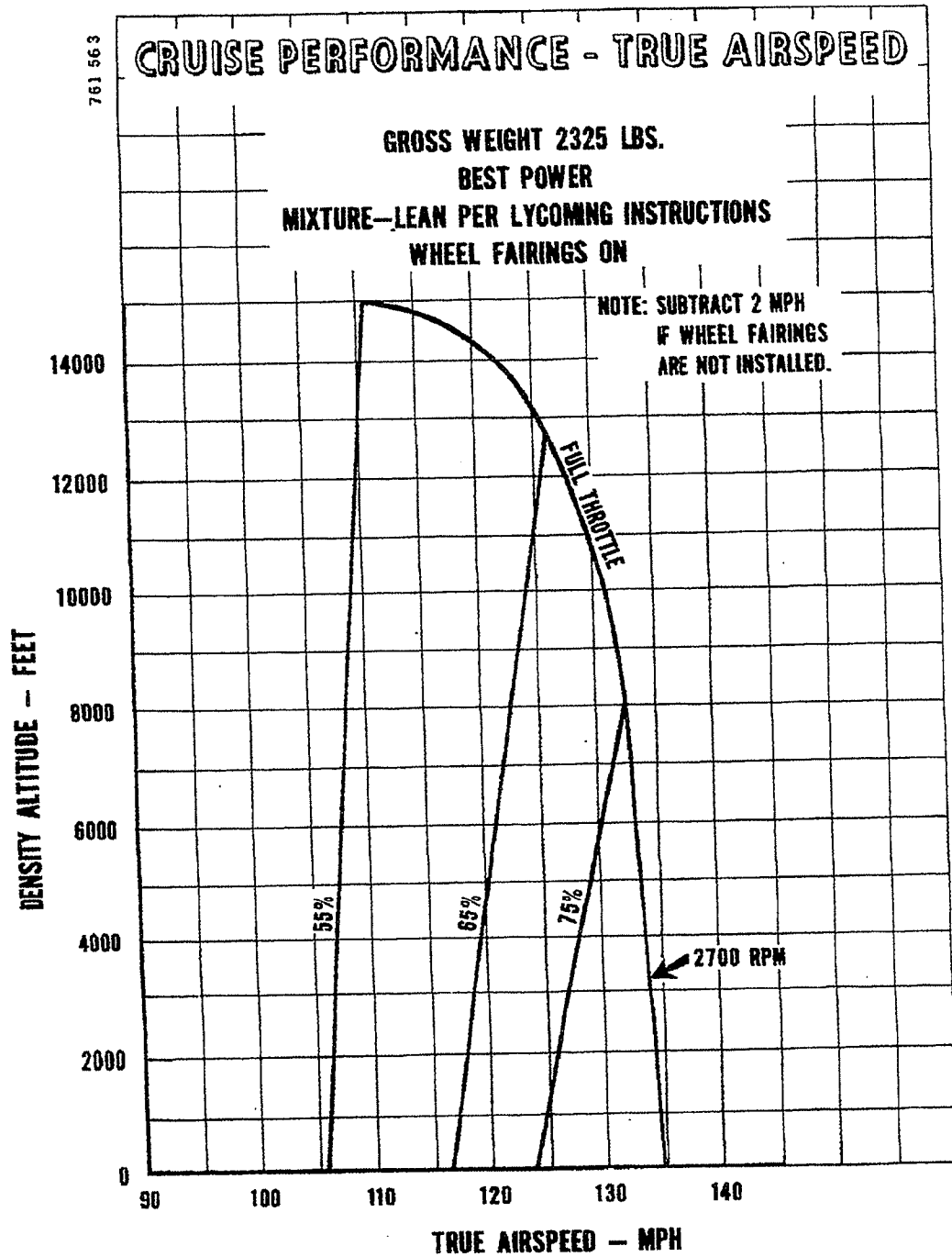
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