

SECTION 1 - GENERAL

PA-24-250 * 2800 LBS GROSS WEIGHT

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THREE VIEW - COMANCHE PA-24-250

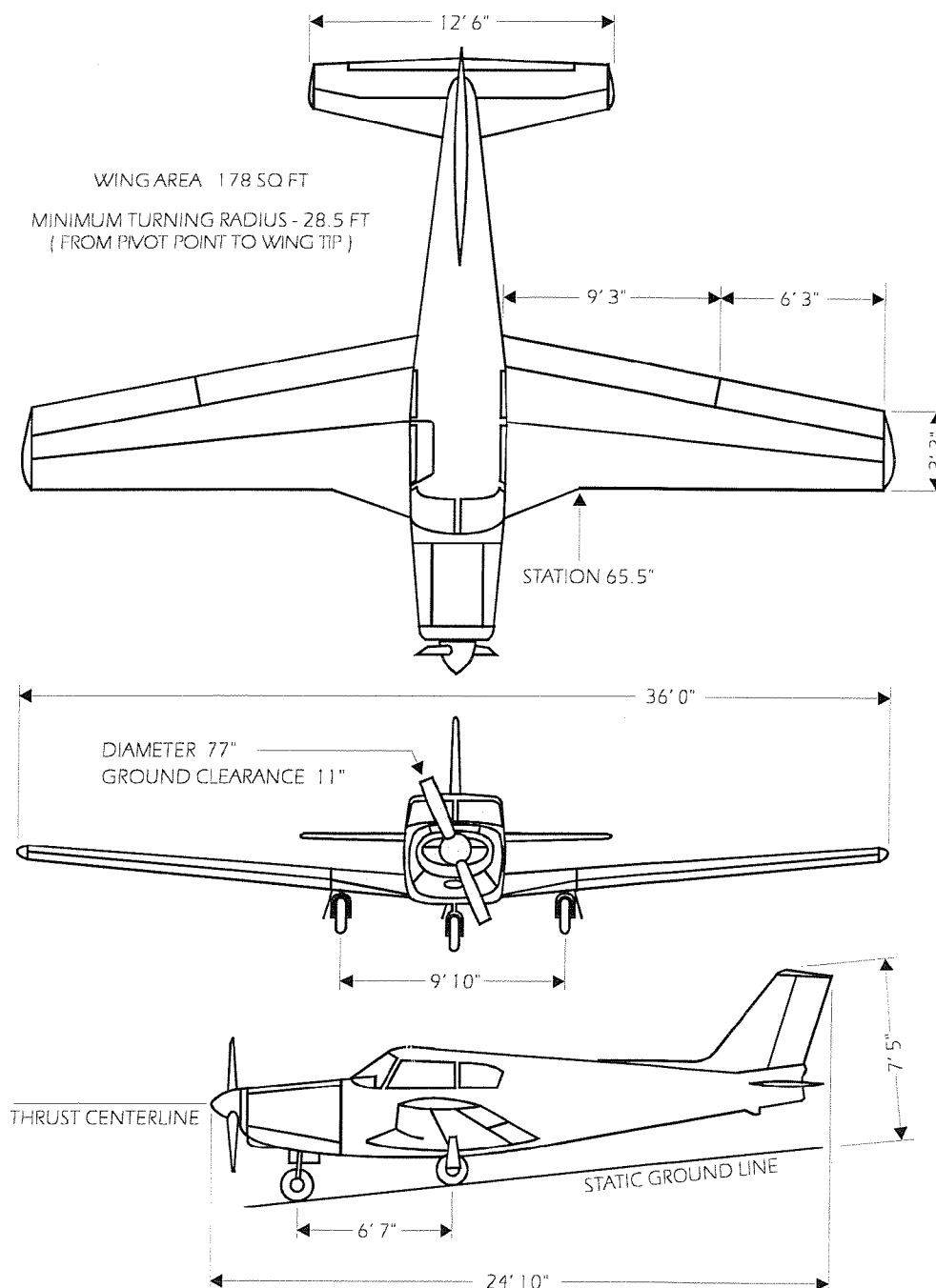


FIGURE 1-01

GENERAL

PA-24-250 * 2800 LBS GROSS WEIGHT

AIRFRAME

Manufacturer Piper
Type Designation Comanche PA-24-250
Construction Semi-Monocoque
Serial Number 24-503
Registration Number N 5448P
Year Model 1959

ENGINE

Manufacturer Lycoming
Serial Number
Model O-540-A
Type Six-Cylinder / Horizontally Opposed
Ratings (bhp @ rpm) 250/2575
Bore 5.125 in
Stroke 4.375 in
Displacement 541.5 cu in
Compression Ratio 8.5 to 1
TBO 2,000 hr
Carburetor Manufacturer Marvel-Schebler
Model MA-4-5

