



ROBERTSON AIRCRAFT CORPORATION

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OWNER'S HANDBOOK SUPPLEMENT

FOR

ROBERTSON R/S PIPER TWIN COMANCHE PA- 30

You have made a prudent investment in increased safety, performance, and forgiveness characteristics of your airplane. Treated with the same respect you would give any fine piece of equipment, your Robertson R/S Twin Comanche will pay you continuous dividends, including the day you decide to sell. If ever you have a specific question, or wish to take advantage of our lifetime guarantee, you need only call or write our Headquarters.

This Owner's Handbook supplement is designed to complement, rather than replace, your Piper Twin Comanche Owner's Handbook. Those changed areas in specifications, performance, and operating procedures are detailed herein.

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839 West Perimeter Road
Renton, Washington 98055

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FAA Approved Airplane Flight Manual Supplement

to

Piper Model PA-39 Airplane Flight Manual

The information in this document is FAA Approved material which together with the Basic AFM is applicable and must be carried in the basic manual when the airplane is modified by the installation of recontoured leading edge, drooped ailerons, stall fences, optional raked wing tips or tip tanks, and elevator trim spring in accordance with STC SA 2312 WE.

Certification Basis: Part 3 Civil Air Regulations dated 15 May, 1956 through amendment 3-6, paragraph 3.85a, 3.124, 3.587, 3.705a, 3.772, 3.778 of amendment 3-7 and paragraph 23.1545, 23.1563, 23.1585 of amendment 23-3 to FAR 23.

The information in this document supersedes the basic manual only where covered in the items contained herein. For Limitations, Procedures, and Performance not contained in this supplement, consult the manual proper.

I. LIMITATIONS

Airspeed Limits	Minimum Control Speed (Single Engine)	75 MPH (Red Radial Line)
	Stalling Speed (3800 lbs.)	
	Gear & Flaps Up	67 MPH
	Gear & Flaps Down	63 MPH

Maximum Weight IT IS THE RESPONSIBILITY OF THE AIRPLANE OWNER AND THE PILOT TO ASSURE THAT THE AIRPLANE IS PROPERLY LOADED. MAXIMUM ALLOWABLE GROSS WEIGHT 3800 POUNDS. SEE WEIGHT AND BALANCE SECTION FOR PROPER LOADING INSTRUCTIONS. NOTE: IF EQUIPPED WITH BRITAIN MODEL TT-5 TIP TANKS PER STC SA 727 WE, ANY WEIGHT IN EXCESS OF 3650 POUNDS MUST CONSIST OF SYMMETRICALLY LOADED FUEL IN THE TIP TANKS.

CG Range	FORWARD LIMIT	AFT LIMIT
	WEIGHT	IN. AFT OF DATUM
	88.2	91.0
	86.5	92.0
	81.0	92.0

Straight Line Variation Between the Points Given

Placards (a) On the instrument panel in full view of the pilot:
"MINIMUM SINGLE ENGINE CONTROL SPEED 75 MPH CAS"

II. PROCEDURES

No Change.

III. PERFORMANCE

No Change.

FAA APPROVED *George J. Stanton*
for Robert H. Stanton
Chief, Aircraft Eng. Div.
Western Region

8 APR 1971

Supplement to
Piper Model PA-30 & PA-39 Airplane Flight Manuals
Section 2
PA-30 & PA-39 TWIN COMANCHE
WEIGHT AND BALANCE - VISUAL PLOTTER

The chart showing the approved Weight vs. Center of Gravity envelope and the Visual Plotter contained in the following pages will enable the pilot to graphically determine whether or not his proposed loading will fall within the allowable envelope. They will also allow him to easily determine the necessary adjustments to make if his first proposed loading is not within this envelope.

When plotting successive points, the pilot is graphically adding weights and corresponding moments. As the weight increases, through the addition of various items of disposable load, the pilot will see the shift in the center of gravity.

Going clockwise around the envelope, the heavy lines represent allowable weight at the forward C.G. limit (81 in.), the maximum allowable weight as the C.G. shifts rearward is 3800 lbs. gross weight, and the maximum rearward C.G. limit is 91.0 in. The maximum rearward C.G. limit at 3600 lbs. gross weight is 92 in.

