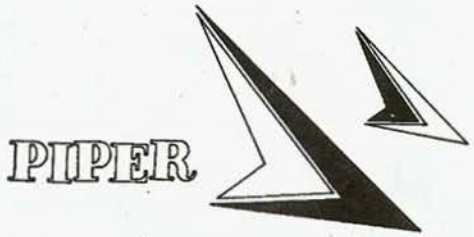
PIPER

CHEROKEE SIX 260
OWNER'S HANDBOOK

the

CHEROKEE SIX

Owner's Handbook



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SECTION I

SPECIFICATION FEATURES

SPECIFICATION FEATURES:

POWER PLANT GROSS WEIGHTS	Fixed Pitch 3400	Fixed Pitch 2900	Const. Speed 3400	Const. Speed 2900
Engine - Lycoming	O-540-E4B5	O-540-E4B5	O-540-E4B5	O-540-E4B5
Rated Horsepower	260	260	260	260
Rated Speed (rpm)	2700	2700	2700	2700
Bore (inches)	5.125	5.125	5.125	5.125
Stroke (inches)	4.375	4.375	4.375	4.375
Displacement (cubic inches)	541.5	541.5	541.5	541.5
Compression Ratio	8.5:1	8.5:1	8.5:1	8.5:1
Dry Weight (pounds)	397	397	397	397
Oil Sump Capacity (qts)	12	12	12	12
Propeller	1P235PFA82	1P235PFA82	HC-C2YK-1A/8477-2	HC-C2YK-1A/8477-2
Propeller Diameter (inches)	82	82	82	82
PERFORMANCE				
Take-off Run (Minimum)*	810	550	740	520
Take-off over 50 ft. barrier (Minimum)*	1360	1110	1240	1020
Best Rate of Climb Speed (mph)	105	100	105	100
Rate of Climb (ft. per min.)	760	845	850	995
Service Ceiling (ft.)	13,000	15,000	14,500	17,500
Absolute Ceiling (ft.)	15,000	17,000	16,500	19,000
Top Speed (mph)	168	171	166	169
Optimum Cruise Speed (7000 ft.) (75% power) (mph)	158	161	158	161
Cruising Range (55% power) (Standard Fuel) (Optimum Altitude, Miles)	660	670	660	670
Cruising Range (55% power) (Standard Auxiliary Fuel) (Optimum Altitude, Miles)	1110	1125	1110	1125
Cruising Range (75% power) (Standard Fuel) (Optimum Altitude, Miles)	560	570	560	570
Cruising Range (75% power) (Standard Auxiliary Fuel) (Optimum Altitude, Miles)	950	960	950	960

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

SPECIFICATION FEATURES: (cont)

PERFORMANCE GROSS WEIGHTS	Fixed Pitch 3400	Fixed Pitch 2900	Const. Speed 3400	Const. Speed 2900
Stall Speed (full flaps - 40°)	63	58	63	58
Stall Speed (no flaps)	70	65	70	65
Landing Roll (flaps down, ft.)	630	540	630	540
Landing Distance over 50 ft. barrier (ft.)	1000	850	1000	850

Performance figures are for standard airplanes flown at gross weight under standard conditions at sea level or stated altitude. Any deviation from Standard equipment may result in changes in performance.

WEIGHTS

Empty Weight (Standard) (lbs)	1640	1640	1665	1665
USEFUL LOAD (Standard) (lbs)	1760	1260	1735	1235
Empty Weight (Five seats removed for cargo) (lbs)	1570	1570	1595	1595
USEFUL LOAD (Five seats removed for cargo) (lbs)	1830	1330	1805	1305

FUEL AND OIL

Fuel Capacity Main Tanks (U.S. gal.)	50
Fuel Capacity Tip Tanks (U.S. gal.)	34
Oil Capacity (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	

ATION FEATURES: (cont)

MANCE GROSS WEIGHTS	Fixed Pitch 3400	Fixed Pitch 2900	Const. Speed 3400	Const. Speed 2900
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age Door Size (in)	16 x 22	

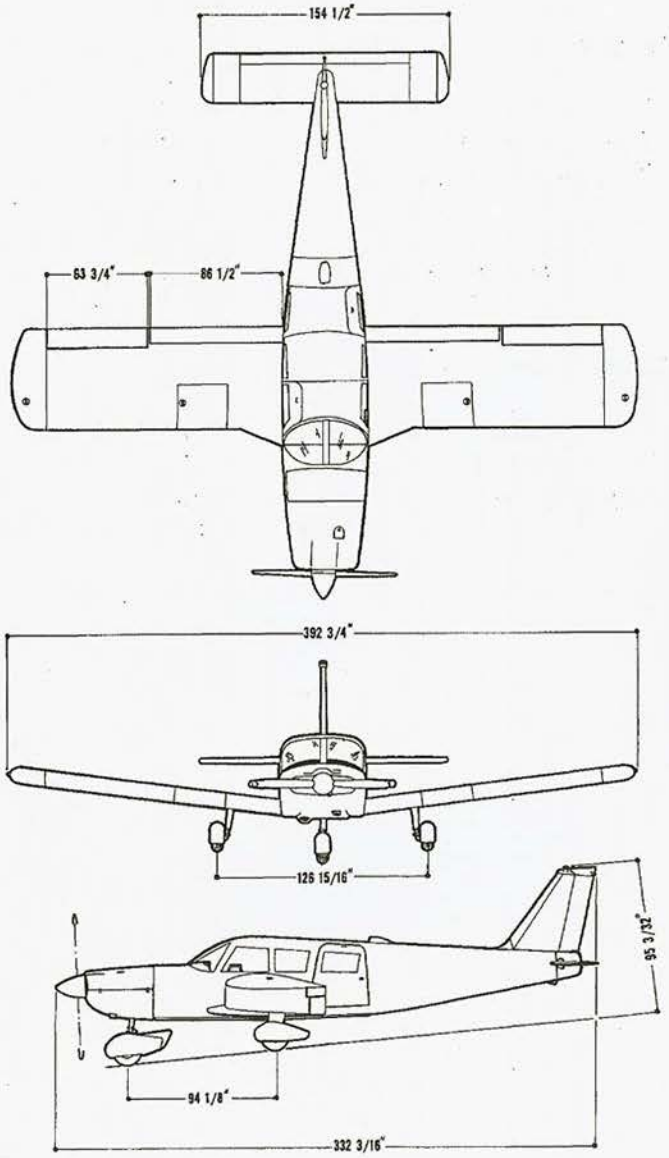
SPECIFICATION FEATURES: (cont)

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)		13.1

LANDING GEAR

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



SECTION II

DESIGN INFORMATION

SECTION II

DESIGN INFORMATION

ENGINE AND PROPELLER

The Lycoming O-540-E4B5 engine installed in the Cherokee Six, PA-32-260 is rated at 260 horsepower at 2700 rpm. This engine has a compression ratio of 8.5 to 1 and requires 100/130 minimum octane fuel. The engine is equipped with a geared starter, a 60 ampere alternator, dual magnetos, vacuum pump drive, a diaphragm-type fuel pump and a float carburetor.

Exhaust gases are carried through a system constructed of heavy gauge stainless steel which incorporates two heater shrouds, one for cabin heat and the other for carburetor deicing.

The propeller used on the PA-32-260 is either the McCauley 1P235PFA82 fixed pitch aluminum alloy unit or the Hartzell HC-C2YK-1A/8477-2 constant speed propeller.

The McCauley propeller is 82 inches in diameter, with a standard pitch of 66 inches, although propellers with a pitch from 60 inches to 66 inches may be installed for special purposes. All performances figures are based on the standard 66 inch propeller.

The Hartzell propeller is 82 inches in diameter and is controlled by a Hartzell F-4-4 governor mounted on a pad on the forward end of the crankcase. This governor supplies oil to the propeller through the engine shaft. The governor is controlled by a cable from the cockpit.

Cowling on the Cherokee Six is designed to cool the engine in all normal flight conditions, including protracted climb, without the use of cowl flaps or cooling flanges.

The throttle is of the push pull type and is located in the lower center of the instrument panel. A friction lock is pro-

vided to prevent creeping of the throttle from any desired position. The throttle may be locked in any position by turning the throttle knob clockwise. The mixture control, located in the lower right side of the instrument panel, is also a push-pull control. The full rich position is obtained when the control is full forward, while the full aft position provides an idle cut-off for stopping the engine. Intermediate positions are used for leaning the mixture at altitudes above seal level. The carburetor heat control, located to the left of the throttle, provides maximum carburetor heat when pulled to its full aft position. With carburetor heat off, all engine air passes through a high-efficiency dry-type filter. Prolonged ground operation with carburetor heat **ON** should be avoided, particularly on unimproved fields, as the air passing through the heat shroud is not filtered.

STRUCTURES

All structures are of aluminum alloy construction and are designed to ultimate load factors well in excess of normal requirements. All exterior surfaces are primed with etching primer and painted with acrylic enamel.

The wings are attached to each side of the fuselage by inserting the butt ends of the respective main spars into a spar box carry through which is an integral part of the fuselage structure, providing, in effect, a continuous main spar with splices at each side of the fuselage. There are also fore and aft attachments at the rear spar and at an auxiliary front spar.

The wing airfoil section is a laminar flow type, NACA 65_2-415 with the maximum thickness at about 40% aft of the leading edge.

LANDING GEAR

The three landing gears use a Cleveland 600 x 6 wheel, the main wheels being provided with brake drums and Cleveland

double disc hydraulic brake assemblies. The nose wheel carries a 600 x 6 four ply tire with tube while the main gear uses 600 x 6 six ply tires with tubes.

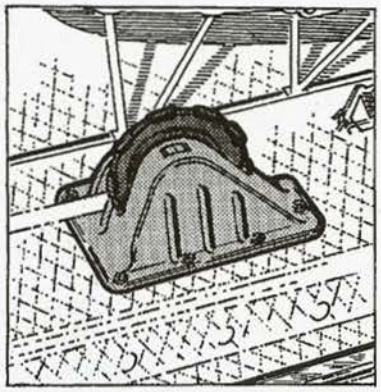
The nose gear is steerable through a 30 degree arc each side of neutral by use of the rudder pedals. A spring device is incorporated in the rudder pedal torque tube assembly to aid in rudder centering and to provide rudder trim. The nose gear steering mechanism also incorporates a hydraulic shimmy dampener.

The oleo struts are of the air oil type, with normal extension being 3-1/4 inches for the nose gear and 4-1/2 inches for the main gear under normal static load (empty weight of airplane plus full fuel and oil).

The brakes are actuated by toe pedals which are attached to the left rudder pedals, or by a hand lever and master cylinder which is located below the left center of the instrument panel. Hydraulic cylinders are located above each pedal and adjacent to the hand lever. The brake-fluid reservoir is installed on the top left front of the firewall. The parking brake is incorporated in the lever brake and is operated by pulling back on the lever and depressing the knob attached to the top of the handle. To release the parking brake, pull back on the brake lever to disengage the catch; then allow the handle to swing forward.

