

CHEROKEE SIX

PA-32-300

**APPLICABLE TO SERIAL NUMBERS
32-40001 THROUGH 32-40545.**

Owner's Handbook



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

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SECTION I

SPECIFICATIONS

PERFORMANCE

Performance figures are based on tests run on an airplane equipped for cross-country transportation under standard conditions as defined by FAA. Cruising and top speeds shown are for an airplane equipped with optional wheel speed fairings. Without fairings, reduce speeds 3 mph.

GROSS WEIGHT	3400	2900
Take-off Run (minimum)*	700	490
Take-off Over 50-ft Barrier (minimum)*	1140	860
Best Rate of Climb Speed (mph)	105	100
Rate of Climb (ft per min)	1050	1350
Service Ceiling (ft)	16,250	20,000
Absolute Ceiling (ft)	18,000	21,500
Top Speed (mph)	174	176
Optimum Cruise Speed (75% power, 7000 ft, mph)	168	170
Cruising Range (55% power) (standard fuel) (optimum altitude, economy cruise, miles)	630	640
Cruising Range (55% power) (standard auxiliary fuel) (optimum altitude, economy cruise, miles)	1060	1070
Cruising Range (75% power) (standard fuel) (optimum altitude, economy cruise, miles)	525	535

*THESE FIGURES ARE FOR MAXIMUM EFFORT. SEE
CHARTS IN SECTION IV FOR NORMAL TAKE-OFF DISTANCES.

SECTION I

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SPECIFICATIONS (cont):

PERFORMANCE

GROSS WEIGHT	3400	2900
Cruising Range (75% power) (standard auxiliary fuel) (optimum altitude, economy cruise, miles)	880	890
Stall Speed (full flaps - 40°)	63	58
Stall Speed (no flaps)	70	65
Landing Roll (flaps down, ft)	630	540
Landing Distance Over 50-ft Barrier (ft)	1000	850

WEIGHTS

Empty Weight (standard) (lbs)	1738	1738
USEFUL LOAD (standard) (lbs)	1662	1162
Empty Weight (five seats removed for cargo) (lbs)	1668	1668
USEFUL LOAD (five seats removed for cargo) (lbs)	1732	1232

POWER PLANT

Engine - Lycoming	IO-540-K1A5
Rated Horsepower	300
Rated Speed (rpm)	2700
Bore (inches)	5.125
Stroke (inches)	4.375
Displacement (cubic inches)	541.5
Compression Ratio	8.7:1
Dry Weight (pounds)	457
Propeller	HC-C2YK-1B/8475-4
Propeller Diameter (inches)	80

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SECTION I

SPECIFICATIONS (cont):

FUEL AND OIL

Fuel Capacity (standard) (U.S. gal)	50
With Standard Auxiliary (U.S. gal)	84
Oil Capacity (U.S. qts)	12
Fuel, Aviation Grade (min octane)	100/130

BAGGAGE

	Forward	Aft
Maximum Baggage (lbs)	100	100
Baggage Space (cubic ft)	8	20
Baggage Door Size (in)	16 x 22	

DIMENSIONS

Wing Span (ft)	32.8
Wing Area (sq ft)	174.5
Wing Loading (lbs per sq ft)	19.5
Length (ft)	27.7
Height (ft)	7.9
Power Loading (lbs per hp)	11.3

LANDING GEAR

Wheel Base (ft)	7.8
Wheel Tread (ft)	10.6
Tire Pressure (lbs)	Nose 28-30
	Main 35-40

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When the engine is firing evenly, turn the magneto switch to the **BOTH** position and advance the throttle to 800 RPM. If oil pressure is not indicated within thirty seconds, stop the engine and determine the trouble. In cold weather it will take a few seconds longer to get an oil pressure indication. If the engine has failed to start, refer to the "Lycoming Operating Handbook, Engine Troubles and Their Remedies".

Starter manufacturers recommend that cranking periods be limited to thirty seconds with a two minute rest between cranking periods. Longer cranking periods will shorten the life of the starter.

WARM-UP AND GROUND CHECK

Warm-up the engine at 800 to 1200 RPM for not more than two minutes in warm weather, four minutes in cold weather. Avoid prolonged idling at low RPM as this practice may result in fouled spark plugs.

The magnetos should be checked at 2000 RPM with propeller set at high RPM. Drop off on either magneto should not exceed 175 RPM and should be within 50 RPM of each other. Operation on one magneto should not exceed 10 seconds.