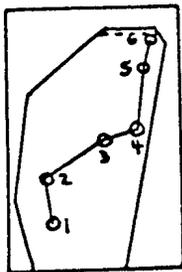
The sample problem which follows will demonstrate the use of the Visual Plotter included with this manual. The pilot is not restricted to adding the items in the same succession as outlined, since the sample problem illustrates only one of many possible loadings. When plotting successive items of disposable load, the items most important to the mission under consideration (range or payload) may be added first.

SAMPLE PROBLEM

Assume (for demonstration purposes only) a Basic Weight and C.G. of 2330 pounds at 83.6 inches. Assume the disposable load to consist of pilot and 3 passengers (170, 170, 180, 160 pounds) 86 pounds baggage and maximum allowable fuel.

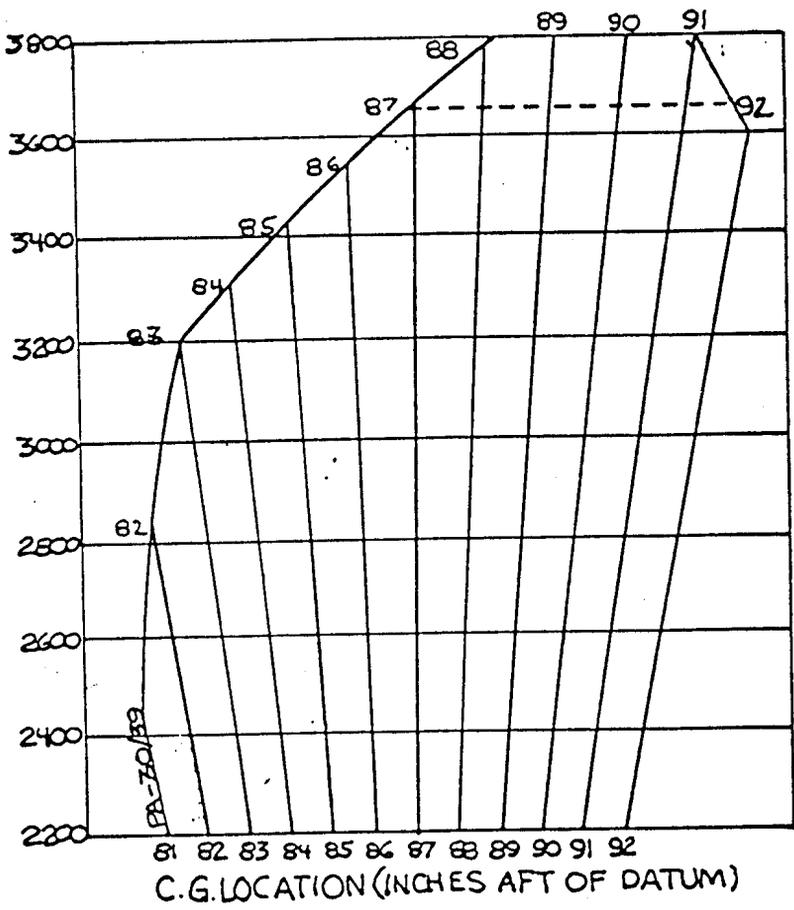
- (1) On the Weight vs. C.G. Envelope opposite 2330 pounds locate the C.G. at 83.6 inches (Point 1). This point represents the Basic empty airplane with oil and 6 gallons of unusable fuel included.
- (2) Lay the transparent Visual Plotter over the envelope (always keep BASE LINES parallel to horizontal or Weight ordinates) and plot along the proper scale the combined weight of the front seat occupants (340 pounds - Point 2)
- (3) From Point 2, following the proper scale of the Visual Plotter, plot the combined weights of the rear seat occupants (340 pounds) and mark Point 3.
- (4) From Point 3 plot the proper distance (use correct scale of Visual Plotter for each) which represent addition of baggage and finally fuel. (Points 4, 5, and 6.)

- (5) When the final step of adding fuel is plotted, the point falls within the envelope at 3600 pounds, and 89.8 inches aft of datum. (The fuel graduations on the plotter run from 0 to 54 gallons, 0 to 30 gallons. The inboard tanks will always contain 6 gallons of unusable fuel, and these two figures total to the listed tank capacity of 90 gallons).
- (6) Fuel of 30 gallons is included for the optional tip tanks on the visual plotter.



