Your 1960

CESSNA

175

AND

Skylark

Owner's Manual

Congratulations . . . .

Welcome to the ranks of Cessna owners! Your Cessna has been designed and constructed to give you the most in performance, economy, and comfort. You will find flying it, either for business or pleasure, a pleasant and profitable experience.

This Owner's Manual has been prepared as a guide to help you get the most pleasure and utility from your airplane. It contains information about your Cessna's equipment, operating procedures, and performance; and suggestions for its servicing and care. We urge you to read it from cover to cover, and to refer to it frequently.

Our interest in your flying pleasure has not ceased with your purchase of a Cessna. World-wide, the Cessna Dealer Organization backed by the Cessna Service Department stands ready to serve you. The following services are offered only by your Cessna Dealer:

1) FACTORY TRAINED MECHANICS to provide you with courteous expert service.
2) FACTORY APPROVED SERVICE EQUIPMENT to provide you with the most efficient and accurate workmanship possible.
3) A STOCK OF GENUINE CESSNA SERVICE PARTS on hand when you need them.
4) THE LATEST AUTHORITATIVE INFORMATION FOR SERVICING CESSNA AIRPLANES, since Cessna Dealers have all of the Service Manuals and Parts Catalogs, kept current by Service Letters and Service News Letters published by Cessna Aircraft Company.

We urge all Cessna owners to use the Cessna Dealer Organization to the fullest.

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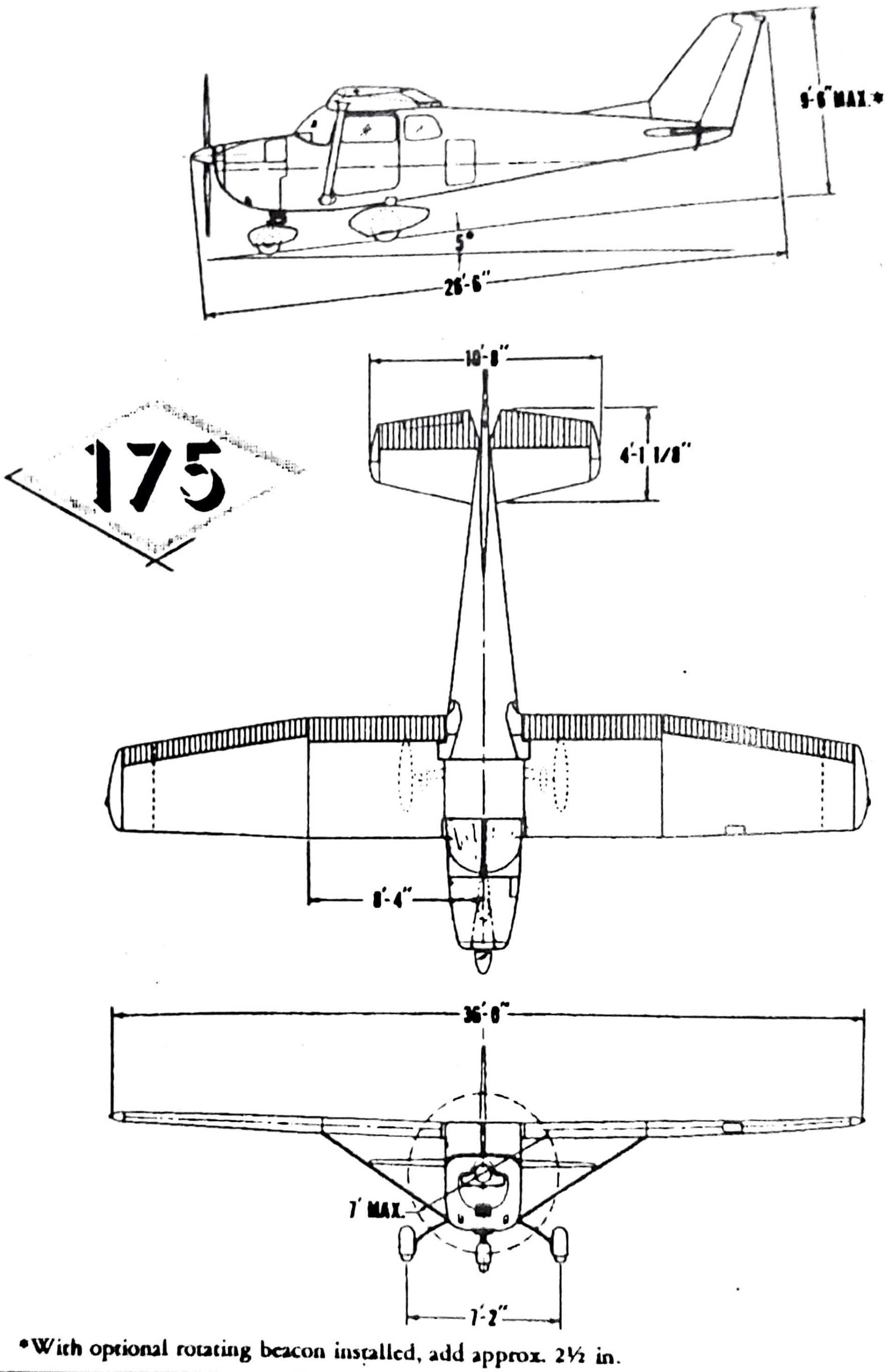

*With optional rotating beacon installed, add approx. 2½ in.