CONTROL SYSTEM

Dual controls are provided as standard equipment, with a cable system used between the controls and the surfaces. The horizontal tail is of the all movable slab type, with an anti-servo tab which also acts as a longitudinal trim tab, actuated by a control mounted on the control tunnel between the two front seats. The stabilator provides extra stability and controllability with less size, drag and weight than conventional tail surfaces. The ailerons are provided with a differential action which tends to eliminate adverse yaw in turning maneuvers and to reduce the



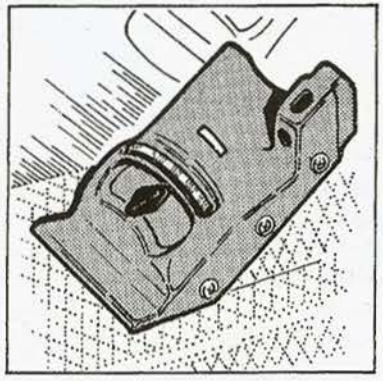
Stabilator Trim Control

amount of coordination required in normal turns.

The flaps are manually operated, balanced for light operating forces and spring loaded to return to the up position. A past-center lock incorporated in the actuating linkage holds the flap when it is in the up position so that it may be used as a step on the right side. Since the flap will not support a step load except when in the full up position, it should be completely retracted when the airplane is on the ground. The flaps have three extended positions, 10, 25, and 40 degrees.

FUEL SYSTEM

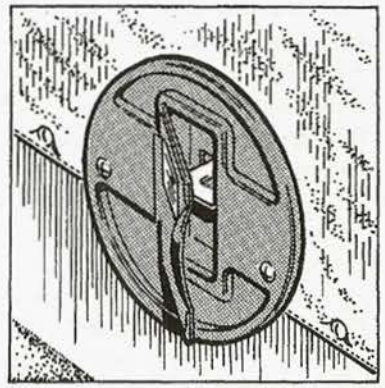
The total fuel capacity of the Cherokee Six is 84 gallons, all of which is usable except for approximately one pint in each of the four tanks. The two main inboard tanks, which hold 25 gallons each, are attached to the wing structure with screws and nut plates and can be removed easily for service or inspection. The tip tanks are constructed of resin-impregnated fiberglass and hold 17 gallons each.



Fuel Control Selector

The fuel selector control is located below the center of the instrument panel on the sloping face of the control

tunnel. It has five positions corresponding to each of the four tanks plus an **OFF** position. When using less than the standard 84 gallon capacity of the tanks, fuel should be distributed equally between each side and may be placed in either the inboard or tip tanks.



Fuel Drain Lever

Each fuel tank is equipped with an individual quick drain located at the lower inboard rear corner of the tank. The fuel strainer and a system quick drain valve are located in the fuselage at the lowest point of the fuel system. This strainer should be drained regularly to avoid the accumulation of water or sediment. The drain valve is operated by pressing **DOWN** on the lever located on the right hand side of the cabin below the forward edge of the right center seat.

Fuel quantity gauges for each of the four tanks are located in the engine gauge cluster on the right side of the instrument panel. A fuel pressure indicator is also incorporated in the engine gauge cluster.

Dual electric fuel pumps are provided for use in case of failure of the engine-driven pump. The electric pumps operate from a single switch and should be **ON** for all take-offs and landings.

ELECTRICAL SYSTEM

The Cherokee Six is equipped with the Piper FTP (Full Time Power) Electrical System. Its 12 volt alternator provides electrical power at all engine speeds and results in improved performance for radio and electrical equipment and longer battery life.

In addition to the alternator, the electrical system includes a 25 ampere-hour battery, a voltage regulator and a master switch relay. The battery and relay are mounted in the center of the forward baggage compartment. Access for service or inspection is through a removable panel in the floor of the compartment. The battery box is designed to accommodate a larger capacity battery for extreme cold weather operation.

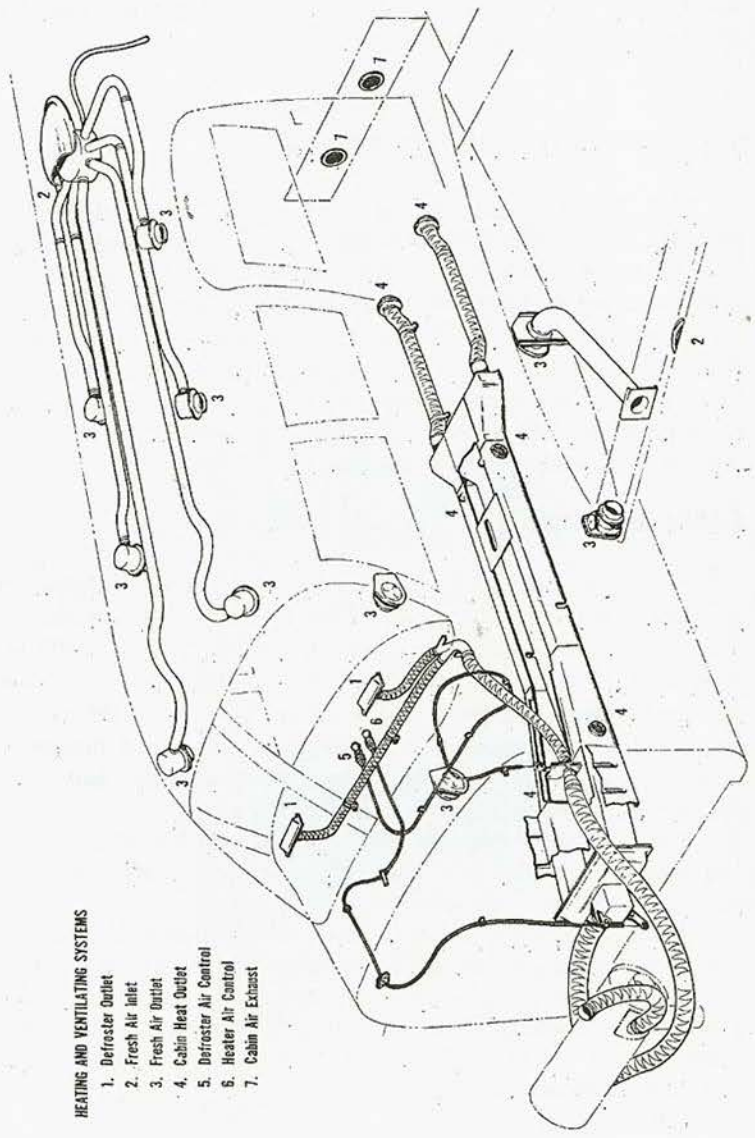
Electrical switches, fuses and fuse spares are located on the lower left side of the instrument panel.

Standard electrical accessories, in addition to those already listed, include a starter, stall warning indicator, cigar lighter and ammeter. Navigation lights, anti-collision light, landing light, instrument lighting and cabin lights are offered as optional accessories.

Circuit provisions are made to handle optional communications and navigational equipment.

Unlike previous generator systems, the ammeter does not indicate battery discharge; rather it displays in amperes the load placed on the alternator. With all electrical equipment off (except the master switch) the ammeter will be indicating the amount of charging current demanded by the battery. As each item of electrical equipment is turned on, the current will increase to a total appearing on the ammeter. This total includes the battery. The maximum continuous load for night flight, with radios on, is about 30 amperes. This 30 ampere value, plus approximately two amperes for a fully charged battery, will appear continuously under these flight conditions. The amount of current shown on the ammeter will tell immediately whether the alternator system is operating normally, as the amount of current shown should equal the total amount of amperes being drawn by the equipment which is operating.

If no output is indicated on the ammeter, during flight, reduce the electrical load by turning off all unnecessary electrical equipment. Check both 5 ampere field breaker and 60 ampere output breaker and reset if open. If neither circuit breaker is open, turn off the master switch for 30 seconds to reset the overvoltage relay. If ammeter continues to indicate no output, maintain mini-



mum electrical load and terminate flight as soon as practical. Monitor the voltmeter during the remaining flight and have the system repaired before further use.

HEATING AND VENTILATING SYSTEM

Heat for the cabin interior and the defroster system is provided by a heater muff attached to the exhaust system. Controls for these systems are located on the lower right side of the instrument panel. There are 6 heater outlets, one for each seat.

Fresh air inlets are located in the leading edge of the wing at the intersection of the tapered and straight sections. Two large adjustable outlets are located on each side of the cabin, one forward and one aft of the front seat near the floor. In addition there is an adjustable outlet above each seat.

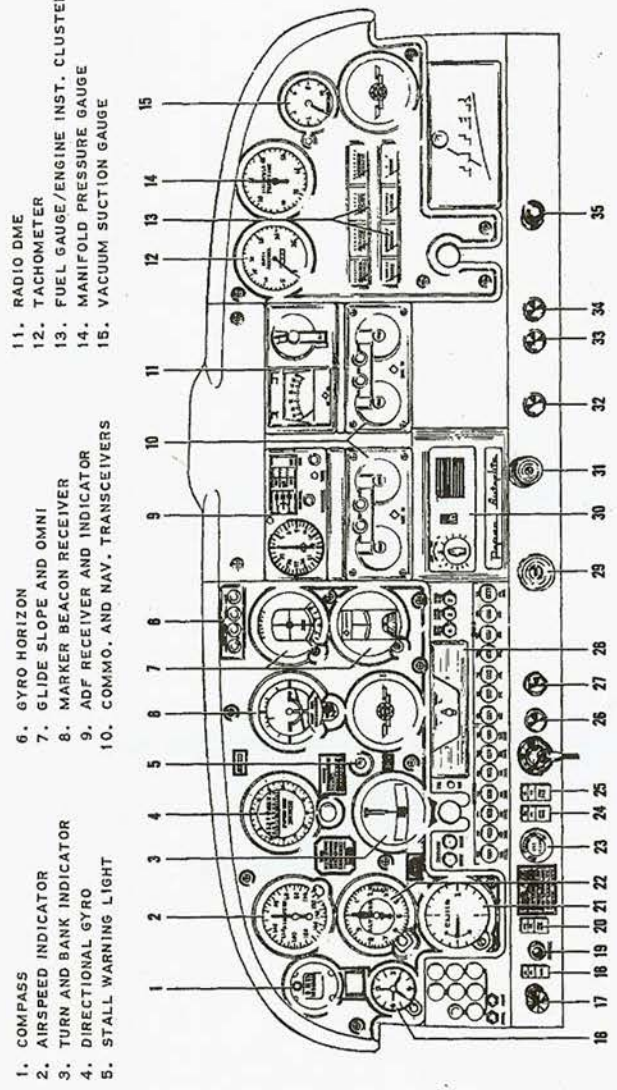
CABIN FEATURES

The instrument panel of the Cherokee Six is designed to accommodate the customary advanced flight instruments and all the normally required power plant instruments. The Artificial Horizon, Directional Gyro and the Turn and Bank instruments are vacuum operated through use of a vacuum pump installed on the engine. A natural separation of the flight group and the power group is provided by placing the communications and radio navigational equipment in the center of the panel.