Illustrated Sample Problem

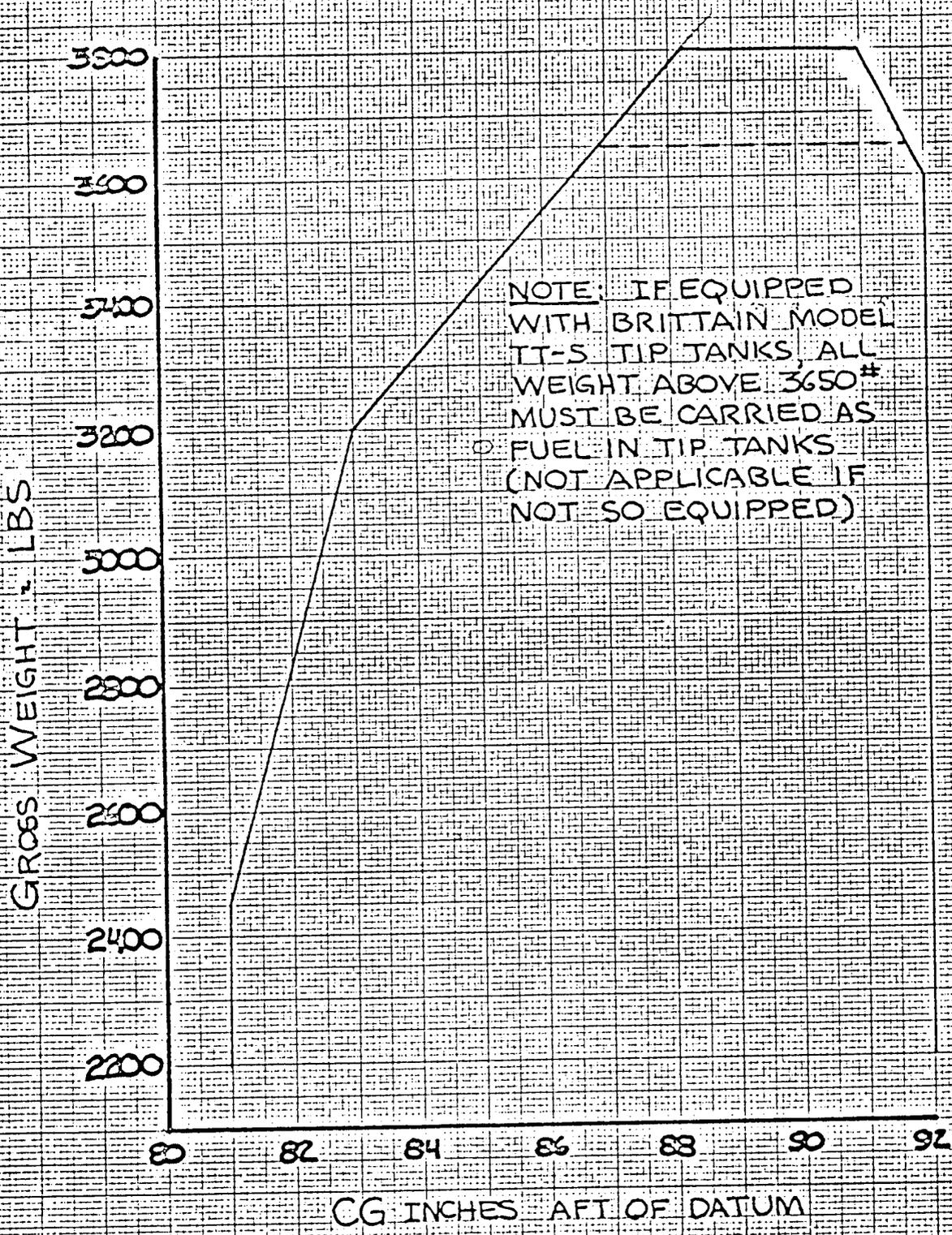
IT IS THE RESPONSIBILITY OF THE OWNER AND PILOT TO ASCERTAIN THAT THE AIRPLANE ALWAYS REMAINS WITHIN THE ALLOWABLE WEIGHT VS. CENTER OF GRAVITY WHILE IN FLIGHT.



Moment due to retracting Landing Gear = +770 in. -lbs.