PRINCIPAL DIMENSIONS

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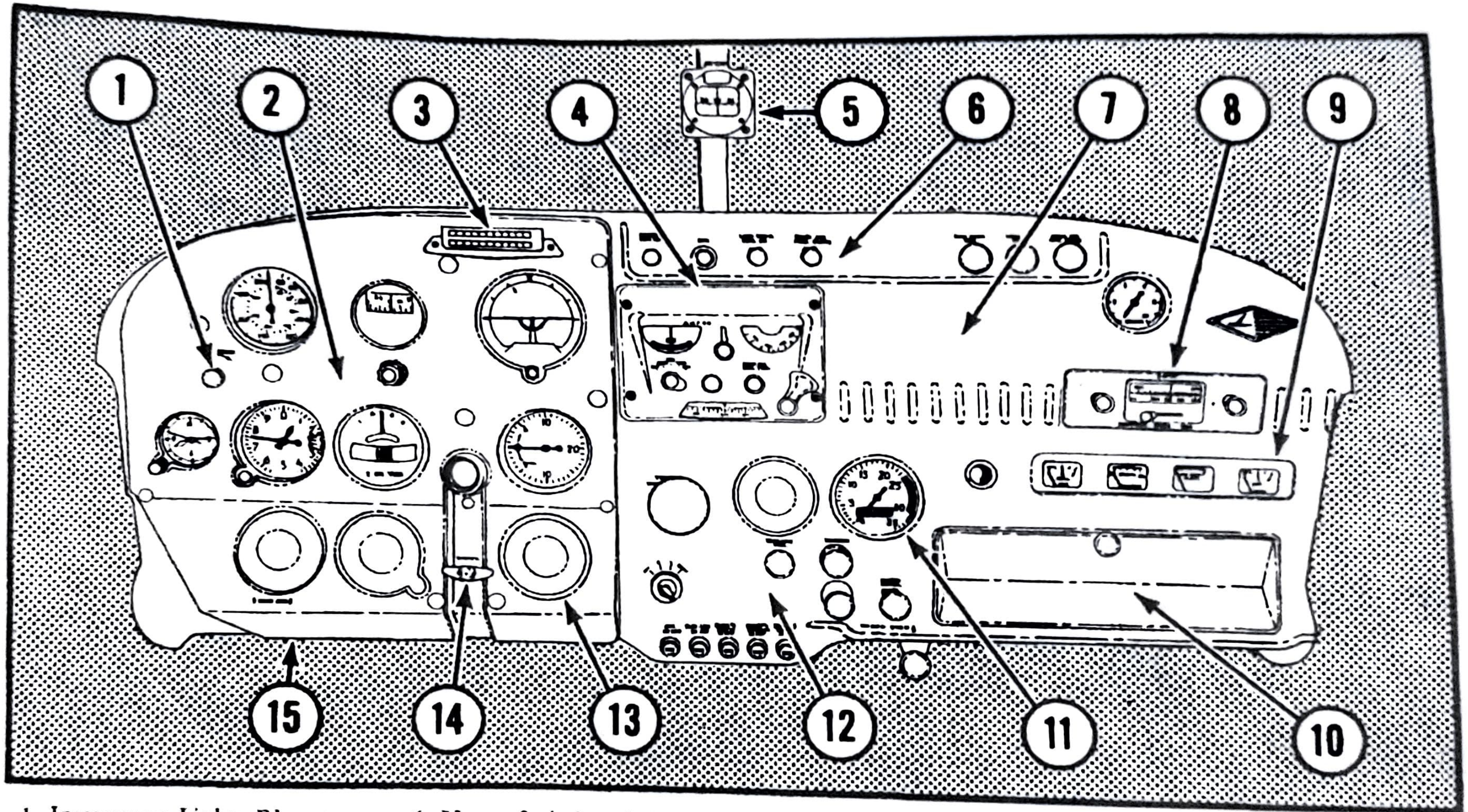

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Figure 1. Instrument Panel

SECTION I

DESCRIPTION

ONE OF THE FIRST STEPS in obtaining the utmost performance, service, and flying enjoyment from your Cessna is to familiarize yourself with your airplane's equipment, systems, and controls. This section will tell you where each item is located, how it operates and its function.

ENGINE.

The power plant used in the Cessna 175 and Skylark is a Continental Model GO-300-C geared, six-cylinder, horizontally-opposed engine developing 175 horsepower at 3200 RPM. It uses a wet-sump oil system, dual magnetos and an up-draft carburetor.

ENGINE CONTROLS.

THROTTLE.

The throttle (figure 3) is centrally located on the instrument panel and is easily identified by its large, round knob. Engine rpm can be increased by pushing the throttle in toward the instrument panel or decreased by pulling the throttle out.

NOTE

To prevent "creepage" of the throttle, a knurled friction-type lock nut is incorporated on the throttle to secure it at any desired setting. Clockwise rotation of the nut increases the friction on the throttle and counter-clockwise rotation decreases the friction.

MIXTURE CONTROL KNOB.

The mixture control knob (figure 3) is located just below the tachometer and starter handle. A locking lever is incorporated on the control to prevent unintentional use of the mixture control knob. *To lean the mixture,* it is necessary to depress the locking lever while pulling the mixture control knob out. This operation can be accomplished with one hand by using the thumb to press the locking lever in and the index and middle fingers to pull the mixture control knob out. The locking lever is effective only in the leaning operation. Forward movement of the mixture control knob is not affected by the locking lever.

The mixture control knob is normally set at "full rich" (all the way in) for starting, take-off, and climb. Maximum performance take-offs from high elevation fields may be made with the mixture leaned for maximum en-

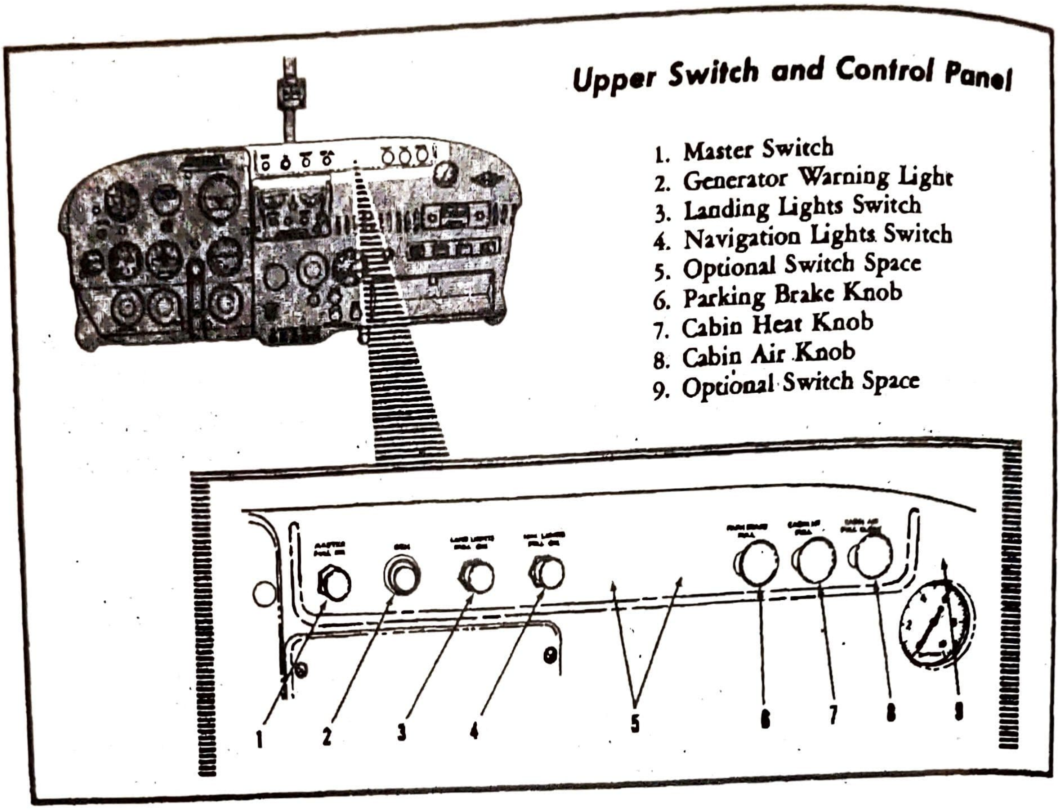


Figure 2.

gine rpm. However, a full rich mixture is preferred for better engine cooling.