The front seats are adjustable fore and aft for pilot comfort and ease of entry and exit. The center and rear seats are easily removable for added cargo space.

A jump seat installation is available which installs between the two middle seats making the Cherokee a seven place airplane.

The airplane is provided with two baggage compartments. The forward compartment is just aft of the firewall with access through a door on the right side of the fuselage. The rear compartment is behind the rear seats and includes a shelf, handy for small items.



1. COMPASS
2. AIRSPEED INDICATOR
3. TURN AND BANK INDICATOR
4. DIRECTIONAL GYRO
5. STALL WARNING LIGHT
6. GYRO HORIZON
7. GLIDE SLOPE AND OMNI
8. MARKER BEACON RECEIVER
9. ADF RECEIVER AND INDICATOR
10. COMMO. AND NAV. TRANSCEIVERS
11. RADIO DME
12. TACHOMETER
13. FUEL GAUGE/ENGINE INST. CLUSTER
14. MANIFOLD PRESSURE GAUGE
15. VACUUM SUCTION GAUGE
16. CLOCK
17. PRIMER
18. MASTER SWITCH
19. STARTER SWITCH
20. ELECTRIC FUEL PUMP
21. VERTICAL SPEED INDICATOR
22. ALTIMETER
23. NAVIGATION LIGHTS
24. LANDING LIGHTS
25. ROTATING BEACON
26. ALTERNATE AIR
27. CARBURETOR HEAT
28. TRANSMITTER SELECTOR
29. THROTTLE
30. AUTOFLITE CONTROL
31. PROPELLER CONTROL
32. MIXTURE CONTROL
33. CABIN HEAT
34. DEFROSTER
35. CIGAR LIGHTER

SECTION III

OPERATING INSTRUCTIONS

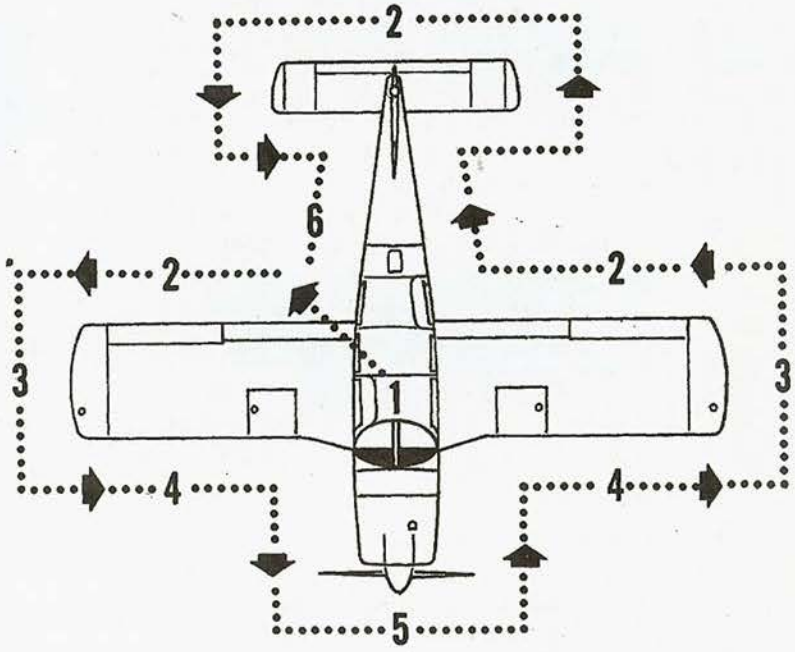
SECTION III

OPERATING INSTRUCTIONS

PREFLIGHT

The airplane should be given a thorough visual inspection prior to each flight. Particular attention should be given to the following items in the illustration below:

1. a. Master switch **ON**.
   b. Check fuel quantity indicators (four tanks).



c. Depress sump drain knob for five seconds to drain water and sediment. Check from outside the airplane to make sure the drain has closed.

d. Master switch and ignition **OFF**.

2. a. Check for external damage and operational interference of control surfaces or hinges.

b. Insure that wings and control surfaces are free of snow, ice or frost.

3. a. Visually check fuel supply, secure caps.

b. Drain fuel tank sumps.

c. Check navigation lights.

4. a. Visually check fuel supply, secure caps.

b. Drain fuel tank sumps.

c. Check that fuel system vents are open.

d. Check landing gear shock struts for proper inflation.

e. Check tires for cuts, wear and proper inflation.

5. a. Check windshield for cleanliness.

b. Check the propeller and spinner for defects or nicks.

c. Check for obvious fuel or oil leaks.

d. Check oil level. (Insure dipstick is properly seated.)

e. Check cowling and inspection covers for security.

f. Check nose wheel tire for inflation, wear.

g. Check nose wheel shock strut for proper inflation.

6. a. Stow tow bar and control locks, if used.

b. Check baggage for proper storage and security.

c. Close and secure the baggage compartment door.

7. a. Upon entering aircraft ascertain that all primary flight controls operate properly.

b. Close and secure the cabin door.

c. Check that required papers are in order and in the aircraft.

STARTING ENGINE

After completion of the preflight inspection:

1. Lock the wheel brakes.
2. Set the carburetor heat control in the full **COLD** position.

3. Set propeller control in full **INCREASE** RPM.
4. Select the desired tank with the fuel valve.
5. Move the mixture control to the full **RICH** position.
6. Open the throttle 1/8 to 1/4 inch.
7. Turn the electric fuel pump **ON**.

In cold weather (below 40 degrees F.) prime the engine with one to three full strokes of the priming pump. If extremely cold, starting will be aided by pulling the propeller through by hand (switch **OFF**) four to five revolutions. If the temperature is above 40 degrees the engine may be primed by three or four short quick strokes of the throttle.

After priming, turn the electric master switch on, engage the starter and allow the engine to turn approximately one full revolution, then turn the ignition switch to the **LEFT** magneto position.

When the engine is firing evenly, turn the magneto switch to the **BOTH** position and advance the throttle to 800 RPM. Check the oil pressure gauge for a pressure indication. If oil pressure is not indicated within thiry seconds, stop the engine and determine the trouble.

If the engine fails to start at the first attempt, another attempt should be made without priming. If this fails, it is possible that the engine is overprimed. Turn the magneto switch **OFF** open the throttle slowly, and rotate the engine approximately ten revolutions with the starter. Reprime the engine with one-half the amount used in the initial attempt, turn the magneto switch to **LEFT** and repeat the starting procedure. If the engine again fails to start, refer to the "Lycoming Operating Handbook, Section VII, Engine Troubles." Do not take off with a dead battery as some voltage is necessary to excite the alternator.

WARM-UP

As soon as the engine starts, the oil pressure should be checked. If no pressure is 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.

Warm-up the engine at 800 to 1200 RPM.

Take-off may be made as soon as ground check is completed, provided the throttle may be opened fully without back firing or skipping, and without reduction in engine oil pressure.

GROUND CHECK

The magnetos should be checked at 1800 RPM on airplanes with a fixed pitch propeller or at 2300 RPM with propeller set at high RPM on airplanes with a constant speed propeller. Drop off on either magneto should not exceed 125 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 take-off.

The propeller control should be moved through its complete range to check for proper operation, and then placed in full high RPM for take-off. 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. Do not allow a drop of more than 500 RPM during this check. In cold weather the propeller control should be cycled at least three times to assure that warm engine oil has circulated.

Check the operation of the engine driven fuel pump by observing fuel pressure gauge with the electric fuel pump off.

Carburetor heat should also be checked prior to take-off to be sure that the control is operating properly and to clear any ice which may have formed during taxiing.

TAKE-OFF

Just before take-off the following items should be checked:

1. Controls free
2. Flaps set
3. Tab set
4. Propeller set
5. Mixture **RICH**
6. Carburetor heat **OFF**
7. Fuel selector on proper tank
8. Electric fuel pump **ON**

9. Engine gauges normal
10. Doors latched
11. Altimeter set

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).

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. Turn fuel pump off after climb-out, or when switching tanks.

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 8 MPH.

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

Lazy eights and chandelles may be performed provided a 60° angle of bank or a 30° angle of pitch is not exceeded.

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.

Use of the mixture control in cruising flight reduces fuel consumption significantly, especially at high altitudes. The mixture should always be leaned during cruising operations at 75% power or less, but during the climb only at altitudes above 5000 feet.

When selecting cruising RPM below 2300, limiting manifold pressure for continuous operation, as specified by the Lycoming Operator's Manual, should be observed.

The continuous use of carburetor heat during cruising flight decreases engine efficiency. Unless icing conditions in the carburetor are severe, do not cruise with the heat on. Apply full carburetor heat slowly and only for a few seconds at intervals determined by icing severity.

For best lateral trim during cruise, the fuel should be used from alternate tip tanks. Draw fuel from one tip tank for an hour after take-off, from the alternate tip tank until it is nearly empty, then back to the first tip tank. Alternate the fuel selector between main tanks at one hour intervals.

Avoid switching tanks at low altitude since little recovery time is available in event of an error in tank selection. To preclude making a hasty decision, and to provide continuity of flow, the selector should be changed before fuel is exhausted from the tank in use. Be sure that the fuel selector drops into a detent

and is aligned with the desired tank. Turn the electric fuel pump on before switching tanks and leave it on for a short period to establish flow.

During cruise the electric fuel pump should be off so that any malfunction of the engine driven fuel pump is immediately apparent. If signs of fuel starvation occur, suspect fuel exhaustion in the tank being used and switch to a tank with fuel.

APPROACH AND LANDING

Before landing check list:

1. Mixture **RICH**
2. Propeller set
3. Carburetor heat **OFF** (unless icing conditions exist)
4. Electric fuel pump **ON**
5. Fuel selector on proper tank
6. Flaps as desired (under 125 MPH)

The airplane should be trimmed to an approach speed of about 90 MPH and flaps extended. The flaps can be lowered at speeds up to 125 MPH, if desired. The propeller should be set at full RPM or at a high cruising RPM to facilitate an emergency go-around if needed. Carburetor heat should not be applied unless there is an indication of carburetor icing, since the use of carburetor heat causes a reduction in power which may be critical in case of a go-around. Full throttle operation with heat on is likely to cause detonation.

The amount of flap used during landings and the speed of the aircraft at contact with the runway should be varied according to the landing surface and conditions of wind and aircraft loading. It is generally good practice to contact the ground at the minimum possible safe speed consistent with existing conditions.