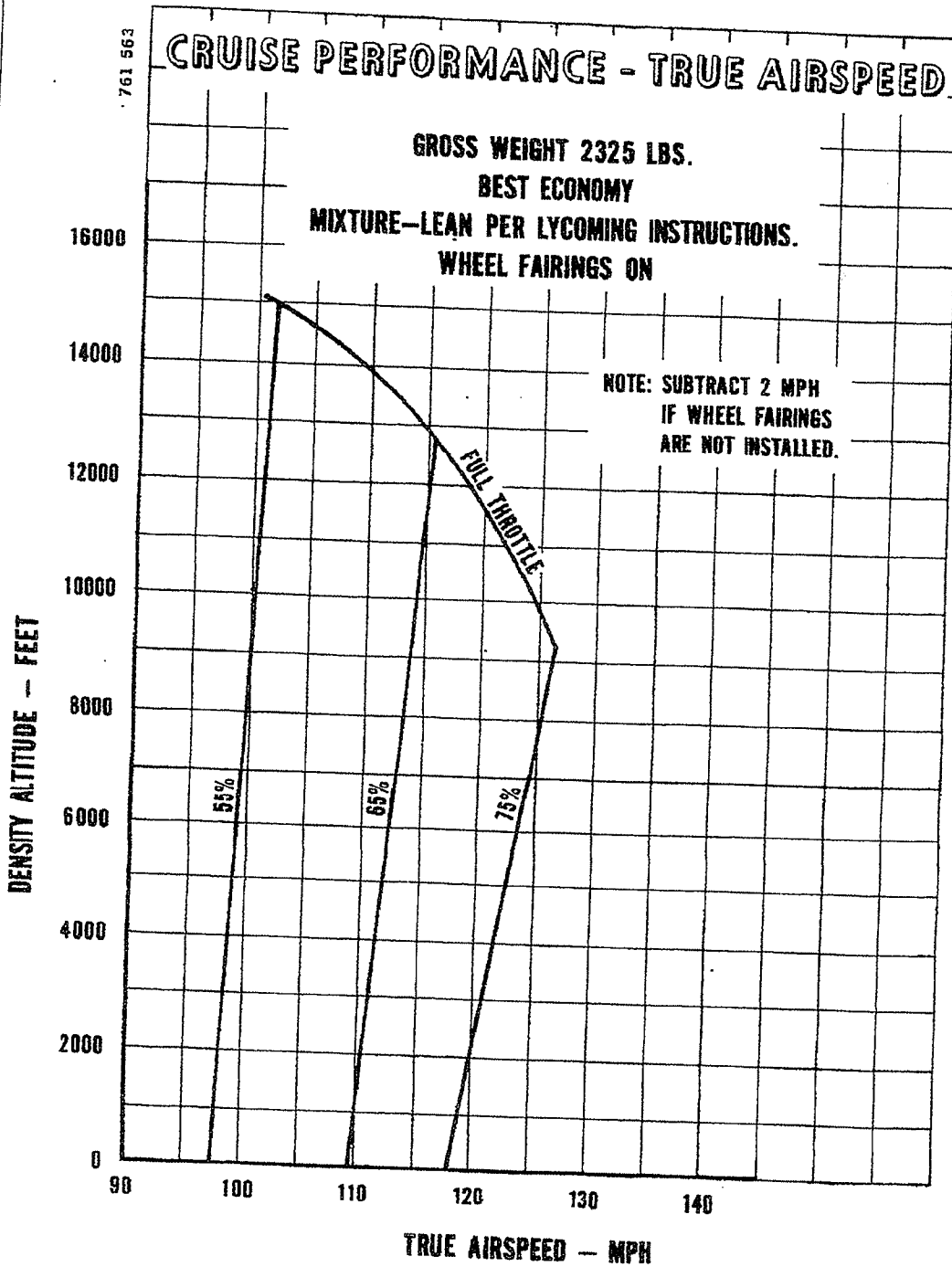
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