Check vacuum gauge, indicator should read $5" \pm .1"$ 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 takeoff.

The propeller control should be moved through its complete range to check for proper operation, and then placed in full high RPM for takeoff. To obtain maximum RPM with the vernier control, push the control forward while depressing the button, and then rotate the vernier control clockwise until it contacts the stop.

In cold weather the propeller control should be cycled at least three times to insure that warm engine oil has circulated through the system.

The electric fuel pump should be turned off after starting or during

warm-up to make sure that the engine-driven pump is operating. Prior to takeoff the electric pump should be turned on again to prevent loss of power during takeoff should the engine-driven pump fail. The engine is warm enough for takeoff when the throttle can be opened without engine faltering.

TAKEOFF

Just before takeoff the following items should be checked:

- | | |
|----------------------|---------------------------------|
| 1. Controls free | 7. Fuel selector on proper tank |
| 2. Flaps set | 8. Electric fuel pump - ON |
| 3. Tab set | 9. Engine gauges normal |
| 4. Propeller set | 10. Door latched |
| 5. Mixture SET | 11. Altimeter set |
| 6. Fasten seat belts | 12. Seat backs - erect |

The take-off technique is conventional for the Cherokee Six. 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 65 to 70 MPH, 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.

Take-offs are normally made with flaps extended 10° (first notch). However, for short field take-offs, and for take-offs under difficult conditions such as in deep grass or on a soft surface, distances can be reduced appreciably by lowering flaps to 25° (second notch).

After take-off has proceeded to a safe altitude, the throttle should be brought back to climbing power, a minimum of 25 inches of manifold pressure and the RPM reduced to a minimum of 2500.

CLIMB

The best rate of climb at gross weight will be obtained at 105 MPH. The best angle of climb may be obtained at 95 MPH. At lighter than gross weight these speeds are reduced somewhat. For climbing enroute a speed of 115 MPH is recommended. This will produce better forward speed and increased visibility over the nose during the climb.

When reaching the desired altitude, the electric fuel pump may be turned off.

STALLS

The stall characteristics of the Cherokee Six are conventional. Visual stall warning is provided by a red light located on the left side of the instrument panel which is turned on automatically between 5 and 10 MPH above the stall speed. The gross weight stalling speed of the Cherokee Six with power off and full flaps is 63 MPH. With the flaps up this speed is increased 7 MPH.

Intentional spins are prohibited in this airplane. In the event that an inadvertent spin occurs, standard recovery technique should be used immediately.

CRUISING

The cruising speed of the Cherokee Six is determined by many factors including power setting, altitude, temperature, loading, and equipment installed on the airplane.

The normal cruising power is 75% of the rated horsepower of the engine. True airspeeds, which can be obtained at various altitudes and power settings, can be determined from the charts in Section IV of this handbook.

When selecting cruising RPM below 2300, limiting manifold pressure for continuous operation, as specified by the Lycoming

Operator's Manual, should be observed.

To obtain the desired power, set the manifold pressure and RPM according to the power setting table in this manual. After the desired power settings have been set up, adjust the mixture control for corresponding best power setting as indicated by the fuel flow meter. The low side of the power setting, as shown on the fuel flow meter, indicates best economy for that percent of power while the high side indicates best power.

Use of the mixture control in cruising flight reduces fuel consumption significantly, especially at higher altitudes. The mixture should be leaned during cruising operation above 5000 feet altitude and at the pilot's discretion at lower altitudes when 75% power, or less, is being used. If any doubt exists as to the amount of power being used, the mixture should be in the **FULL RICH** position for all operations under 5000 feet.

In order to keep the airplane in best lateral trim during cruising flight, the fuel should be used alternately from each tip tank, and when they are nearly exhausted, from each main tank. It is recommended that one tip tank be used for one-half hour after take-off; the other tip tank used until nearly exhausted, then return to the first tip tank. When nearly exhausted, turn to one main tank and alternate at one-hour intervals to maintain lateral trim. Turn electric fuel pump on when switching tanks.