PROPELLERS

Manufacturer Hartzell
Serial Number
Hub Model HC-82XK-1D or HC-A2XK-1
Blade Model 8433-7
Number of Blades 2
Governor Hartzell B-4-2
Type Constant-Speed / Hydraulically Actuated
Diameter 77 in
Pitch (30 in Station) 14.5 to 33.0 Degrees

Option:

Manufacturer McCauley
Serial Number
Hub Model 2D36C28/80MM-6
Blade Model D-2286/80MM-6
Number of Blades 2
Governor Woodward A210185
Type Constant-Speed / Hydraulically Actuated
Diameter 74 in
Pitch (30 in Station) 15.7 to 32.0 Degrees

AIRFRAME DIMENSIONS

Length	24.9 ft
Height	7.3 ft
Wing Span	36.0 ft
Wheel Base	6.5 ft
Wheel Tread	9.8 ft

CABIN AND ENTRY DIMENSIONS

Cabin Length	9.0 ft
Cabin Height	47 in
Cabin Width	45 in
Cabin Entry Height	32 in
Cabin Entry Width	34 in
Baggage Compartment Entry Height and Width	20 x 20 in
Baggage Compartment Volume	20 cu ft

WING CLASSIFICATION AND SPECIFIC LOADINGS

Wing Type	Laminar Flow
NACA Designation	64 ₂ A215
Wing Dihedral	5 Degrees (Zero Twist)
Wing Aspect Ratio	7.3
Wing Area	178 sq ft
Wing Loading	15.7 lb/sq ft
Power Loading	11.2 lb/bhp

WEIGHTS

Maximum Takeoff Weight	2,800 lb
Maximum Landing Weight	2,800 lb
Standard Empty Weight	1,600 lb
Maximum Useful Load	1,200 lb
Maximum Useful Load - With Basic Fuel and Oil (60 US gal)	840 lb

CAPACITIES

Seats	4
Baggage Capacity	200 lb
Fuel Capacity	
Fuel Grade	91/96 - 100 LL (blue) Aviation Gasoline
Oil Capacity	12 US qts
Normal Quantity	9-10 US qts
Minimum Safe Quantity	2-3/4 US qts
Oil Grade	MIL-L-22851C
Tire Pressure (lbs psi)	Nose 27 - Mains 42

FUEL AND OIL CONSUMPTION

Fuel Flow @ [REDACTED] Power	[REDACTED]
Fuel Flow @ 65% Power	12.3 gph/73.8 pph
Fuel Flow @ 55% Power	10.3 gph/61.8 pph
Fuel Flow @ 45% Power	8.5 gph/51.0 pph
Oil Consumption (Typical)	0.25 to 0.35 US qts/hr

PERFORMANCE

1.) Operating Speeds:

Maximum Speed	190 mph 165 kt
Cruise @ 75% Power @ 7,000 ft	181 mph 157 kt
Cruise @ 65% Power @ 10,000 ft	177 mph 154 kt
Cruise @ 55% Power @ 14,000 ft	164 mph 142 kt
Cruise @ 45% Power @ 15,000 ft	150 mph 130 kt

2.) Endurance/Range [REDACTED]:

At [REDACTED] Power	[REDACTED]	-----	582 nm	670 sm	1,079 km
At 65% Power	4.3 hr	-----	661 nm	761 sm	1,225 km
At 55% Power	5.1 hr	-----	726 nm	836 sm	1,346 km
At 45% Power	6.2 hr	-----	808 nm	930 sm	1,497 km

3.) Endurance/Range 86 Gallons: (When Equipped With Tip Tanks)

At 75% Power	5.7 hr	----	897 nm	1,032 sm	1,662 km
At 65% Power	6.5 hr	-	1,000 nm	1,151 sm	1,853 km
At 55% Power	7.8 hr	-	1,111 nm	1,279 sm	2,059 km
At 45% Power	9.5 hr	-	1,238 nm	1,425 sm	2,294 km

** NOTE **

Range and endurance figures include an allowance for fuel used during start, taxi, takeoff, climb, and descent plus 45 minutes reserve fuel at a reduced power setting to obtain maximum range (V_{IMR}) or maximum endurance (V_{IMD}) as applicable. Mixture setting is best economy cruise.

4.) Rate of Climb:

At 2,800 lbs Gross Weight	1,350 ft/min
At 2,200 lbs Gross Weight	1,850 ft/min

5.) Climb Gradient:

At 2,800 lbs Gross Weight	890 ft/nm
At 2,200 lbs Gross Weight	1,220 ft/nm