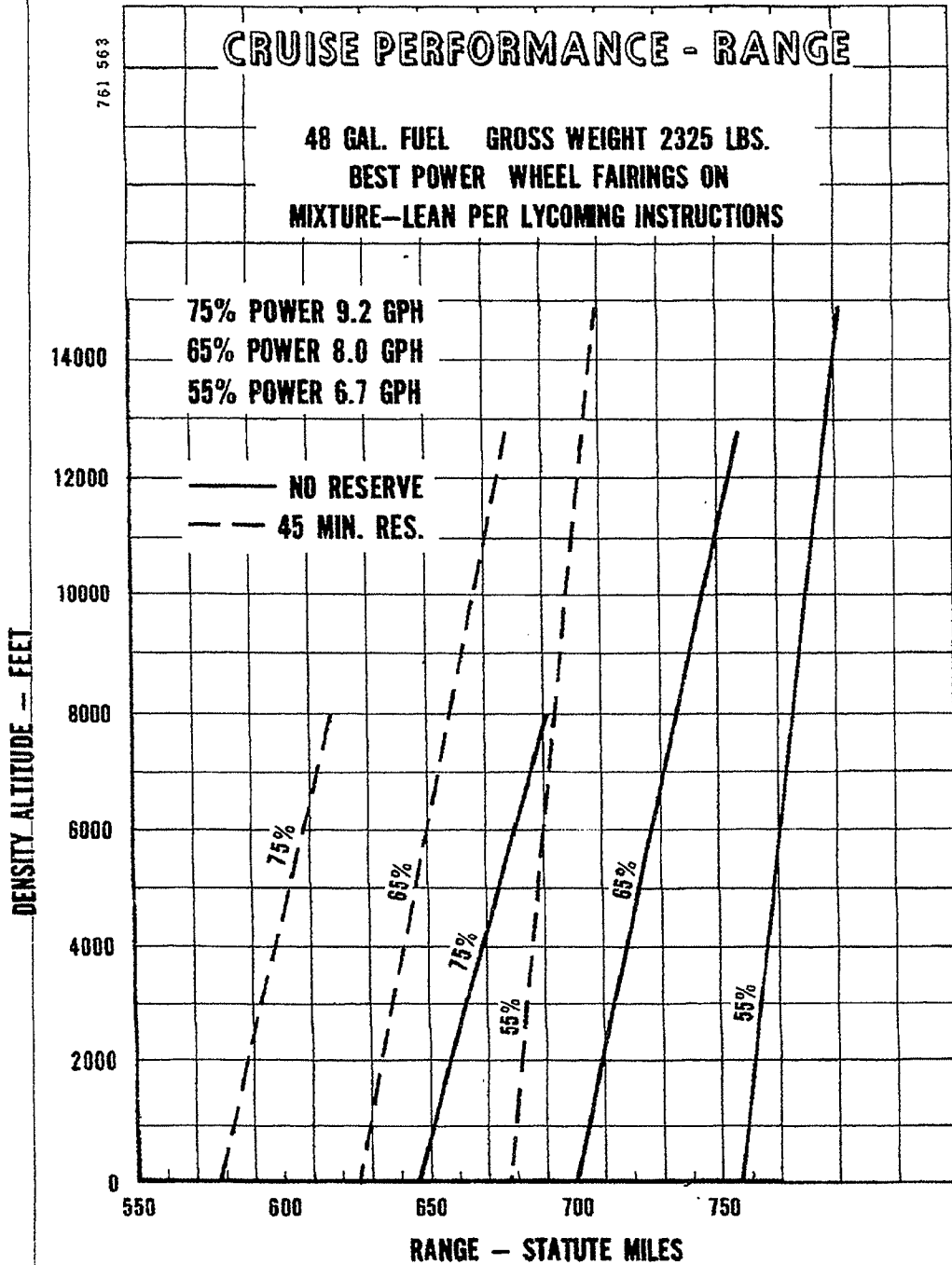
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