ROBERTSON R/S
PIPER PA-30, PA-39
GROSS WT. VS CG.

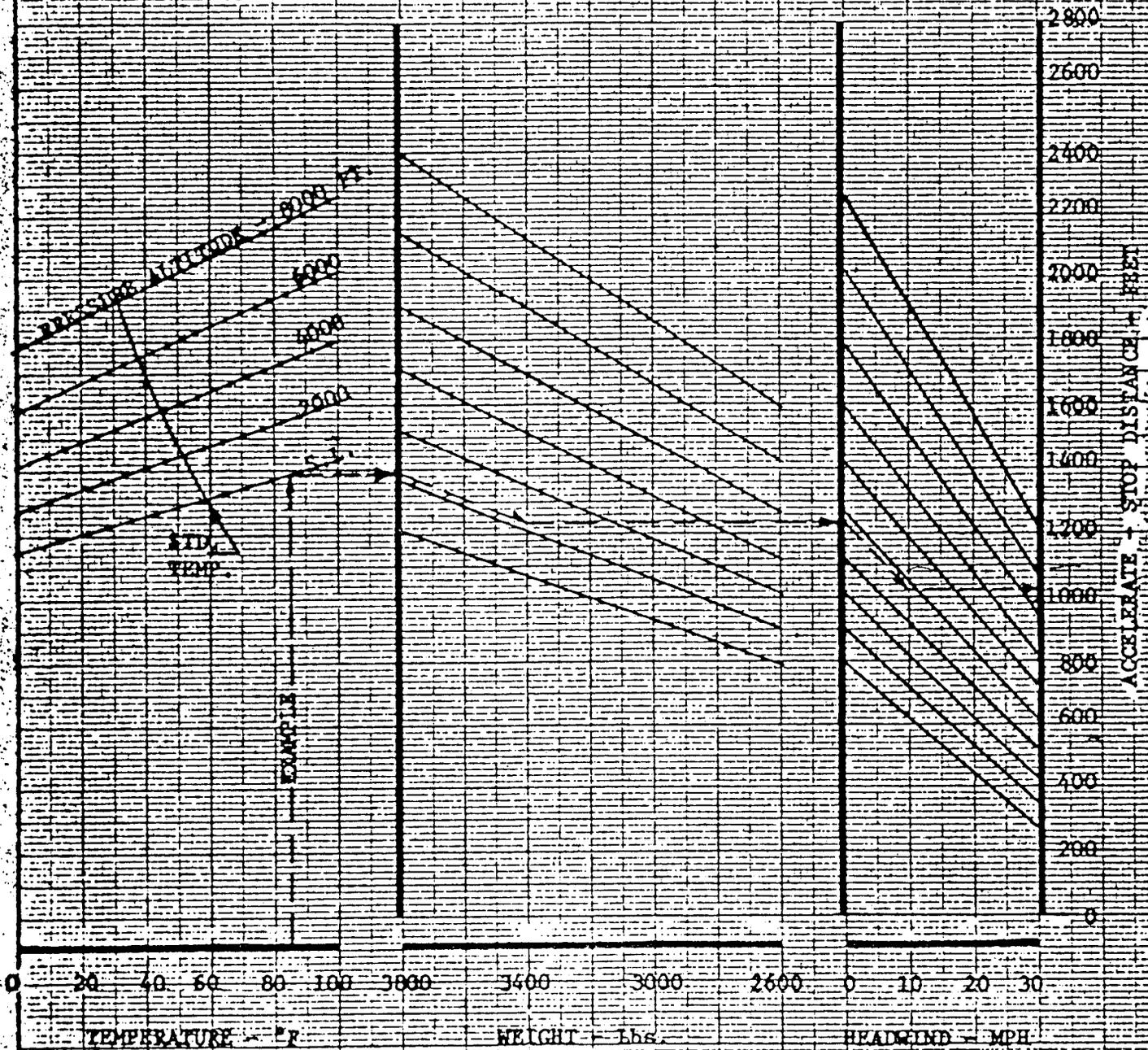
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CORPORATION A.F.M.
SUPPLEMENT
MODEL PA30, PA39
PAGE 1 OF 1