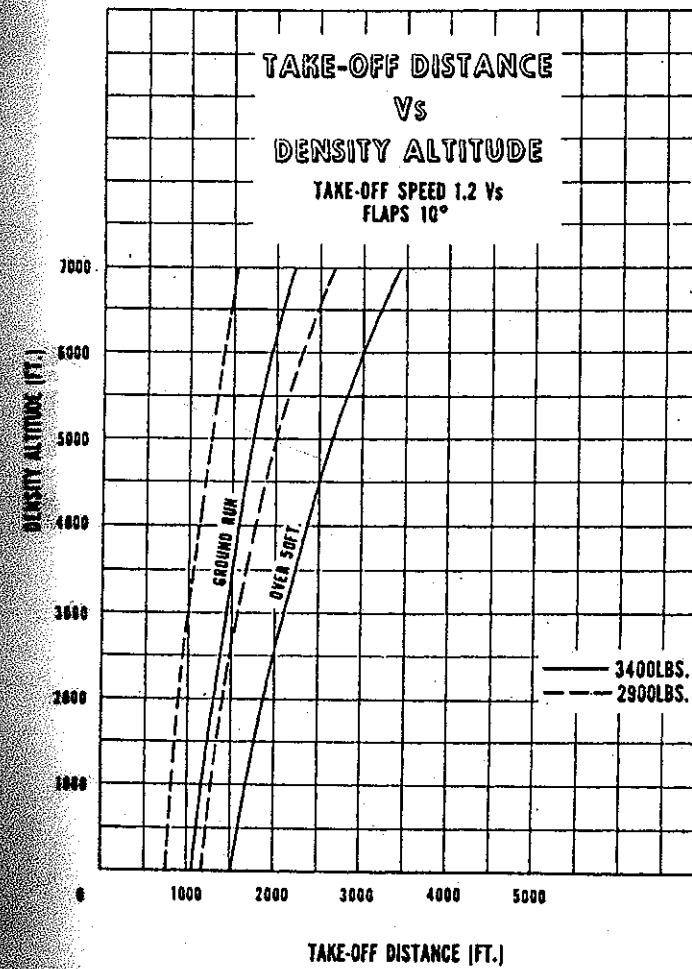
ROUGH AIR OPERATION

In keeping with good operating practice used in all aircraft, it is recommended that when turbulent air is encountered or expected the airspeed be reduced to maneuvering speed to reduce the structural loads caused by gusts and to allow for inadvertent speed build-ups which may occur as a result of the turbulence or distractions caused by the conditions.

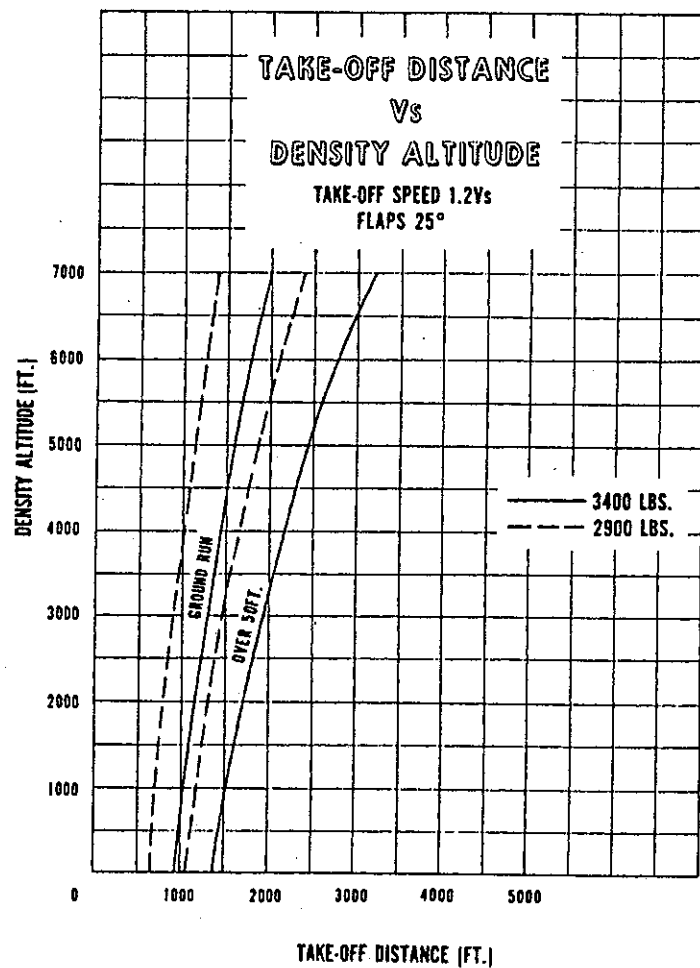
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