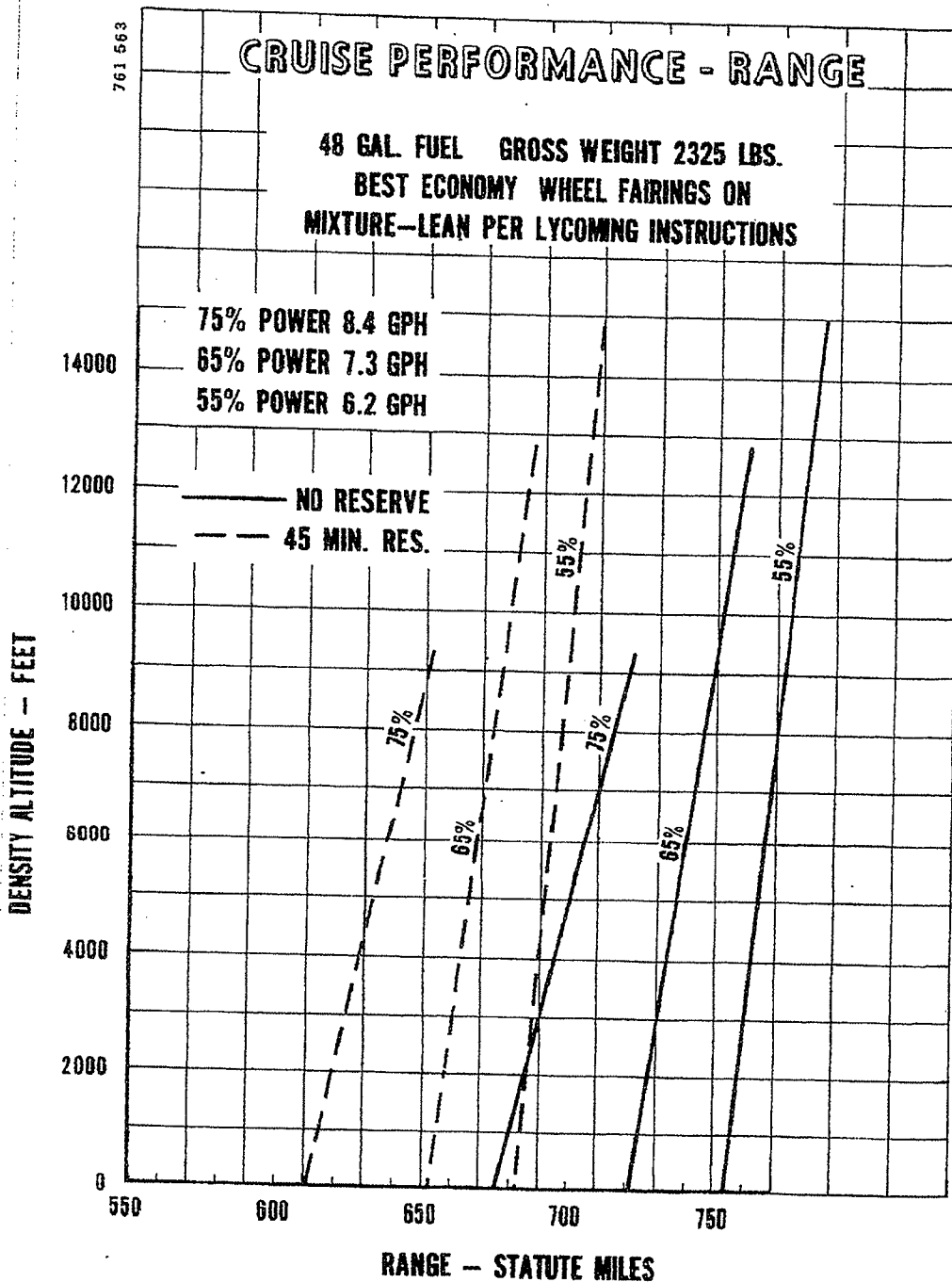
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