ROBERTSON NORMAL OPERATION

Model PA-30

- (1) Flaps Down 15°
- (2) Accelerate to 70 MPH (IAS)
- (3) Paved Level Dry Runway



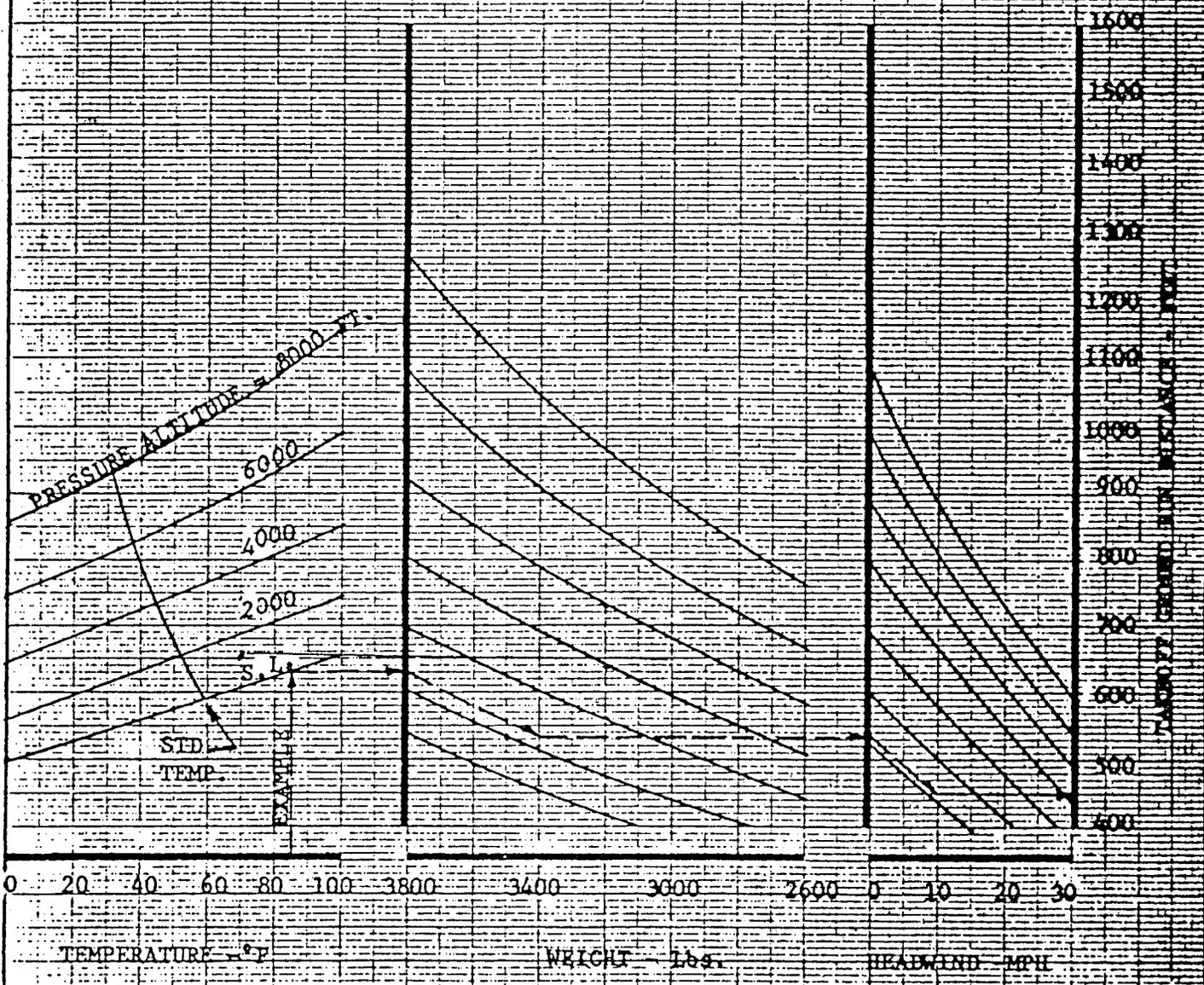
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Accelerate - Stop Distance
 ROBERTSON R/S PIPER TWIN COMANCHE
 PA-30

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ROBERTSON NORMAL OPERATION
Model PA-30