Normally, the best technique for short and slow landings is to use full flap and enough power to maintain the desired air-

speed and approach flight path. Mixture should be full rich, fuel on the fullest tank, carburetor heat off, and electric fuel pump on. Reduce the speed during the flareout and contact the ground close to the stalling speed (63 to 70 MPH). After ground contact hold the nose wheel off as long as possible. As the airplane slows down, drop the nose and apply the brakes. There will be less chance of skidding the tires if the flaps are retracted before applying the brakes. Braking is most effective when back pressure is applied to the control wheel, putting most of the aircraft weight on the main wheels. In high wind conditions, particularly in strong crosswinds it may be desirable to approach the ground at higher than normal speeds with partial or no flaps.

MOORING

The Cherokee Six should be moved on the ground with the aid of the nose wheel tow bar provided with each plane and secured behind the rear seats. Tie downs can be secured to rings provided under each wing and to the tail skid. The aileron and stabilator controls should be secured by looping the safety belt through the control wheel and pulling it tight. The rudder is held in position by its connections to the nose wheel steering and normally does not have to be secured. The flaps are locked when in the full up position and should be left retracted.

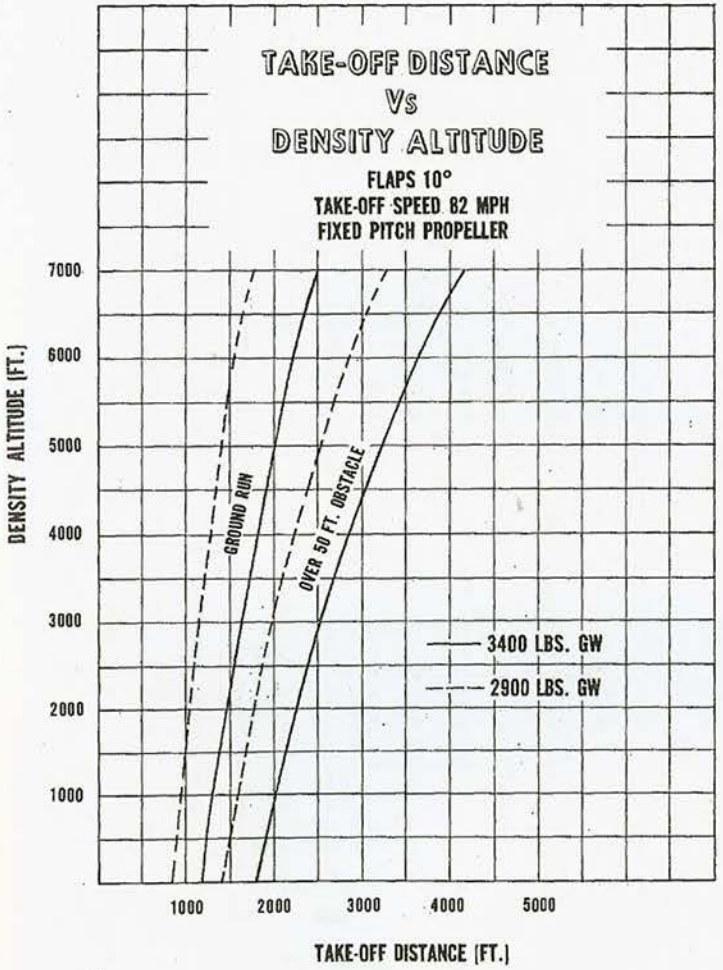
WEIGHT AND BALANCE

It is the responsibility of the owner and pilot to determine that the airplane remains within the allowable weight vs. center of gravity envelope while in flight. For weight and balance data see the Airplane Flight Manual and Weight and Balance form supplied with each airplane.

SECTION IV

PERFORMANCE CHARTS

PA-32-260
CHEROKEE SIX



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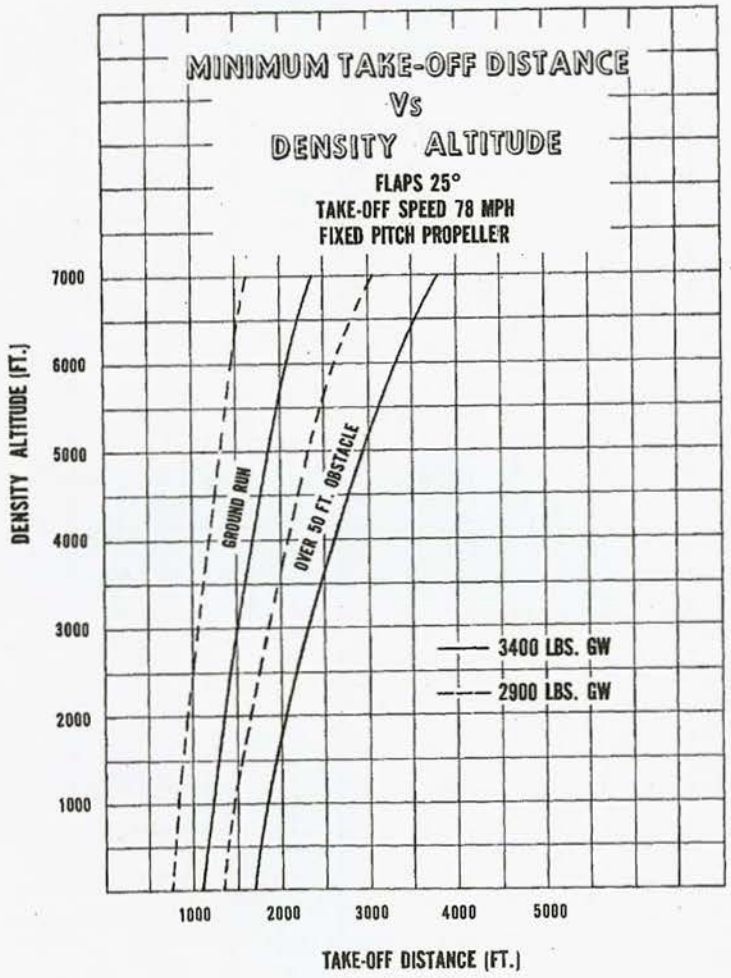
CHEROKEE SIX



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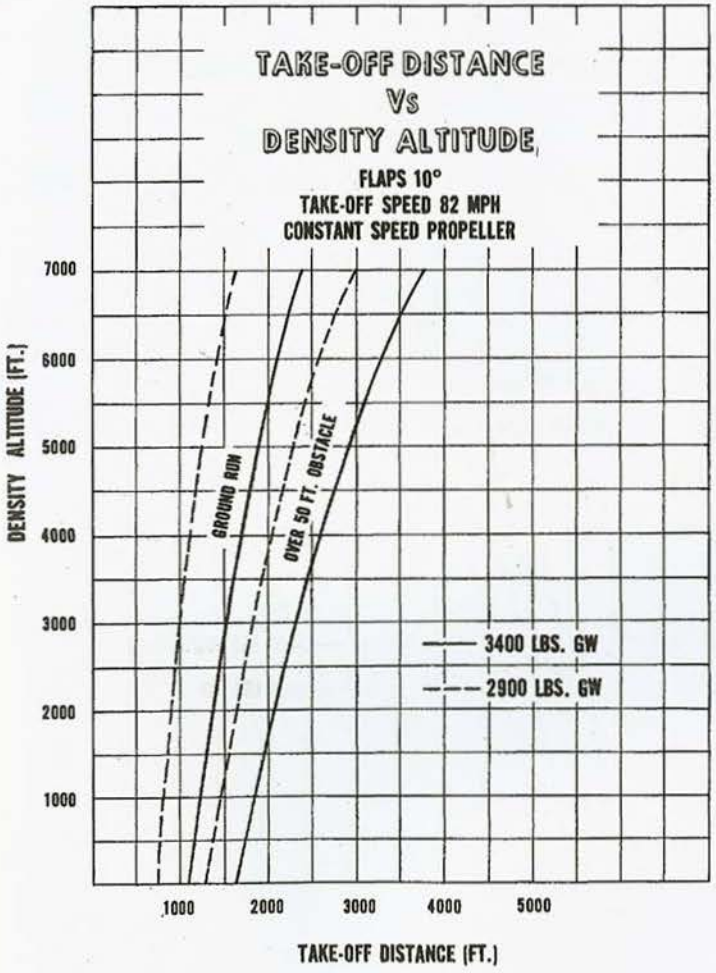

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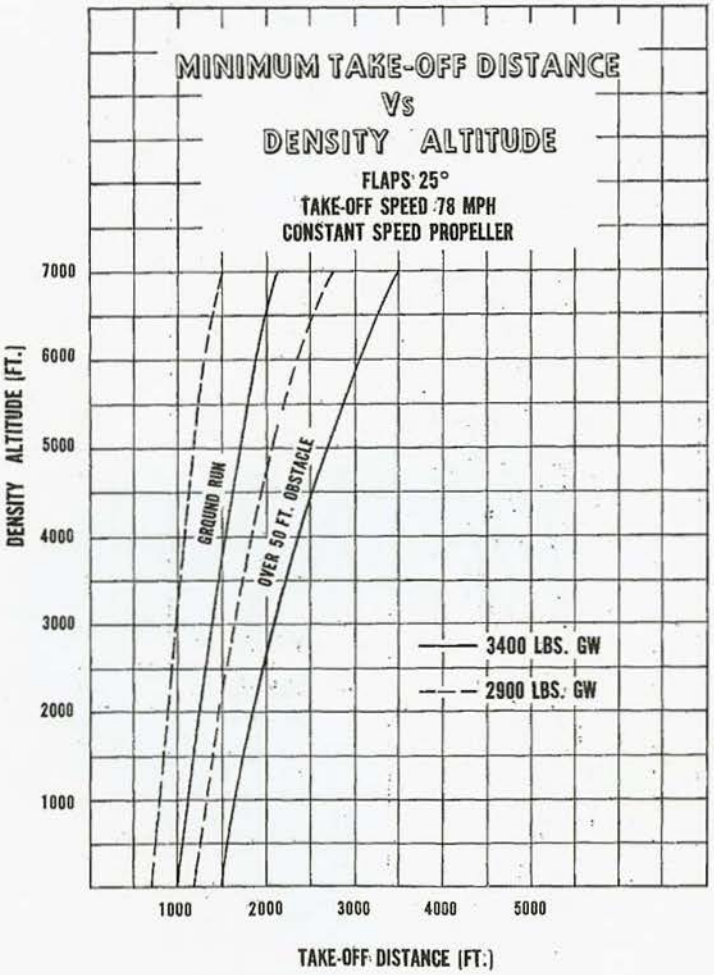