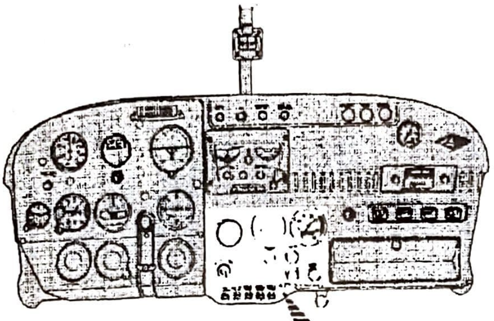
CARBURETOR AIR HEAT KNOB.

The carburetor air heat knob (figure 3) is located slightly below and to the right of the throttle. The push-pull knob operates the carburetor air intake butterfly valve, which proportions the hot and cold air entering the carburetor. Pulling the knob out provides heated air for the carburetor while pushing the knob all the way in provides only cold air for the carburetor.

Air pulled into the heater muff and subsequently into the engine does not pass through the carburetor air filter. For this reason, when taxiing on dirty, dusty, or sandy fields, carburetor heat should not be used until the engine is cleared prior to take-off. After a full stop landing under these conditions, carburetor heat should be returned to full cold in order that the air filter becomes fully effective again.

Carburetor ice can form during ground operation with the engine idling. Therefore, just after the magneto check prior to take-off, pull the carburetor air heat knob "on" momentarily to check the operation of carburetor heat, and also to eliminate any ice forming in the carburetor. After this short check, be sure to move the carburetor air heat knob to the "cold air" position. This gives maximum power for the take-off. Watch the engine 'for any indications of ice (roughness or loss of rpm) during climb and apply full carburetor heat if the engine begins to ice.

The correct way to use carburetor heat is to first use full heat to remove any ice that is forming. By trial and error, determine the minimum amount of heat required to prevent the ice from forming; each time removing any ice that is formed by applying full heat. On each subsequent trial, increase the amount of heat applied until no ice forms. Ample carburetor heat has been provided in your airplane to assure positive ice elimination. When full carburetor heat is



1. Ignition Switch
2. Throttle
3. Carburetor Heat Knob
4. Lighter
5. Strainer Drain Knob
6. Mixture Control Knob
7. Engine Primer Knob
8. Radio #3 and Navigation Lights Fuse
9. Radio #2 and Dome Light Fuse
10. Radio #1 and Instrument Light Fuse
11. Landing Light and Cigarette Lighter Fuse
12. Generator Fuse

Lower Switch and Control Panel

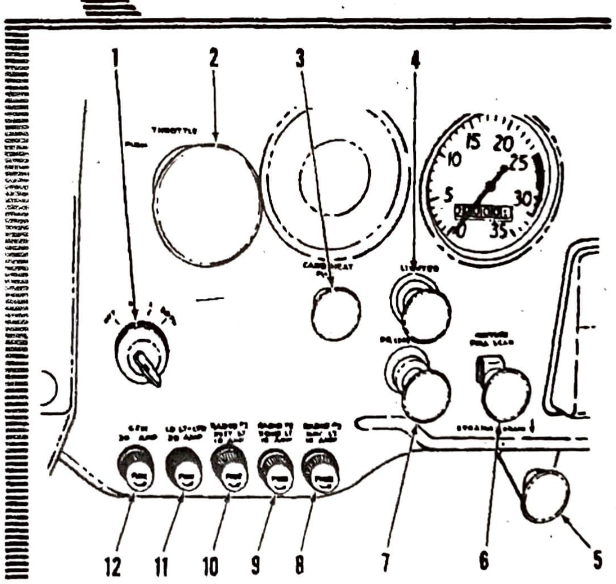


Figure 3.

applied at cruising power, rough engine operation will result. To avoid initial rough operation during letdowns, reduce power partially before applying carburetor heat, apply heat, then reduce power to the letdown setting.

When full carburetor heat is applied, the engine will lose up to 350 rpm in cruising flight. In addition to the rpm loss, the engine will run rough due to too rich a mixture. Therefore, *it may be necessary to lean the mixture whenever full carburetor heat is used in cruising flight.* Excessively-lean fuel-air mixture will cause overheating and possibly detonation. *Do not lean the mixture unless an increase in engine rpm results.*

Refer to Cold Weather Operation, page 3-7, for carburetor heat procedures in sub-zero weather.

IGNITION SWITCH.

The ignition switch (figure 3) is located just below the throttle. This switch is key operated and controls the dual magneto ignition systems. There are four switch positions designated clockwise as follows: "OFF", "R", "L", and "BOTH". The engine should normally be operated on both magnetos ("BOTH" position). The "R" and "L" positions are for checking purposes only.

ENGINE PRIMER KNOB.

The manual plunger-type engine primer delivers an initial charge of raw fuel to the cylinders, for easier starting. *For an initial start in normal air temperatures, use two strokes of the primer. Usually, a hot engine will need no priming.*

To operate the primer, proceed as follows:

(a) First, unlock the plunger by rotating the knob in either direction until the knob pops part way out.

(b) Slowly pull the plunger all the way out and then push the plunger all the way in. This action is termed "one stroke of the primer."

(c) Normal winter weather will require two to four strokes of the primer, and very cold (−20° F.) weather may require ten strokes.

(d) Normally, the engine is started immediately after the priming operation. In very cold weather, it is recommended that the engine be turned over while priming. It may be necessary to continue priming until the engine runs smoothly.

The standard primer injects fuel into the intake piping. An optional six-cylinder priming system injects fuel directly into the intake valve chamber of each cylinder, for quicker starting in extremely cold weather. The priming procedure is identical with either system.

STARTER HANDLE.

The T-shaped starter handle (figure 3) engages the starter drive and closes the starter motor switch. *To start the engine,* pull out the starter handle, hold it until the engine begins firing, then release it. If the engine stops firing during the start, *wait until both the engine and the starter motor have stopped turning, before engaging the starter again.*

OIL SYSTEM.

OIL LEVEL.

The normal capacity of the engine oil sump is 10 quarts and the minimum is 6 quarts. The oil level may be checked and oil added by opening the access door in the left cowl. The dipstick is located just below and to the left of the oil filler cap. When replacing the dipstick and filler cap, make sure the dipstick is seated firmly and the filler cap is turned clockwise as far as it will go.

To get a correct oil level reading, shut down the engine for 5 to 10 minutes before checking, to permit the oil to drain down from the engine into the sump. Always add oil if the level is below 6 quarts and fill the sump if you plan a long flight.