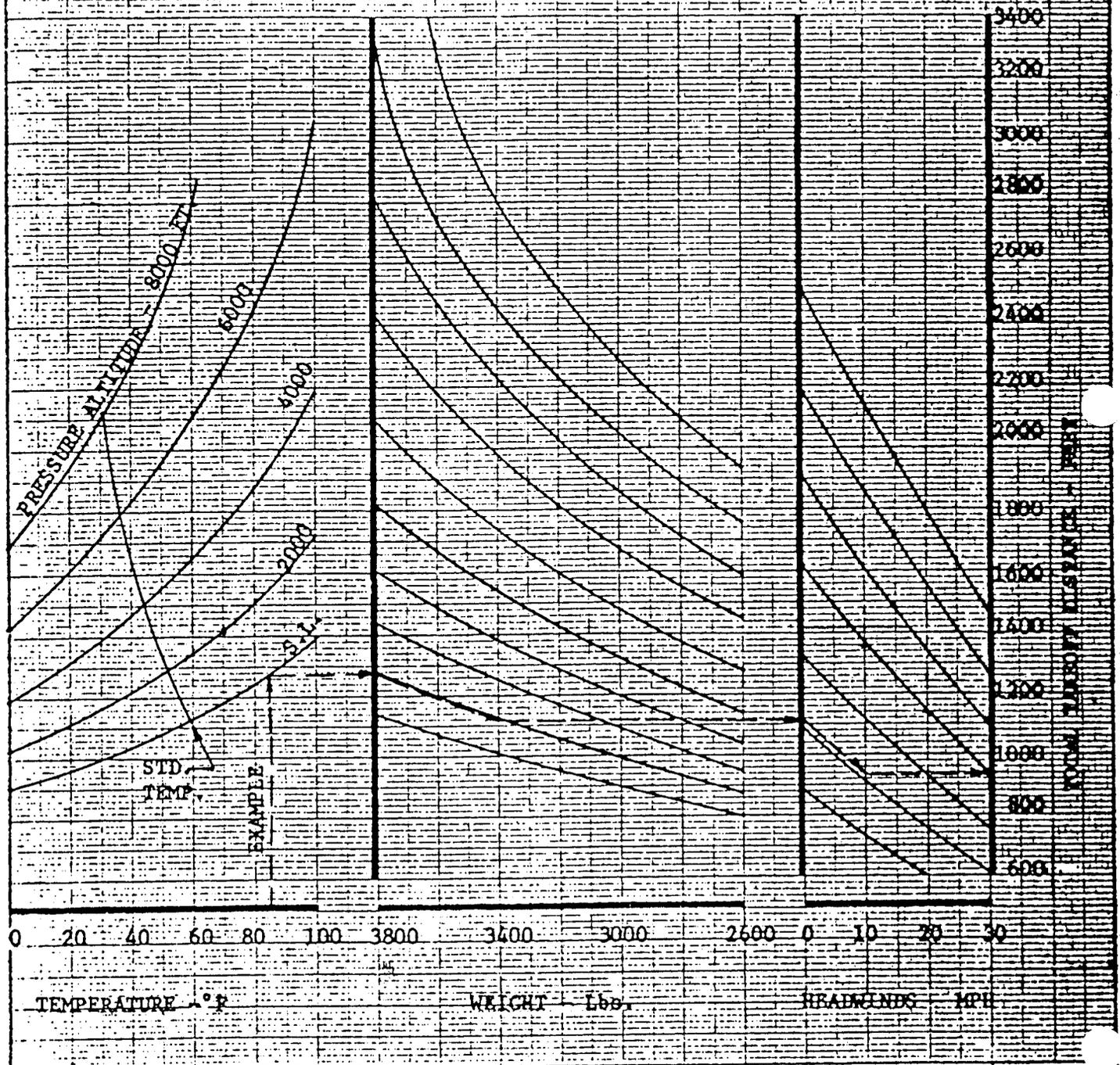
- (1) Flaps Down 15°
- (2) Paved Level Dry Runway
- (3) Begin Rotation at 60 MPH (IAS)
- (4) Liftoff Speed = 70 MPH (IAS)



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ROBERTSON NORMAL OPERATION
Model PA-30

- (1) Flaps Down 15°
- (2) Paved Level Dry Runway
- (3) Liftoff Speed = 70 MPH (IAS)
- (4) Accelerate to 80 MPH (IAS) at 50' altitude