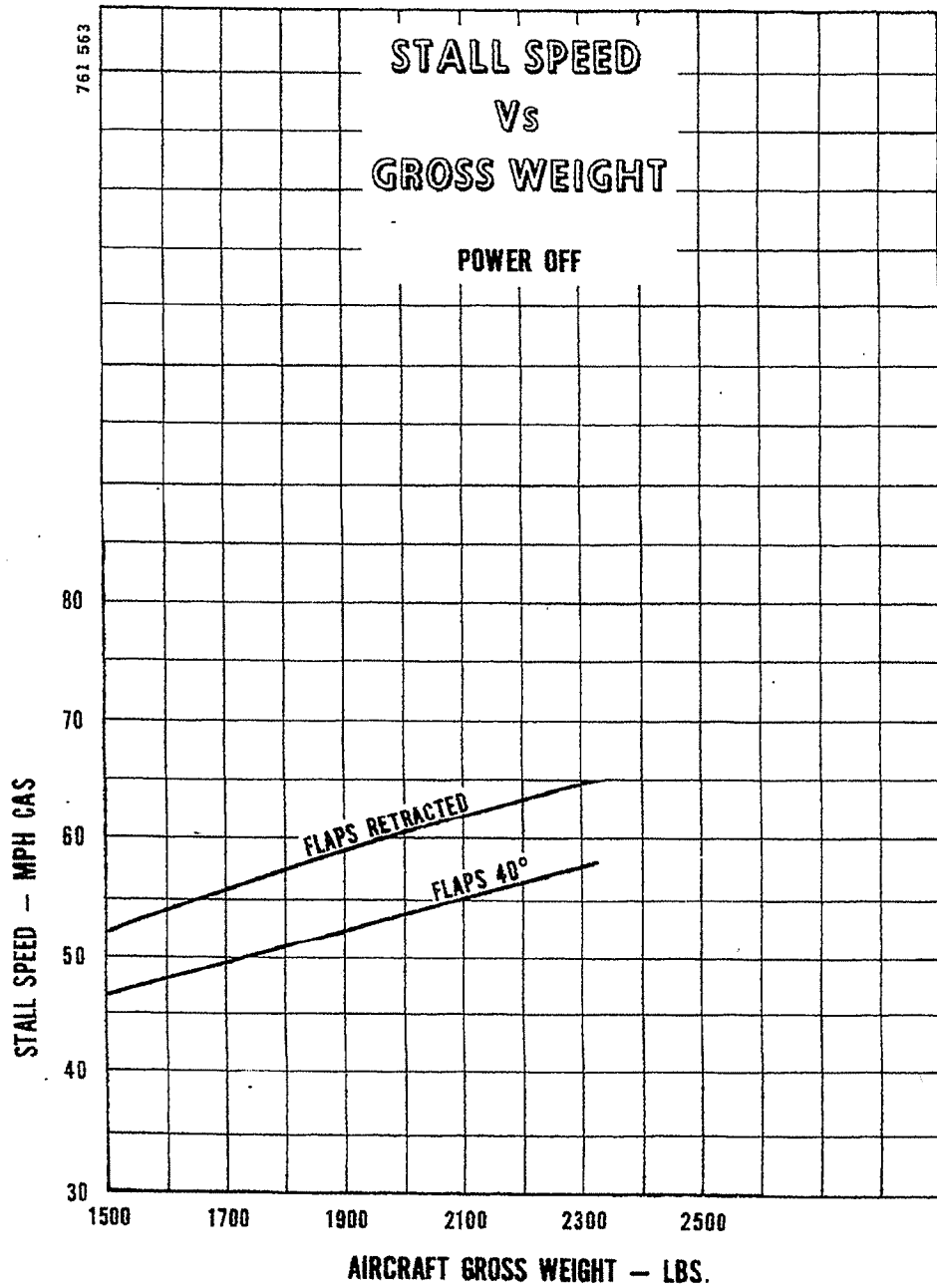
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