OIL SPECIFICATION AND GRADE.

Use only aviation grade engine oil and change it every 25 operating hours. Use the grades given in the following table:

NOTE

Run the engine before draining the oil. Hot oil will drain more readily and dirt and deposits will be in suspension.

Average Outside Temperature	*Recommended Oil Grade*
Below 40°F	SAE 20
Above 40°F	SAE 40

OIL TEMPERATURE GAGE.

A capillary type oil temperature gage (figure 1) is mounted within the row of oil and fuel instruments on the right side of the instrument panel. A green arc on the gage dial indicates the normal operating range of oil temperatures. Refer to Section IV for instrument markings.

OIL PRESSURE GAGE.

An oil pressure gage (figure 1) is mounted within the row of oil and fuel instruments on the right side of the instrument panel. The gage is calibrated in pounds per square inch. Refer to Section IV for instrument markings.

AIR INDUCTION SYSTEM.

Air is ducted to the carburetor from an air scoop located on the bottom of the engine cowl. Dirt and other foreign matter is filtered from the incoming air by a filter screen located in the air scoop. Proper cleaning and servicing of this air filter is important to increase life and maintain top efficiency of the engine. The filter should be serviced every 25 hours (during the regular oil change) or more often when operating in dusty conditions. Under extremely dusty conditions, daily maintenance of the air filter is recommended. Refer to the servicing instruc-

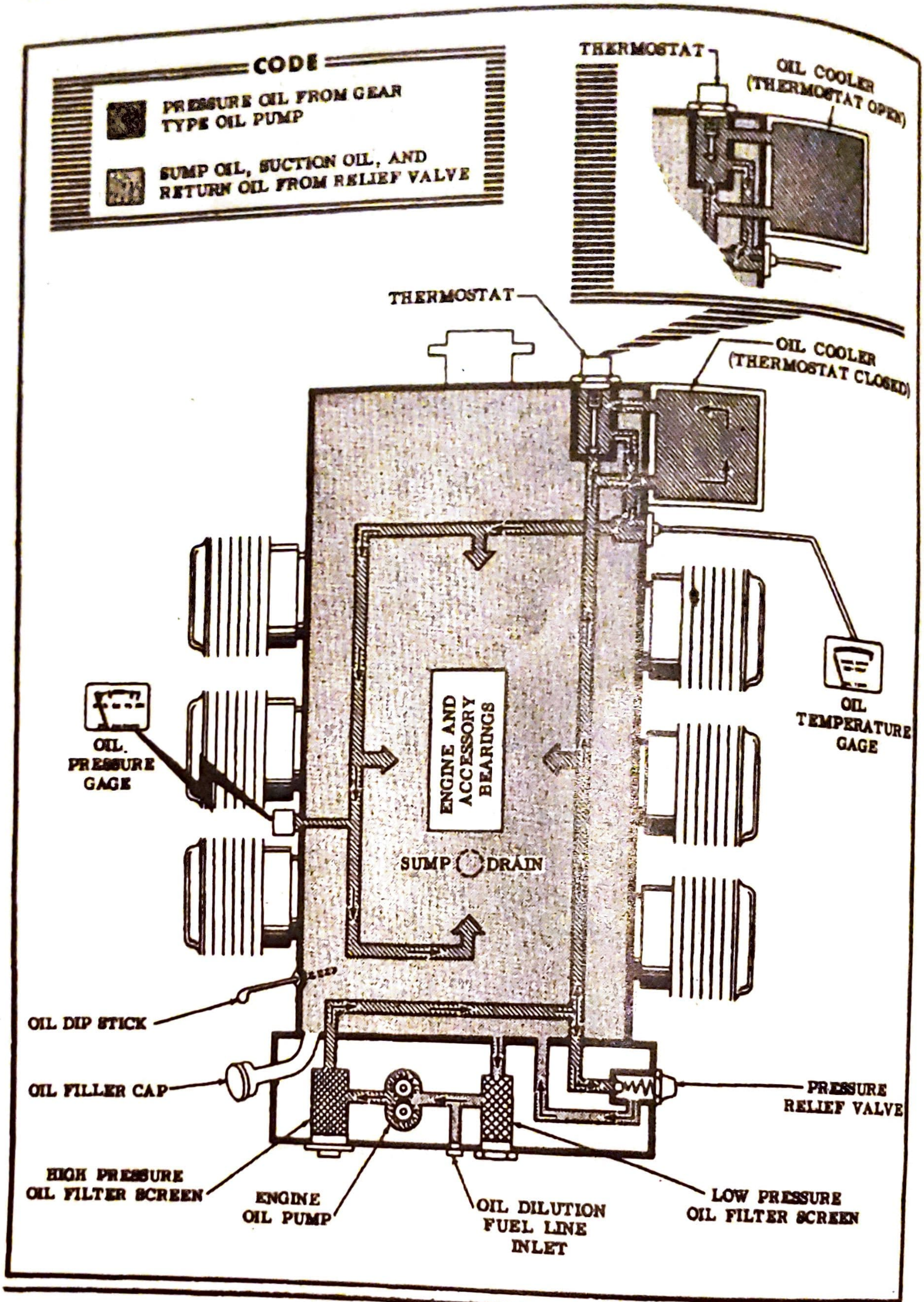


Figure 4. Oil System Schematic

tions stamped on the carburetor air filter for the procedure to be used.

CARBURETOR AIR TEMPERATURE GAGE.

The optional Richter carburetor air temperature system indicates the temperature of the air inside the carburetor, near the throttle butterfly.

The gage will reflect the fluctuations in internal carburetor temperatures which occur with changes in throttle and mixture settings and carburetor heat application. Without carburetor heat, it normally will read below outside air temperature, while the application of heat may bring it considerably above OAT.

The Richter carburetor air temperature system may be used as an aid in applying carburetor heat accurately, avoiding unnecessary power losses due to higher induction air temperatures and loss of ram air pressure. There are many combinations of temperature, humidity and power settings which can cause ice in the carburetor. These combinations vary so much that a specific range of temperatures cannot be defined as an icing range. However, with experience it is possible to determine the approximate limits of a potential icing range for a particular aircraft, when operating in possible icing conditions.

FUEL SYSTEM.