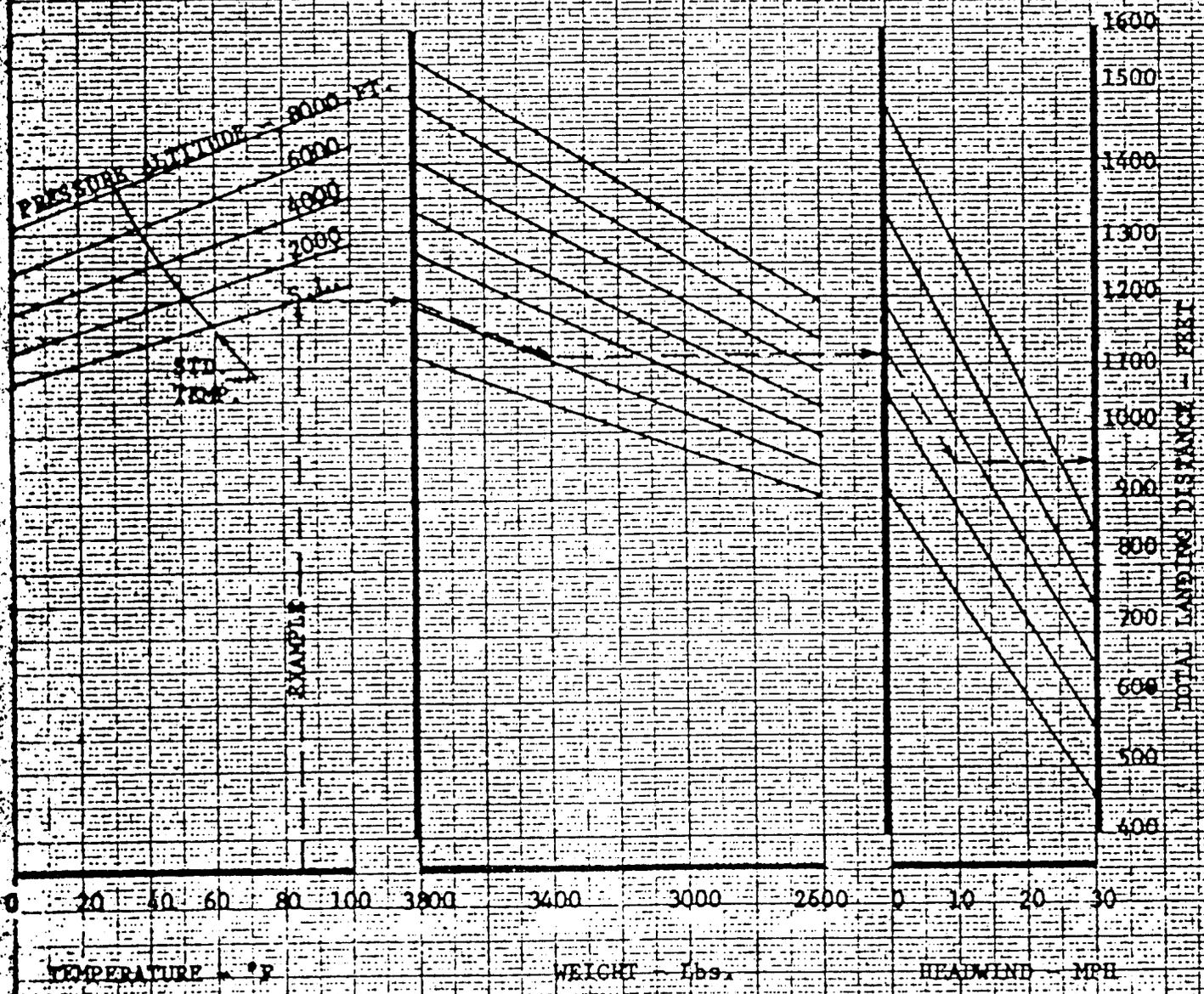


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Takeoff Distance Over 50 Ft.
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PA-30
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ROBERTSON NORMAL OPERATION
Model PA-30

- (1) Flaps Down 27°
- (2) Approach Speed = 80 MPH (IAS)
- (3) Flare & Touchdown Speed = 68 MPH (IAS)
- (4) Paved Level Dry Runway