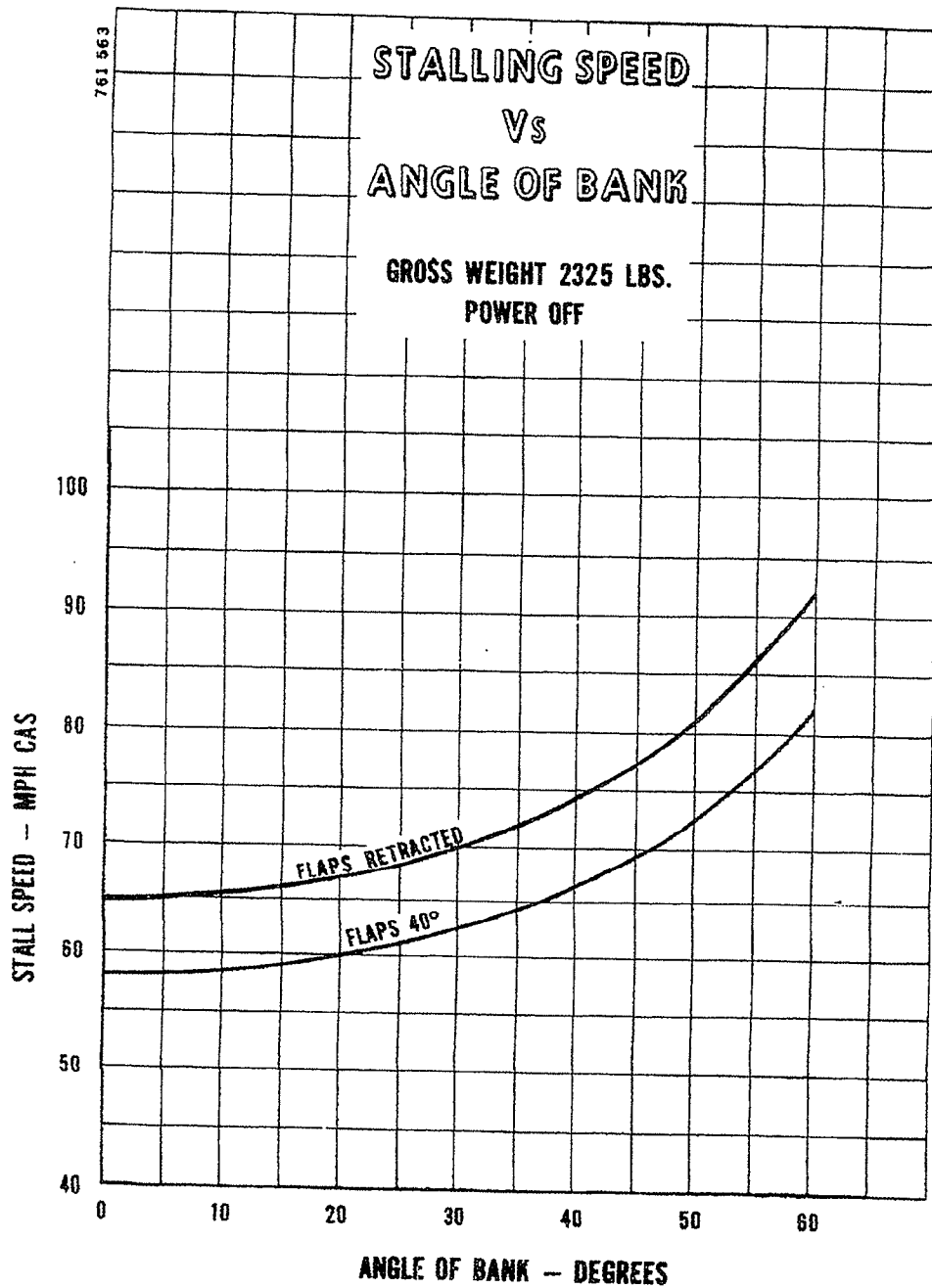
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