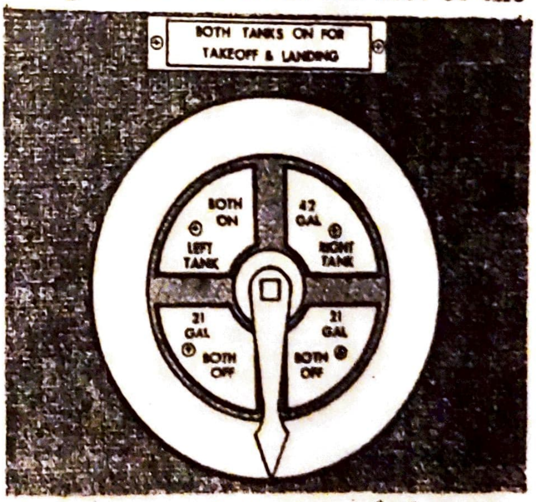
Fuel is supplied to the engine from two 26-gallon aluminum tanks, one in each wing. From the tanks, fuel flows by gravity through a selector valve and a strainer to the carburetor. Fuel usable in all flight attitudes is 21 gallons from each tank.

FUEL SPECIFICATION AND GRADE.

Aviation grade fuel should always be used except under emergency conditions. The recommended fuel is 80 octane rating. Highly leaded fuels are not recommended. Filling the fuel tanks immediately after flight will reduce the air space and minimize the moisture condensation in the fuel tanks.

FUEL SELECTOR VALVE.

A rotary type fuel selector valve is located at the aft end of the cabin floor tunnel between the front seats. The valve has four positions labeled "BOTH OFF", "LEFT TANK", "RIGHT TANK", and "BOTH ON". The "BOTH OFF" position seals both wing tanks off from the rest of the



fuel system and allows no fuel to pass beyond the selector valve. The "LEFT TANK" position allows fuel to flow from the left wing tank to the engine.

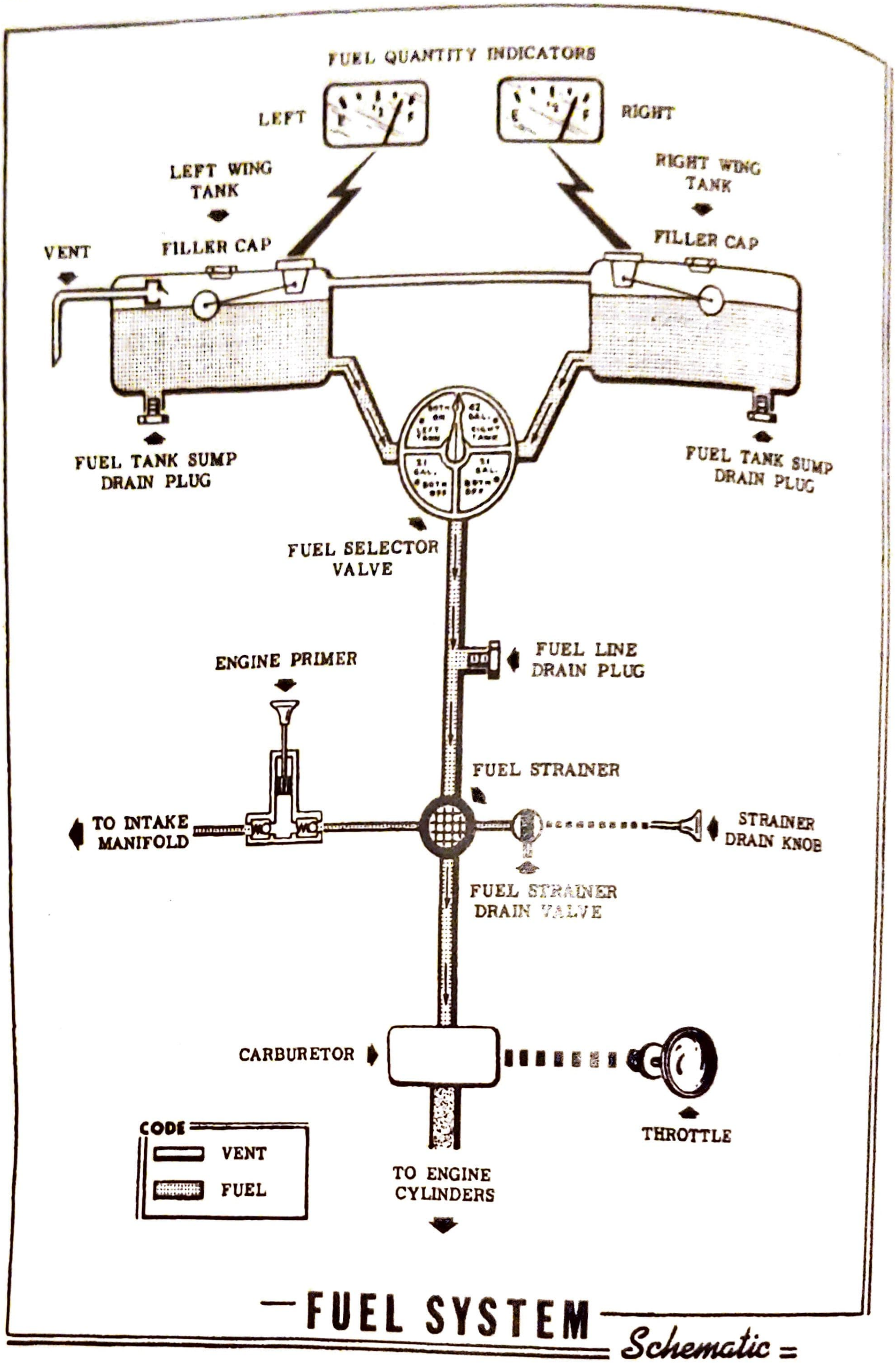

FUEL QUANTITY INDICATORS
LEFT
RIGHT
LEFT WING TANK
RIGHT WING TANK
VENT
FILLER CAP
FILLER CAP
FUEL TANK SUMP DRAIN PLUG
FUEL TANK SUMP DRAIN PLUG
FUEL SELECTOR VALVE
FUEL LINE DRAIN PLUG
ENGINE PRIMER
FUEL STRAINER
TO INTAKE MANIFOLD
STRAINER DRAIN KNOB
FUEL STRAINER DRAIN VALVE
CARBURETOR
THROTTLE
CODE
VENT
FUEL
TO ENGINE CYLINDERS
FUEL SYSTEM Schematic

Figure 5.

The "RIGHT TANK" position permits fuel to flow from the right wing tank to the engine. The "BOTH ON" position provides fuel flow from both tanks simultaneously to provide maximum safety.

NOTE

The fuel selector valve handle indicates the setting of the valve by its position above the dial.

FUEL STRAINER DRAIN KNOB.

The fuel strainer drain knob (figure 3) provides a quick, convenient method of draining water and sediment which may have collected in the fuel strainer.

Two ounces of fuel (about 3 or 4 seconds of drain knob operation) should be drained from the strainer before the first flight each day or after each refueling. The spring-loaded drain valve in the strainer opens when the strainer drain knob is pulled out all the way. When the knob is released, the valve closes.

FUEL TANK SUMP DRAIN PLUGS.