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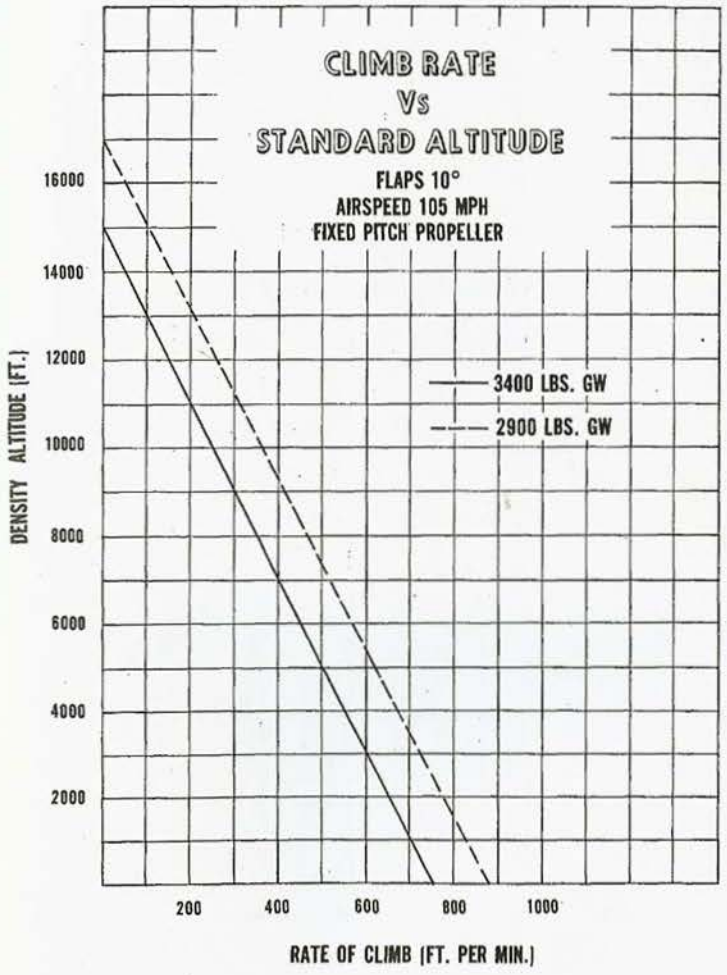

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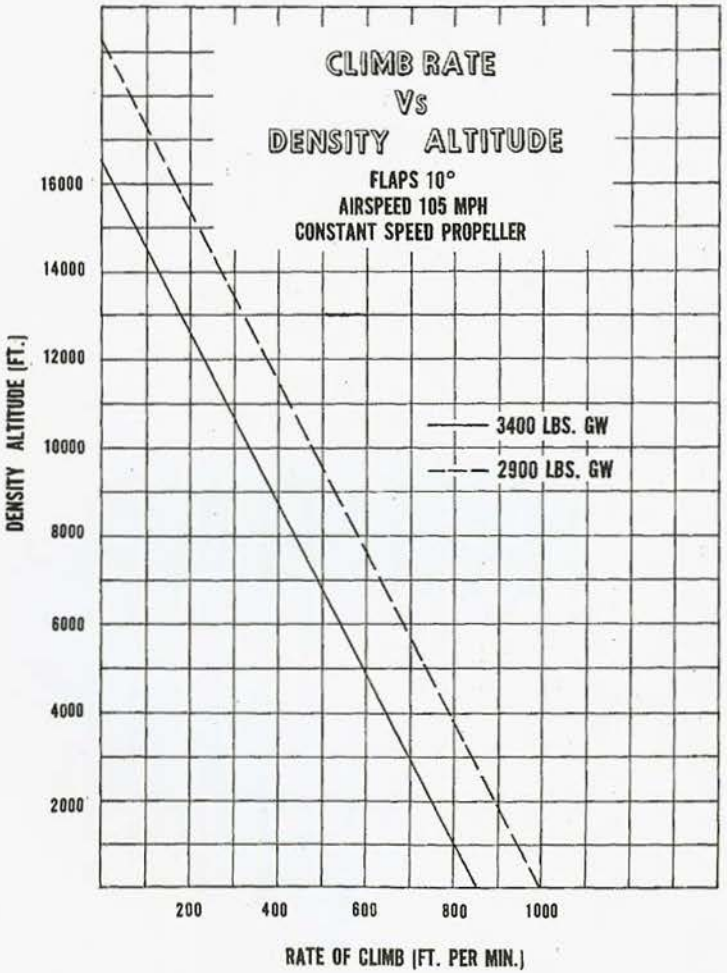

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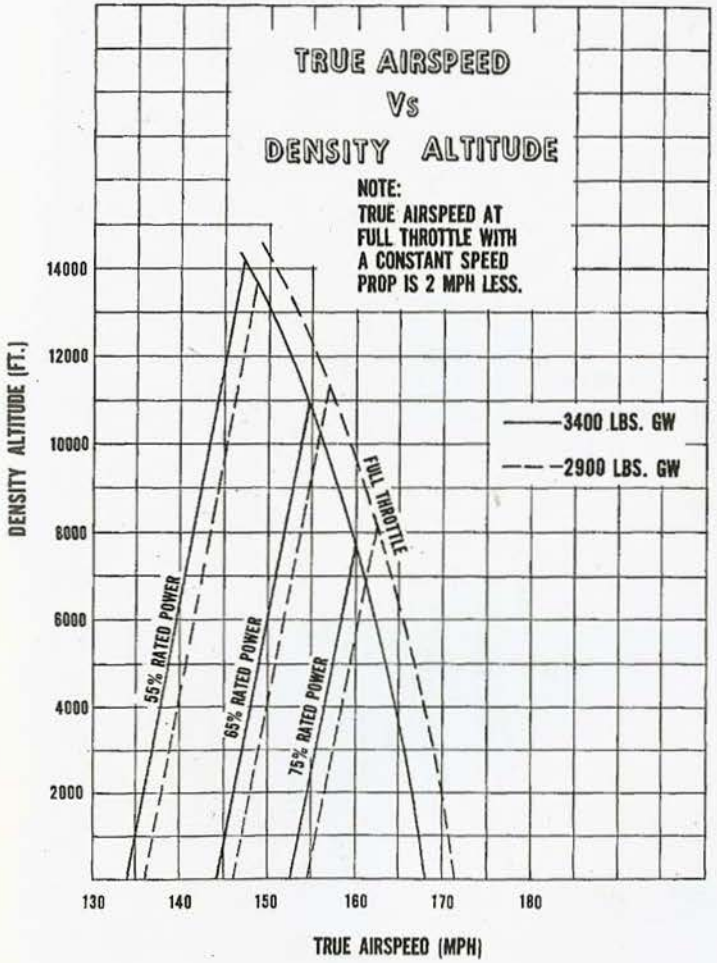

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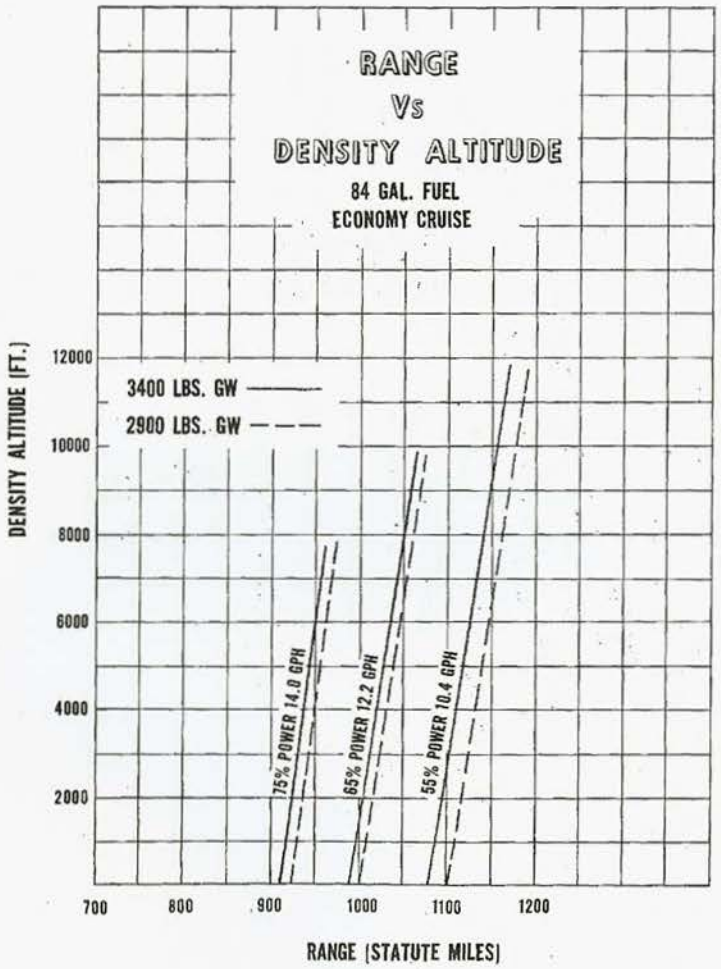

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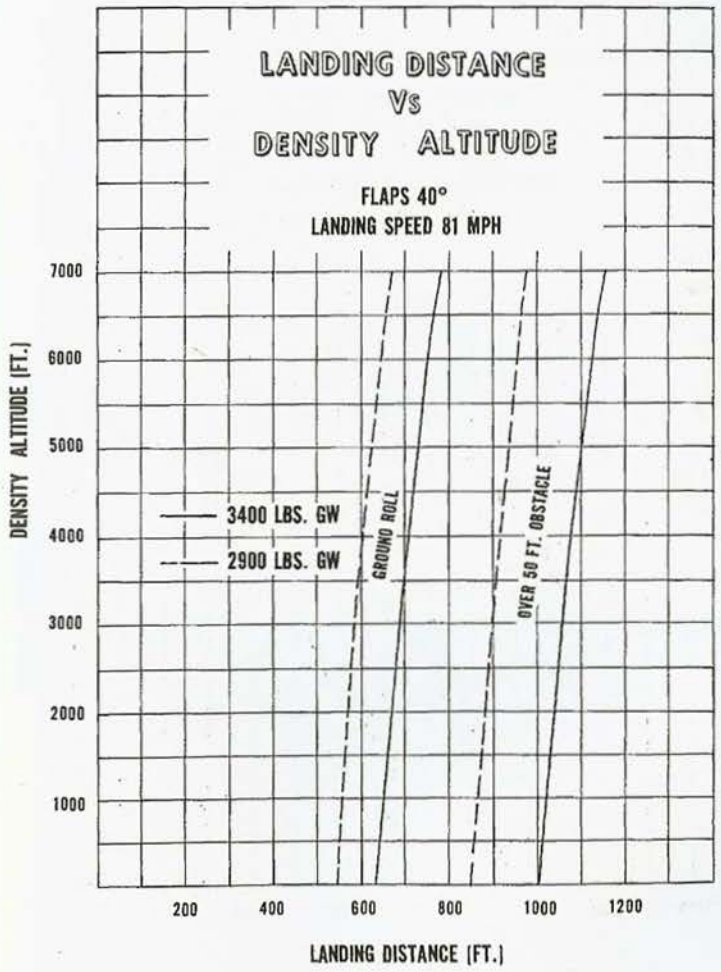