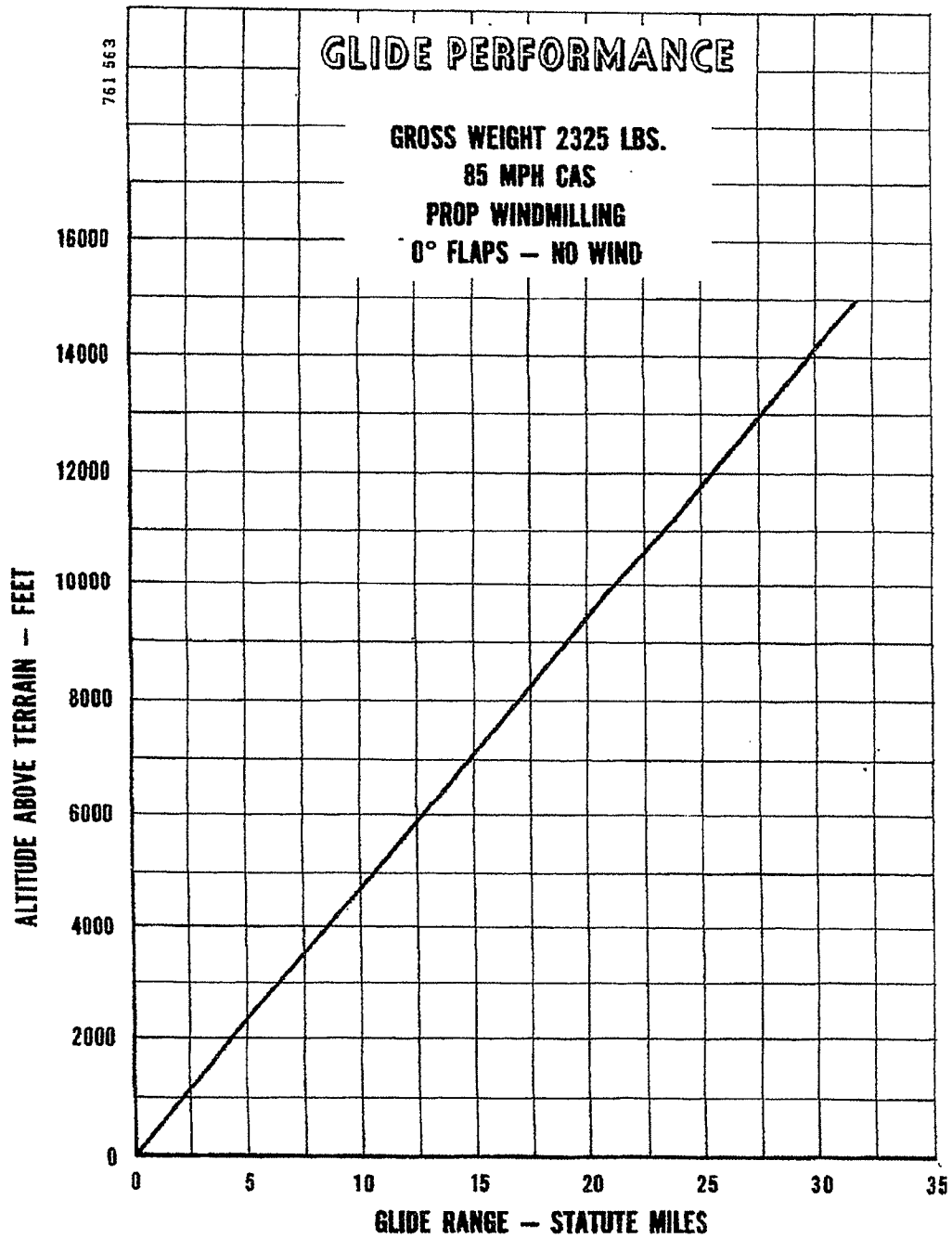
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