A fuel tank sump drain plug is located on the underside of each wing in line with the rear edge of the cabin door and out a few inches from the fuselage. These plugs are used to drain any sediment or water that may collect in the fuel tanks. Draining the tank sumps is normally required only at each 100 hour inspection period.

FUEL LINE DRAIN PLUG.

A fuel line drain plug is located on the underside of the airplane directly below the fuel tank selector valve. At each 100 hour inspection period, this plug should be removed to drain any sediment or water that might have accumulated in the fuel line.

FUEL QUANTITY INDICATORS.

Electrically-operated fuel quantity indicators (figure 1) are mounted within the row of fuel and oil instruments on the right side of the instrument panel.

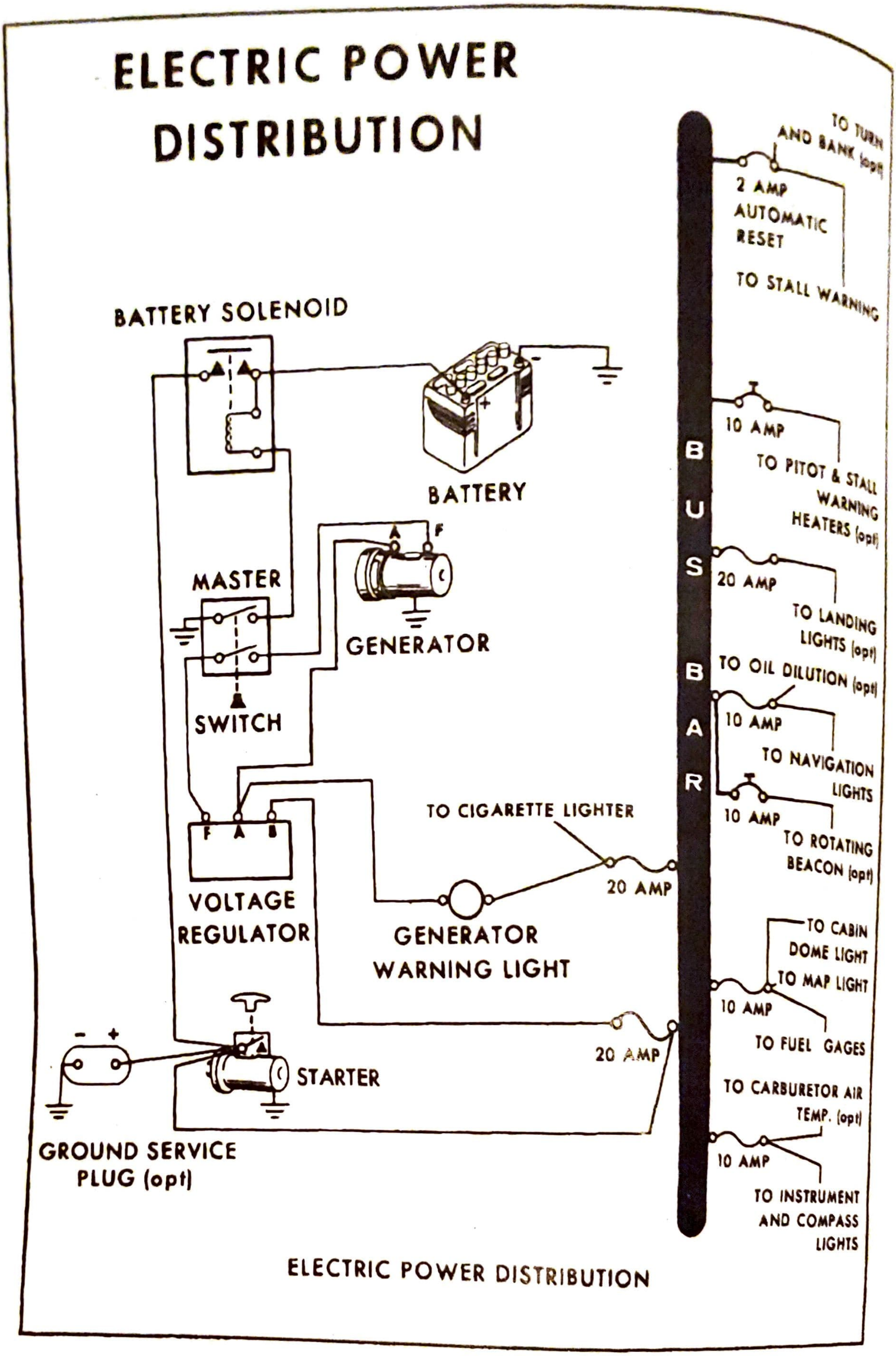
NOTE

After the master switch is turned on, a warming period is required before the indicator needles will arrive at the actual reading. Also, the needles will require several seconds to readjust themselves to the actual reading after any abrupt change in flight attitude of the airplane.

The indicators, identified "LEFT" and "RIGHT" indicate the amount of fuel remaining in their respective tanks. A red arc extending from the empty to ¼ full range on each indicator dial warns the pilot that the respective tank is ¼ full or less. *Do not take off if the pointer is in the red arc.*

ELECTRICAL SYSTEM.

Electrical energy is supplied by a 12-volt, direct-current system powered by an engine-driven generator. A 12-volt storage battery serves as a stand-by power source, supplying current to the system when the generator is inoperative, or when the generator



ELECTRIC POWER DISTRIBUTION

Figure 6.

voltage is insufficient to close the reverse-current relay.

MASTER SWITCH.

The master switch (figure 2) is the extreme left switch on the upper switch and control panel. Switch positions are "ON" (out position) and "OFF" (in position). When the master switch is turned "ON", a solenoid switch is energized and the electrical power of the battery is admitted into the electrical system. In event of a short or malfunctioning of the airplane electrical system, the master switch may be turned off and the engine will continue to run on the magneto ignition system.

FUSES.

Fuses are provided to protect the majority of electrical circuits in your airplane. These fuses are located on the extreme lower portion of the lower switch and control panel. The fuse circuit and fuse capacity are indicated above the respective fuse retainers. Fuses may be removed by pressing the fuse retainers inward and rotating them counterclockwise until they pop part way out. The faulty fuse may be lifted out and replaced. Spare fuses are located in a clip on the inside of the glove compartment door. The stall warning indicator circuit, optional turn and bank indicator circuit, and optional flare circuit are protected by an automatically resetting circuit breaker which provides intermittent emergency operation of these devices in case of a faulty circuit.

GENERATOR WARNING LIGHT.

A generator warning light (figure 2) is located just to the right of the master switch and is labeled "GEN". This red warning light is an indication of generator output. The light will remain off at all times when the generator is functioning properly. The light will not show drainage on the battery. It will illuminate when the battery or external power is turned on prior to starting the engine or when there is insufficient engine RPM to produce generator current.