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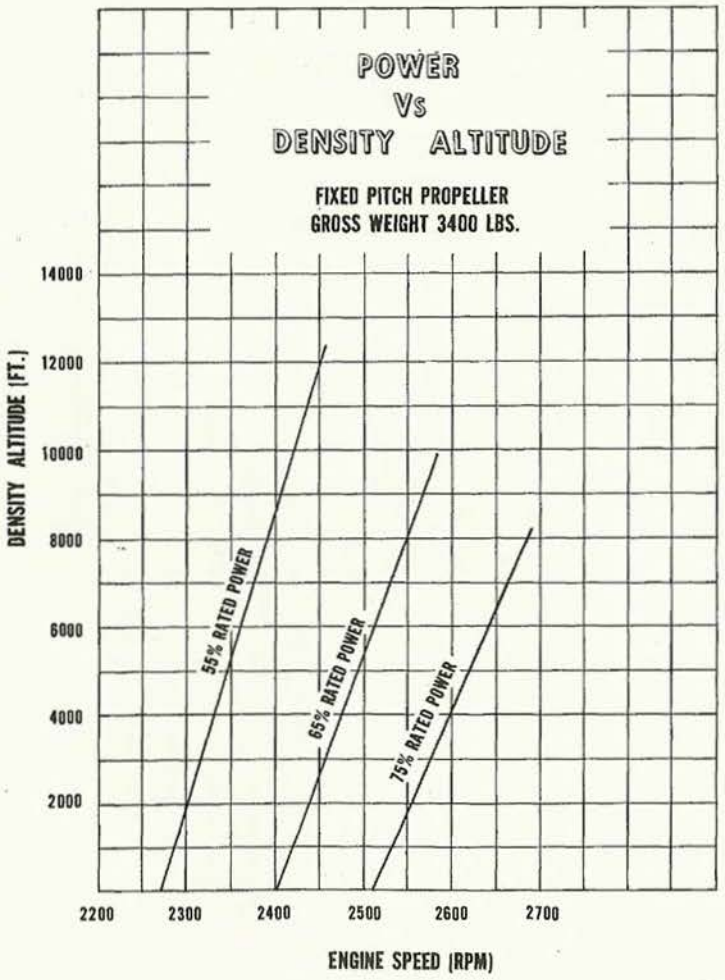

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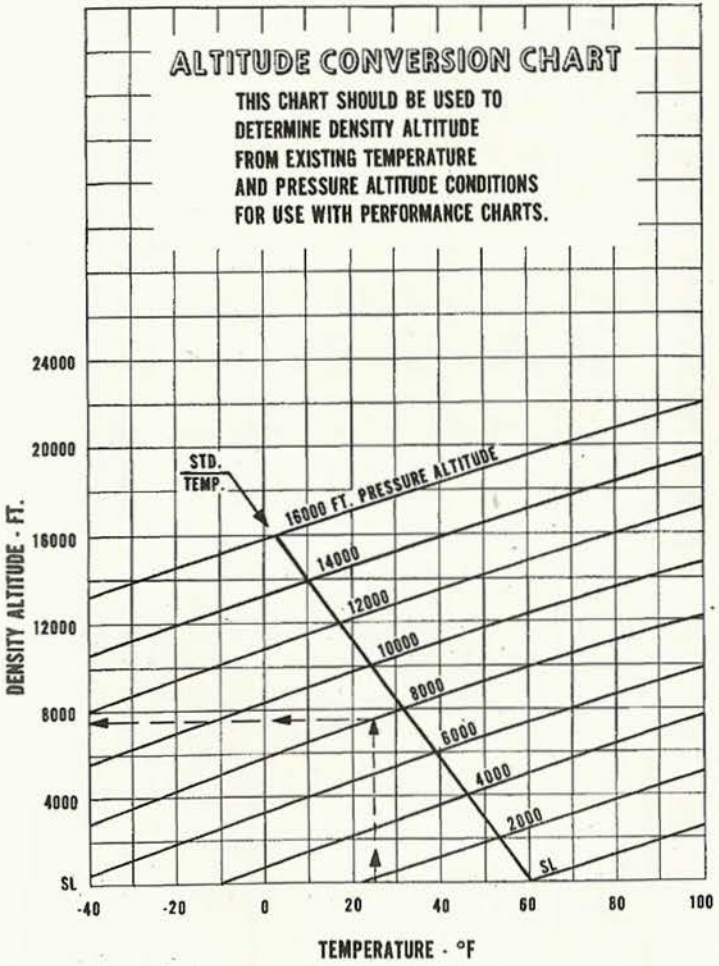

Power Setting Table - Lycoming Model O-540-E,-G, 260 HP Engine

Press. Alt Feet	Std. Alt Temp °F	143 HP – 55% Rated RPM AND MAN. PRESS. 2100	2200	2300	2400	169 HP – 65% Rated RPM AND MAN. PRESS. 2100	2200	2300	2400	195 HP – 75% Rated RPM AND MAN. PRESS. 2200	2300	2400	2500	Press. Alt Feet
SL	59	21.7	20.8	20.2	19.5	24.6	23.6	22.7	21.9	26.3	25.3	24.4	23.8	SL
1,000	55	21.5	20.6	20.0	19.3	24.4	23.3	22.5	21.7	26.0	25.0	24.1	23.5	1,000
2,000	52	21.3	20.4	19.8	19.1	24.1	23.1	22.2	21.5	25.7	24.8	23.9	23.3	2,000
3,000	48	21.0	20.1	19.6	18.9	23.8	22.9	22.0	21.2	25.4	24.5	23.6	23.0	3,000
4,000	45	20.8	19.9	19.4	18.7	23.6	22.6	21.8	21.0	25.1	24.2	23.3	22.7	4,000
5,000	41	20.6	19.7	19.2	18.4	23.3	22.4	21.5	20.8	24.8	23.9	23.0	22.5	5,000
6,000	38	20.4	19.5	18.9	18.2	23.1	22.2	21.3	20.6	--	23.7	22.8	22.2	6,000
7,000	34	20.2	19.3	18.7	18.0	22.8	22.0	21.1	20.4	--	--	22.5	22.0	7,000
8,000	31	20.0	19.1	18.5	17.8	22.6	21.8	20.8	20.1	--	--	22.3	21.7	8,000
9,000	27	19.8	18.8	18.3	17.6	--	21.6	20.6	19.9					9,000
10,000	23	19.6	18.6	18.1	17.4	--	--	20.3	19.7					10,000
11,000	19	19.4	18.4	17.9	17.2	--	--	--	19.5					11,000
12,000	16	19.2	18.2	17.7	17.0				19.3					12,000
13,000	12	--	17.9	17.4	16.8									13,000
14,000	9	--	17.7	17.2	16.6									14,000
15,000	5	--	--	17.0	16.4									15,000

To maintain constant power, correct manifold pressure approximately 0.17" Hg for each 10° F variation in carburetor air temperature from standard altitude temperature. Add manifold pressure for air temperature above standard; subtract for temperatures below standard.

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SECTION V

GENERAL MAINTENANCE

SECTION V

GENERAL MAINTENANCE

TIRE INFLATION

For maximum service from the tires on the Cherokee Six, keep the tires inflated to the proper pressure of 35 to 40 pounds for the main gear and 28 to 30 pounds for the nose wheel. Interchange the tires on the main wheels, if necessary, to produce even wear. All wheels and tires are balanced before original installation, and the relationship of the tire, tube and wheel should be maintained, if at all possible. Out of balance wheels can cause extreme vibration on take-off. In the installation of new components, it may be necessary to rebalance the wheels with the tires mounted.

BATTERY SERVICE

Access to the 12 volt battery is through a removable panel in the floor of the forward baggage compartment. The stainless steel box has a plastic drain tube which is normally closed off with a cap and which should be opened occasionally to drain off any accumulation of liquid. The battery should be checked for proper fluid level but must not be filled above the baffle plates. A hydrometer check should be performed to determine the percent of charge present in the battery.

If the battery is not up to charge, recharge starting at a 4 amp rate and finishing with a 2 amp rate. Quick charges are not recommended.

BRAKE SERVICE

The brake system is filled with Univis No. 40 (petroleum base) hydraulic brake fluid. This should be checked at every 100 hour inspection and replenished when necessary by filling the brake reservoir on the firewall to the indicated level. If the system as a whole has to be refilled with fluid, this should be done by filling with the fluid under pressure from the brake end of the system. This will eliminate air from the system as it is being filled.

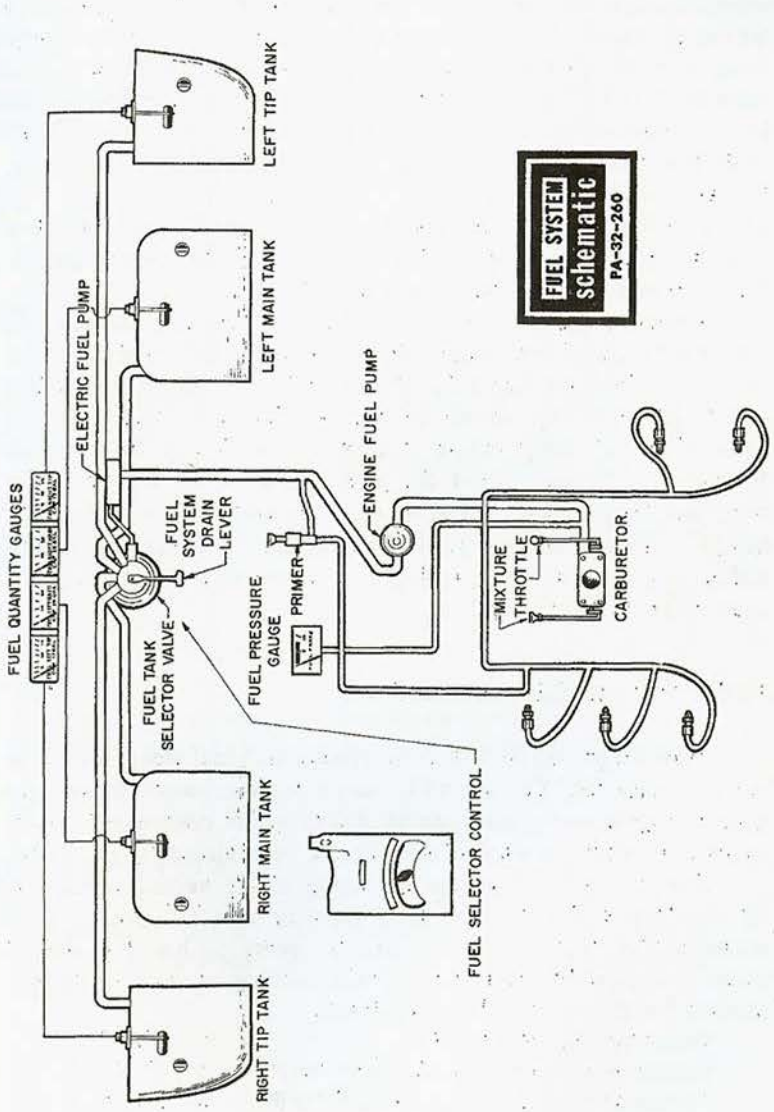
No adjustment of brake clearances is necessary on the Cherokee Six. If after extended service the brake blocks become worn excessively, they are easily replaced with new segments.