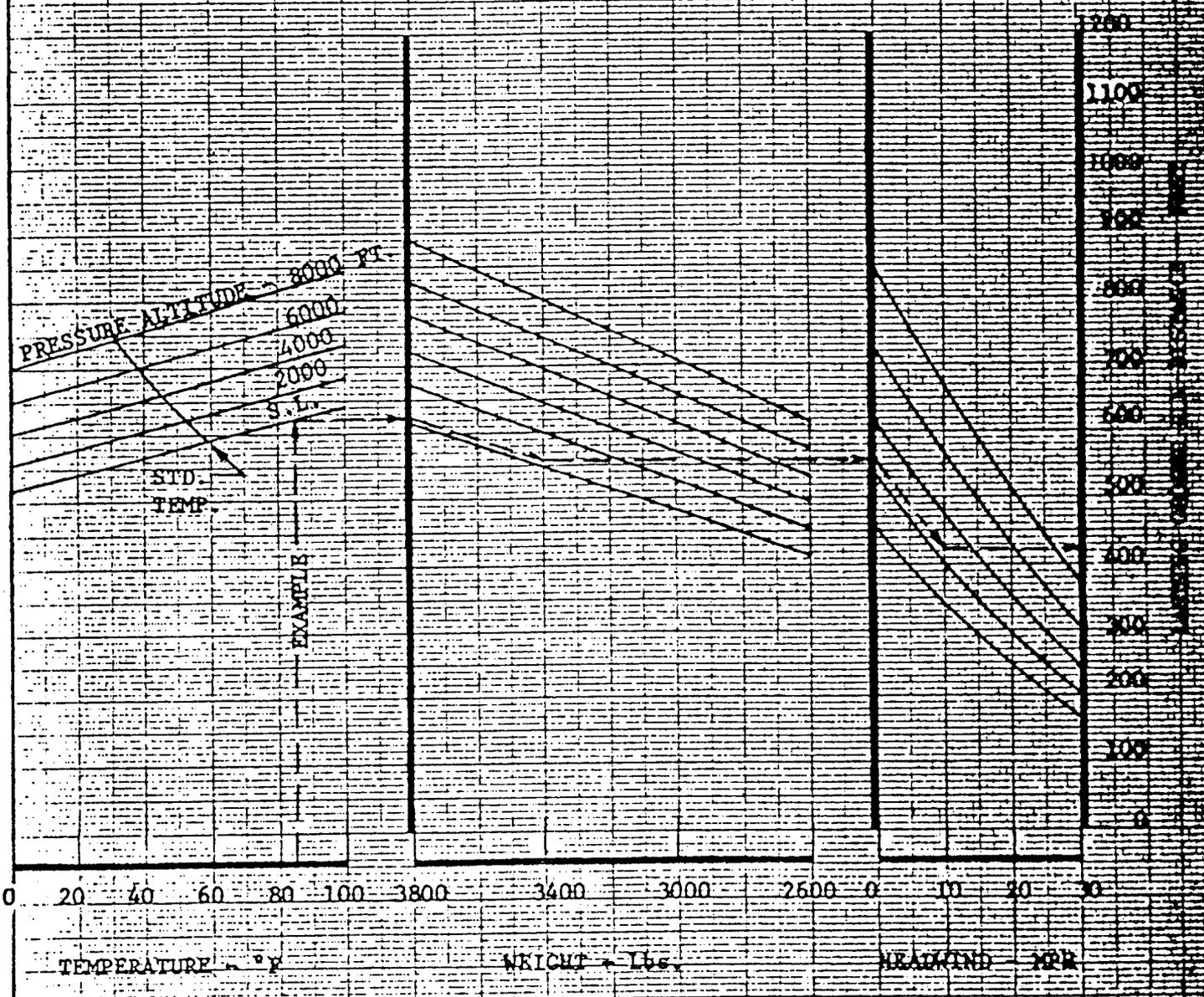


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Landing Distance Over (50 Ft.)
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ROBERTSON NORMAL OPERATION
Model PA-30

- (1) Flaps Down 27°
- (2) Touchdown speed = 68 MPH (IAS)
- (3) Paved Level Dry Runway



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Landing Ground Run Distance
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