FLIGHT CONTROL SYSTEM.

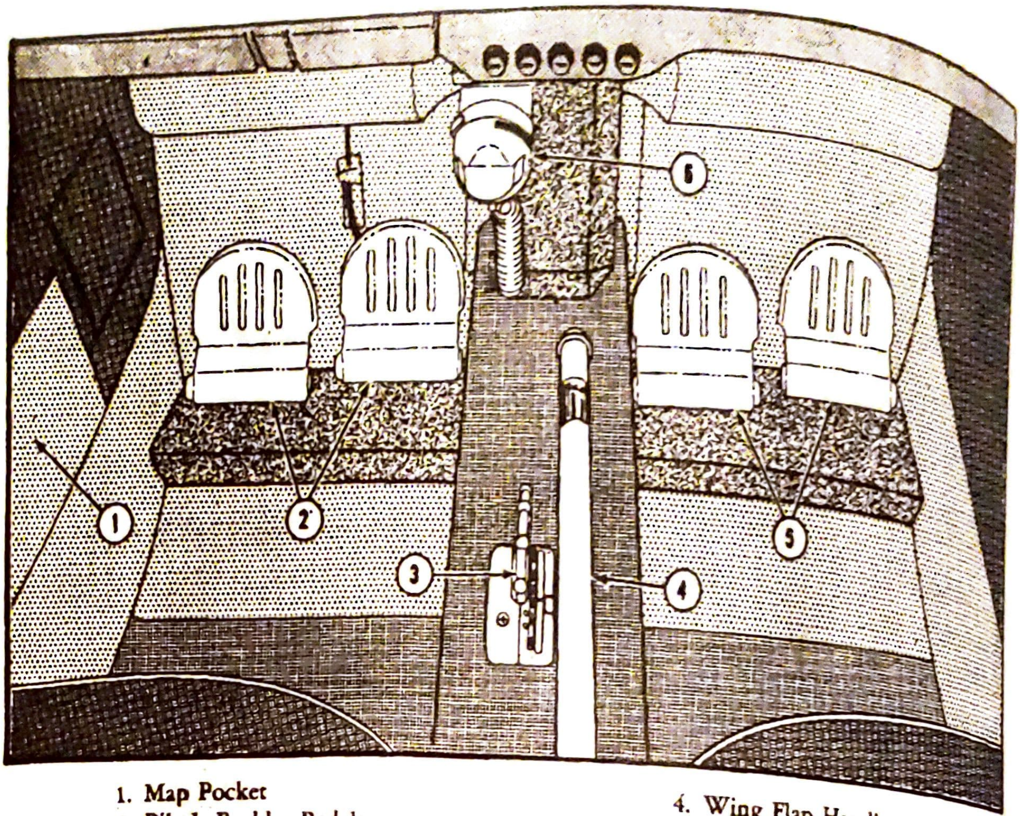
Conventional wheel and rudder pedal controls are provided to operate the primary flight control surfaces (ailerons, rudder, and elevators). The elevator trim tab, located on the right elevator, is mechanically operated from the front seats. The rudder trim tab is adjustable on the ground only.

CONTROLS LOCK.

A controls lock, standard equipment on the 175, locks the elevators and ailerons in neutral to protect them from buffeting in high winds or prop wash. The lock has a large red metal flag which covers the ignition switch, to remind you that the controls must be unlocked before starting the engine.

NOTE

The controls lock is designed for use in moderately-gusty winds up to 30 or 40 MPH. When storm conditions are forecast, additional precautions should be taken.



1. Map Pocket
2. Pilot's Rudder Pedals
3. Elevator Tab Control Wheel
4. Wing Flap Handle
5. Copilot's Rudder Pedals (Opt. Equip.)
6. Microphone

Figure 7. Lower Forward Section of Cabin

To install the controls lock, pull the control wheel back until the hole in the control wheel shaft is aligned with the hole in the collar assembly mounted on the instrument panel. Position the controls lock on the right side of the control wheel shaft adjacent to the instrument panel so that the lettering on the red flag is legible. Insert the short shaft of the controls lock down through the holes in the collar assembly and control wheel shaft. Check that the controls lock is fully inserted.

To remove the controls lock, pull it up and out of the collar assembly and control wheel shaft.

When not in use, the controls lock may be stored in the glove compartment.

WING FLAP HANDLE.

The wing flaps are controlled by a wing-flap handle (figure 7) mounted between the two front seats. The handle is operated by depressing the thumb button and moving the handle to the desired flap setting. By releasing the thumb button, the handle can be locked to provide 0, 10, 20, 30, and 40-degree flap positions.

The flaps may be lowered or raised during normal flying whenever the airspeed is less than 100 mph. The flaps supply added lift and considerable drag; the resulting action steepens the glide angle of the airplane enabling the pilot to bring the airplane in over an obstruction and land shorter than could be done without flaps. The use of flaps is not recommended for cross-wind take-offs.

For unusually short field take-offs, apply 20° flaps (second notch) prior to take-off. An alternate procedure of applying 20° flaps just before the airplane is ready to leave the ground may be used in lieu of the above method of leaving the flaps in the 20° position throughout the entire ground run. For further discussion of the use of wing flaps for take-off, see page 3-4.

Wing Flap Settings

For Normal Take-off. . . . . . . Up (0°)
For Short Take-off. . . . 1st notch (10°)
For Shortest Take-off. 2nd notch (20°)
For Landing —
Select as desired. . . . . Up (0°)
1st notch (10°)
2nd notch (20°)
3rd notch (30°)
4th notch (40°)

TACTAIR AUTOMATIC FLIGHT CONTROLS.

The optional Tactair automatic flight control system is a pneumatic system consisting of bellows attached to the manual control surface cables, specially-modified gyro instruments and a control head mounted on the instrument panel. The entire system is powered by the engine-driven vacuum pump.

The control surface servo bellows respond to pneumatic signals from the gyro instruments and the control head, to maintain the position set on the control head by the pilot. The servos may be overridden at any time, by operating the aileron and elevator controls. The pressure required to overpower the servos is not excessive and no damage to the system will result, even if the servos are overpowered for some time. When the controls are released, the autopilot will return the airplane to the position set on the control head.

The pickup units in the gyro instruments automatically change both the amount and the rate of change in their signals in accordance with the amount and rate of deviation of the airplane from the selected position. Thus, a large and rapid deviation will produce a large and rapid signal. The servo's response likewise will be large and rapid. However, as the airplane responds, the signals will diminish at a rate exactly proportional to the rate at which the airplane is returning to normal. The servos, in turn, bring the control surfaces back to neutral in the same pattern. The autopilot thus controls the airplane just as the human pilot would. Corrections are smooth and precise and at no time do they produce excessive flight loads on the airplane.