LANDING GEAR SERVICE

Main wheels are removed by taking off the hub cap, axle nut, and the two bolts holding the brake segment in place, after which the wheel slips easily from the axle. Tires are demounted by deflating the tire, removing the through bolts and separating the wheel halves.

Landing gear oleo struts should be checked for proper strut exposures and fluid leaks. The required extensions for the strut when under normal static load (empty weight of airplane plus full fuel and oil) is 3-1/4 inches for the nose gear and 4-1/2 inches for the main gear. If the strut exposure is below that required, it should be determined whether air or oil is required by first raising the airplane on jacks. Depress the valve core to allow air to escape from the strut housing chamber. Remove the filler plug and slowly raise the strut to full compression. If the strut has sufficient fluid it will be visible up to the bottom of the filler plug hole and will only require proper inflation.

If fluid is below the bottom of the filler plug hole, oil should be added. Replace the plug with valve core removed, attach a clear plastic hose to the valve strut of the filler plug and submerge the other end in a container of hydraulic fluid (MIL-H-5606). Fully compress and extend the strut several times thus drawing fluid from the container and expelling air from the strut chamber.



To allow the fluid to enter the bottom chamber of the main gear strut housing, the torque link assembly must be disconnected to let the strut extend a minimum of 10 inches. (The nose gear torque links need not be disconnected.) Do not allow the strut to extend more than 12 inches. When air bubbles cease to flow through the hose, compress the strut fully and again check fluid level. Reinstall the valve core, filler plug, and the main gear torque links, if disconnected.

With fluid in the strut housing at the correct level, attach a strut pump to the air valve. With the airplane on the ground, inflate the oleo strut to the correct height.

In jacking the Cherokee Six for landing gear or other service, a jack kit (available through a Piper Dealer or Distributor) should be used. This kit consists of two hydraulic jacks and a tail stand. At least 350 pounds of ballast should be placed on the base of the tail stand before jacking up the aircraft. The hydraulic jacks are placed under the jack points on the bottom of the wing and the airplane jacked up until the tail skid is at the right height to attach the tail stand. After attaching the tail stand and adding the ballast, the jacking may be continued until the aircraft is at the height desired.

FUEL AND OIL REQUIREMENTS

Aviation grade 100/130 octane (minimum) fuel must be used in the Cherokee Six. The use of lower grades can cause serious engine damage in a very short period of time and is considered of such importance that the engine warranty is invalidated by such use.

The oil capacity of the Lycoming O-540 series engines is 12 quarts and the minimum safe quantity is 2-3/4 quarts. It is recommended that the oil be changed every 50 hours or sooner under unfavorable conditions. The following grades are recommended for the specified temperatures:

Temperatures above 60° F	S.A.E. 50
Temperatures between 30° F and 90° F	S.A.E. 40
Temperatures between 0° F and 70° F	S.A.E. 30
Temperatures below 10° F	S.A.E. 20

CARE OF AIR FILTER

The carburetor air filter must be cleaned at least once every fifty hours. Under extremely adverse conditions of operation it may be necessary to clean the filter daily. Extra filters are inexpensive and a spare should be kept on hand and used as a rapid replacement.

The filter manufacturer recommends that the filter be tapped gently to remove dirt particles. Do not blow out with compressed air.

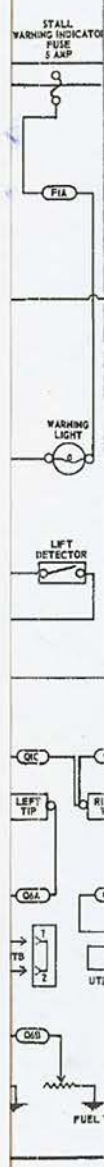
CARE OF WINDSHIELD AND WINDOWS

A certain amount of care is needed to keep the plexiglas windows clean and unmarred. The following procedure is recommended:

1. Flush with clean water and dislodge excess dirt, mud, etc., with your hand.
2. Wash with mild soap and water. Use a soft cloth or sponge. Do not rub.
3. Remove oil, grease or sealing compounds with a soft cloth and kerosene.
4. After cleaning, apply a thin coat of hard polishing wax. Rub lightly with a soft cloth.
5. A severe scratch or mar may be removed by using jeweler's rouge to rub out the scratch, smoothing and then applying wax.

SERIAL NUMBER PLATE

The serial number plate is located near the stabilator on the left side of the airplane. Refer to this number for service or warranty matters.



LEVELING AND RIGGING

To level the Cherokee Six for purposes of weighing or rigging:

1. Partially withdraw two machine screws located immediately below the left front side window. These screws are leveling points and the airplane is longitudinally level when a level placed on the heads of these screws indicates level.

2. To put the airplane in a longitudinally level position on scales, first block the main gear oleos in the fully extended position, then deflate the nose wheel tire until the proper attitude is obtained. For rigging only, the airplane may be placed on jacks for leveling.

3. To level the airplane laterally, place a level across the baggage compartment floor along the rear bulkhead.

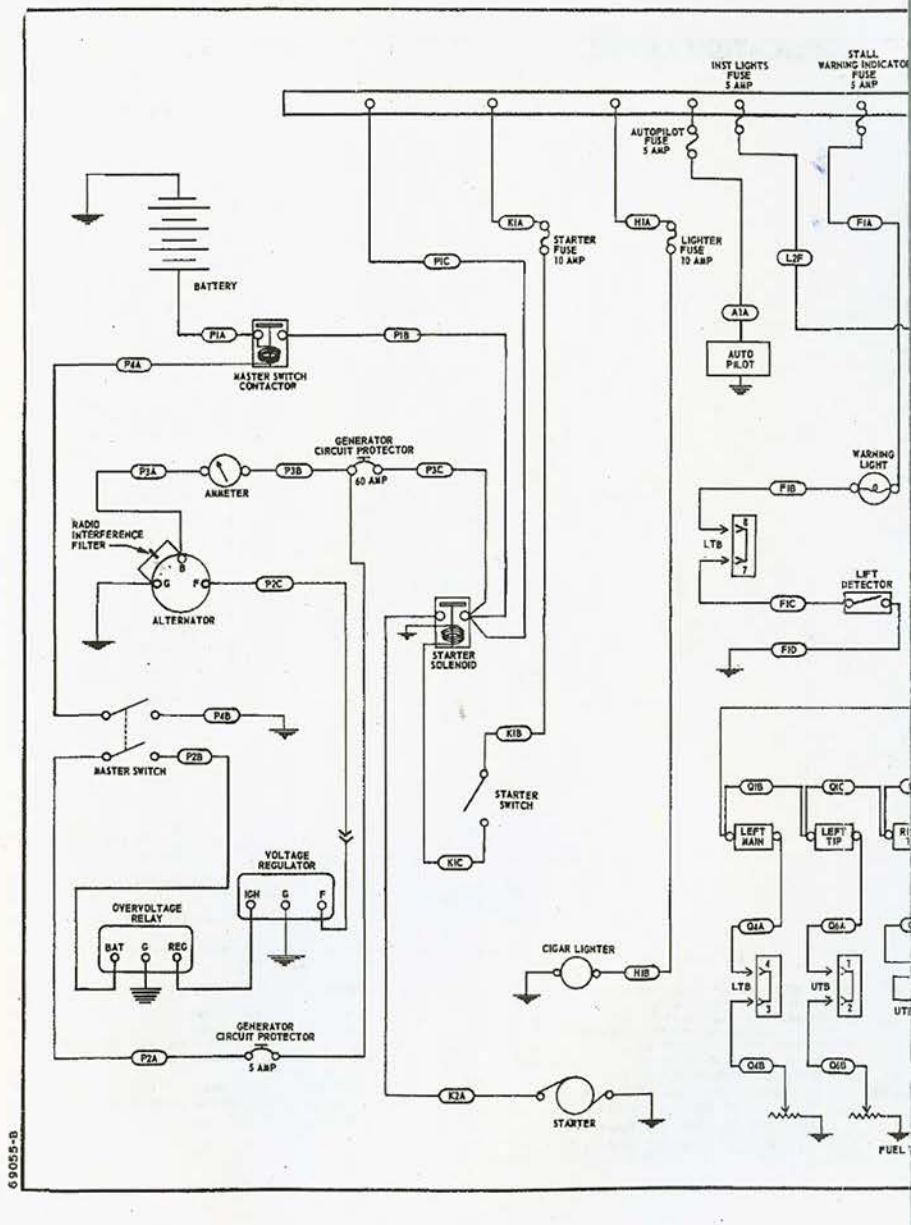
Rigging: Although the fixed flight surfaces on the Cherokee Six cannot be adjusted for rigging purposes, it may be necessary upon occasion to check the position of these surfaces. The movable surfaces all have adjustable stops, as well as adjustable turnbuckles on the cables or push-pull tubes, so that their range of travel can be altered. The positions and angular travels of the various surfaces are as follows:

1. Wings: 7° dihedral, 2° washout.
2. Stabilator Travel: 16° up, 2° down, tolerance ± 1°.
3. Fin should be vertical, and in line with center of fuselage.
4. Aileron Travel: 30° up, 15° down, tolerance ± 2°.
5. Flap Travel: 10°, 25°, 40°, tolerance ± 2°.
6. Rudder Travel: 27° right and left, tolerance ± 2°.
7. Stabilator Trim Tab Travel: 5° up, 8° down, tolerance ± 1°.

Cable tensions for the various controls are as follows:

Rudder: 85 ± 5#	Stabilator: 40 ± 5#
Ailerons: 40 ± 5#	Stabilator Trim: 10 ± 2#

For extreme cases of wing heaviness, either of the flaps may be adjusted up or down from the zero position.



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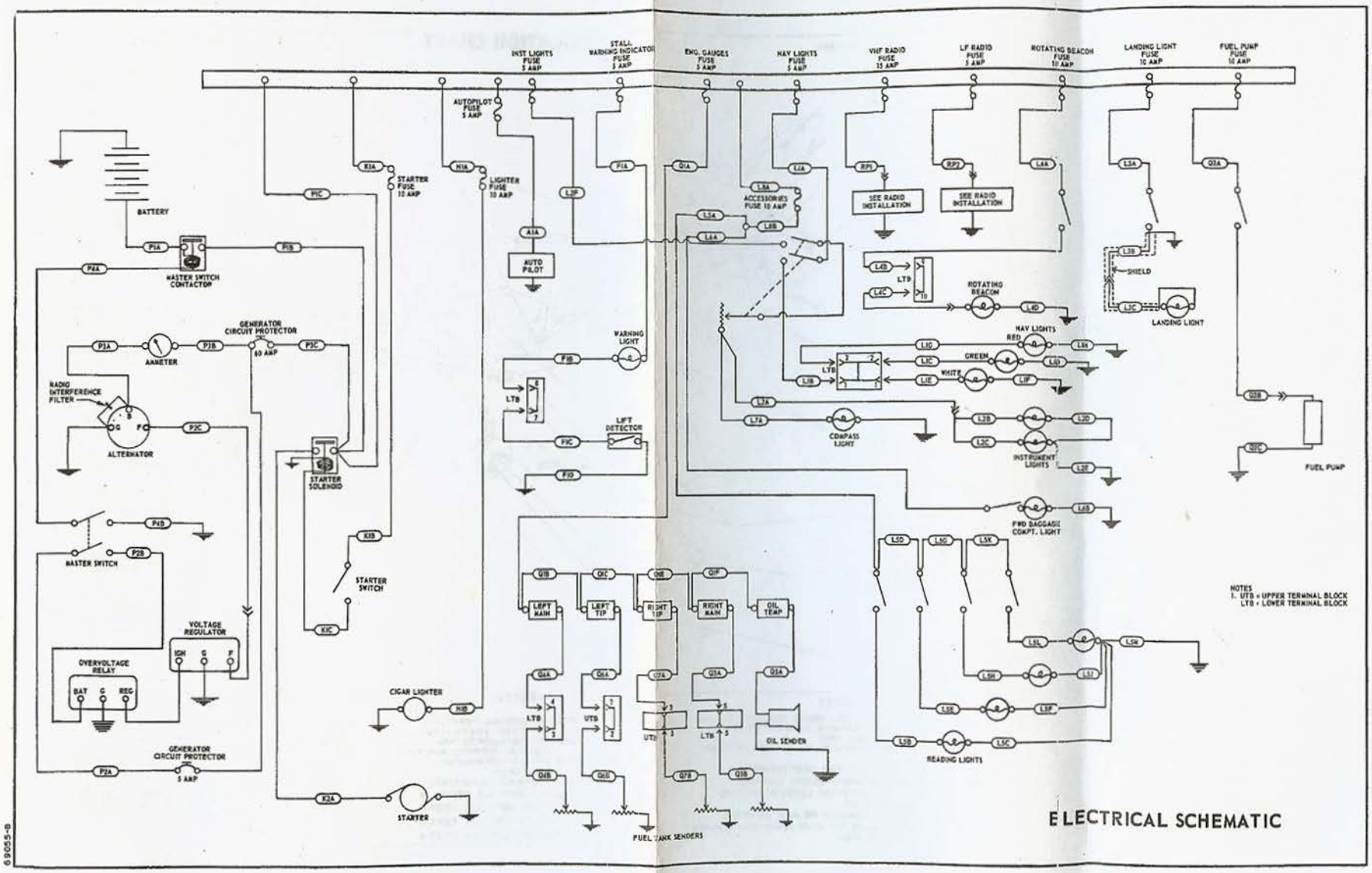

ELECTRICAL SCHEMATIC

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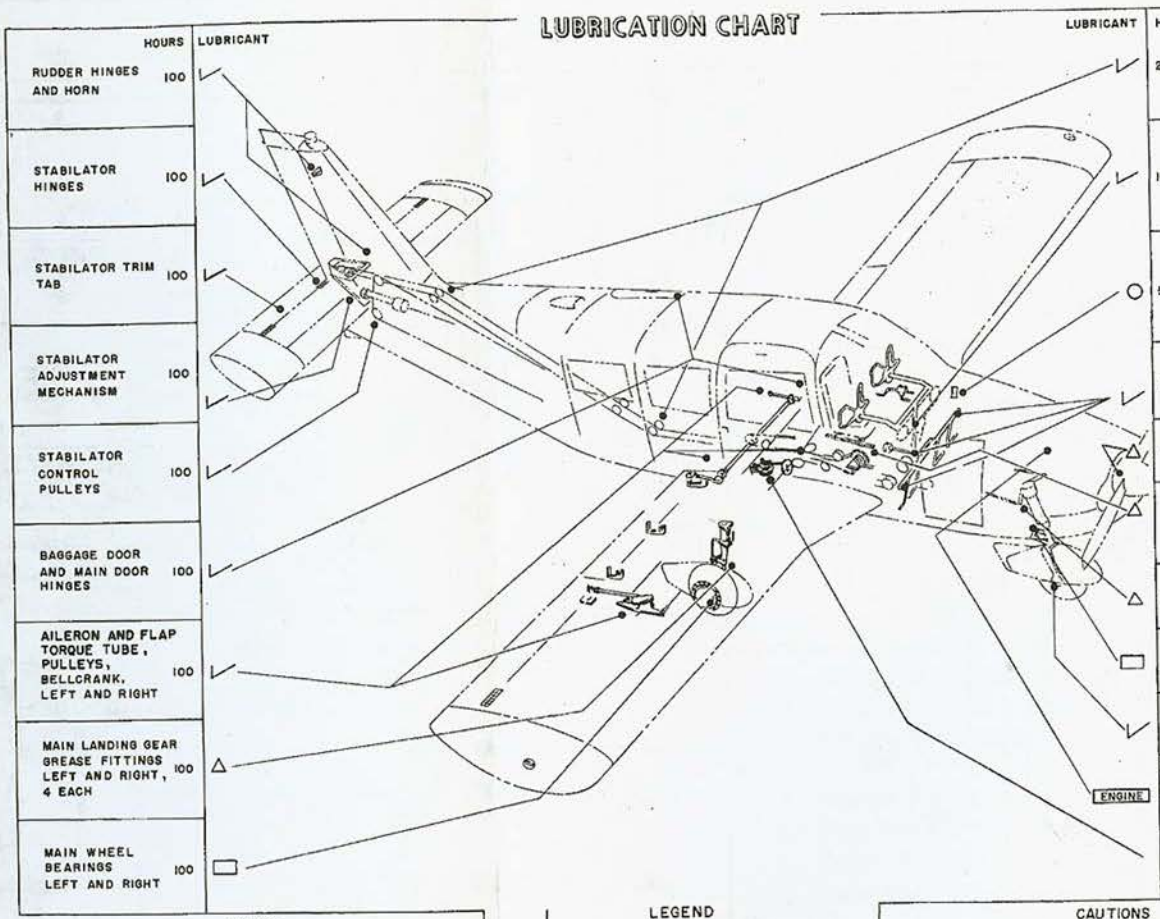
LUBRICATION CHART



	HOURS	LUBRICANT
RUDDER HINGES AND HORN	100	
STABILATOR HINGES	100	
STABILATOR TRIM TAB	100	
STABILATOR ADJUSTMENT MECHANISM	100	
STABILATOR CONTROL PULLEYS	100	
BAGGAGE DOOR AND MAIN DOOR HINGES	100	
AILERON AND FLAP TORQUE TUBE, PULLEYS, BELLCRANK, LEFT AND RIGHT	100	
MAIN LANDING GEAR GREASE FITTINGS LEFT AND RIGHT, 4 EACH	100	
MAIN WHEEL BEARINGS LEFT AND RIGHT	100	

LUBRICANT	HOURS
	STABILATOR TRIM 250 PULLEYS (SEE CAUTION 4)
	100 CONTROL COLUMN
	50 BRAKE RESERVOIR MAINTAIN FLUID LEVEL INDICATED ON THE SIDE OF RESERVOIR
	100 RUDDER ADJUSTMENT MECHANISM AND RUDDER ASSEMBLY
	100 PROPELLER GREASE FITTINGS, 4 TOTAL
	100 FRONT SEAT ADJUSTMENT
	100 NOSE WHEEL STEERING
	100 NOSE WHEEL SCISSORS
	100 NOSE WHEEL BEARING
ENGINE	50 ENGINE OIL TANK DRAIN AND REFILL 12 QTS
	100 SEE NOTE 5

NOTES

1. FUEL SYSTEM - THE FOLLOWING POINTS REQUIRE REGULAR SERVICING - FUEL PUMP STRAINER, CARBURETOR SCREEN, FILTER BOWL, QUICK DRAIN UNIT
2. LANDING GEAR STRUTS - FOLLOW INSTRUCTION PLACARD ON OLEO STRUT
3. MISCELLANEOUS - DURING ROUTINE MAINTENANCE CHECKS, APPLY LUBRICATION TO MISCELLANEOUS LINKAGES
4. BATTERY - CHECK BATTERY FLUID LEVEL & BATTERY CONDITION EVERY 25 HOURS
5. FUEL SELECTOR VALVE - LUBRICATE THE AREA WHERE THE DETENT BALL MOVES ACROSS THE COVER PLATE WITH DUPONT'S ALL PURPOSE SLIP SPRAY #6611

LEGEND

✓	MIL-L-7870 OIL-GENERAL PURPOSE LOW TEMP LUBRICATION
△	MIL-G-23827 GREASE-LUBRICATION GENERAL PURPOSE AIRCRAFT
□	MIL-L-3545 GREASE-LUBRICATION HIGH TEMP
○	MIL-H-5606 HYDRAULIC FLUID (RED)
ENGINE	SAE 50 ABOVE 60°F AIR TEMP *
	SAE 40 30°F TO 90°F AIR TEMP *
	SAE 30 0°F TO 70°F AIR TEMP *
	SAE 20 BELOW 10°F AIR TEMP *

CAUTIONS

1. DO NOT USE A HYDRAULIC FLUID WITH A CASTOR OIL OR ESTER BASE
2. DO NOT OVER-LUBRICATE PEDESTAL CONTROLS
3. DO NOT APPLY LUBRICANT TO RUBBER PARTS
4. UNDER NO CIRCUMSTANCES SHOULD THE TRIM CABLES FROM THE COCKPIT TO THE REAR OF THE FUSELAGE BE LUBRICATED - AS THIS MAY CAUSE SLIPPAGE
5. REMOVE ALL EXCESS GREASE FROM GREASE FITTINGS

* NON-DETERGENT SEE LYCOMING SERVICE INSTRUCTIONS NO.1014 FOR USE OF DETERGENT OIL

INDEX

INDEX (cont)