The Tactair system is available in three configurations. The T-1 Roll Stabilizer consists of the aileron servos, attitude gyro and a control head. As its name implies, its primary purpose

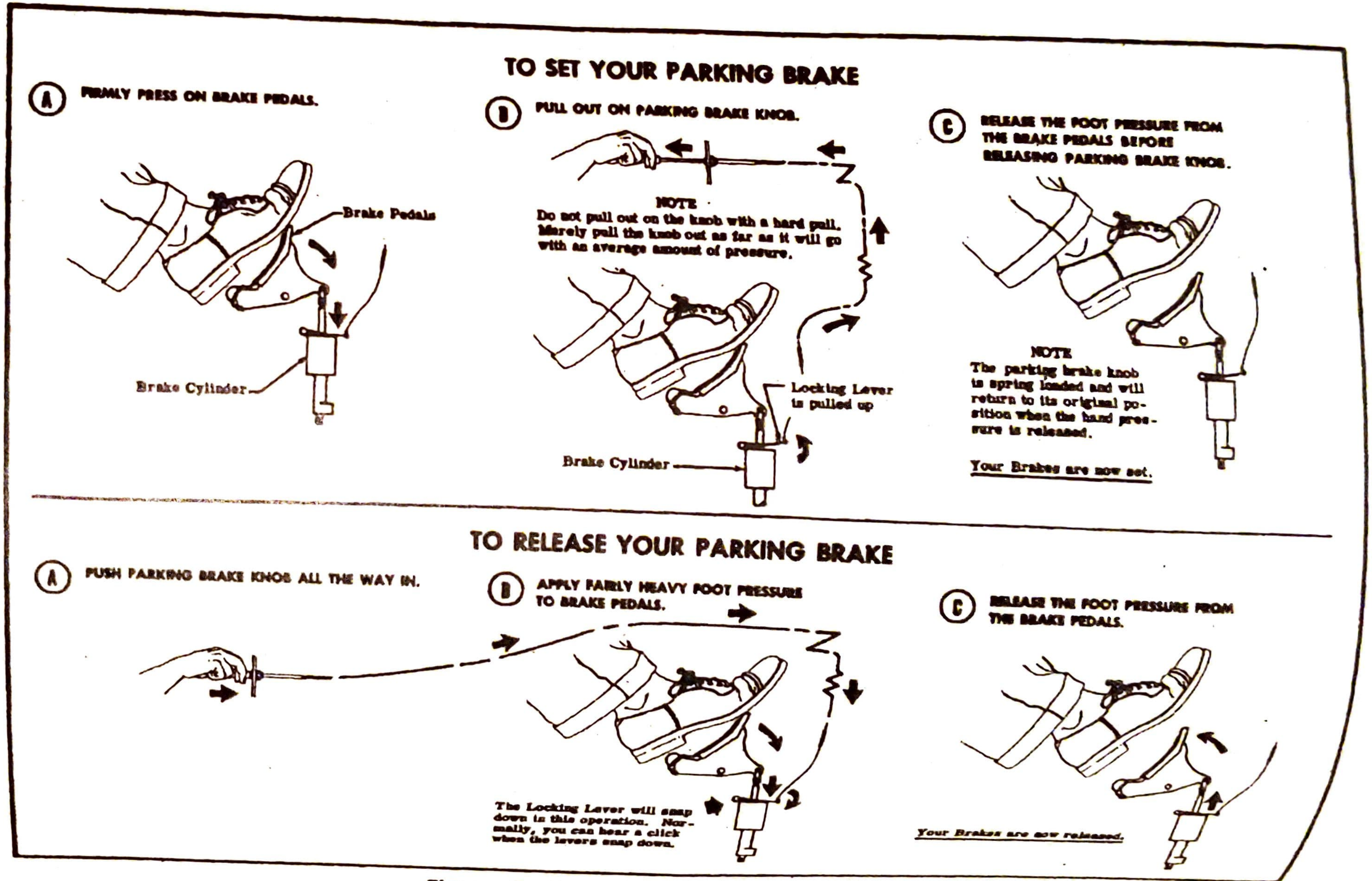


Figure 8. Parking Brake Operation

is to maintain lateral stability. The T-2 Heading Lock system uses a modified directional gyro coupled to the T-1 roll stabilizer system. In the T-2 system, both the attitude gyro and the directional gyro signal corrections to the aileron servos to provide both roll and directional stability. The T-3 autopilot system adds an elevator servo coupled to the attitude gyro. By adding elevator control to the roll stabilizer and heading lock, the T-3 controls pitch, roll and direction.

The directional gyro used in the T-2 and T-3 systems has an additional compass card placed above the regular card and linked to the heading lock pickups in the gyro. To set a course, rotate the course selector knob to the right of the compass card window until the desired heading on the upper card falls under the lubber line.

Detailed operating instructions are found in Sections II and III.

LANDING GEAR.

MAIN LANDING GEAR.

Your airplane is equipped with Cessna's "Land-O-Matic" landing gear. It consists of a tapered, spring steel leaf supporting each main wheel.

NOSE GEAR.

A steerable nose gear, incorporating an air and oil shock strut, is mounted on the firewall. Nose wheel steering is accomplished through normal operation of the rudder pedals. The nose wheel is steerable through an arc of approximately 8° each side of neutral, after which it becomes free-swiveling up to a maximum deflection of 30° right or left of center. Thru the use of the brakes, the airplane can be pivoted about the outer wing strut fitting. The nose wheel is automatically located in the centered position while the aircraft is in the air. Movement of the rudder pedals will not affect the nose wheel while the airplane is in flight. Thus, the pilot has the assurance that the nose wheel will be straight at the initial landing touchdown.

SPEED FAIRINGS (OPTIONAL EQUIPMENT).

Speed fairings are available as optional equipment for your airplane. The design purpose of speed fairings is to increase the speed of the aircraft. To accomplish this in the most efficient manner, and add to the beauty of the aircraft, it was necessary to reduce clearance in the wheel opening to a minimum to eliminate drag. An accumulation of mud, snow or ice in this opening would have a "braking effect" on the wheel. If these elements can not be avoided, make an inspection of the wheel fairings before each flight and remove any accumulations which may be forming.

BRAKE SYSTEM.

The hydraulic brakes on the main wheels are conventionally operated by applying toe pressure to either the pilot's or co-pilot's rudder pedals. The rotation of the pedals actuates the brake cylinders resulting in a braking action on the main landing gear wheels. The brakes may also be set by operating the parking brake knob. (Refer to figure 8 for parking brake operation).

SKIPLANE GEAR.

For operation from snow or ice, a skiplane configuration of the 175 is available. The skiplane uses special, heavy-duty axles on the main gear, with Federal Model A-3500A skis and a Federal Model NA-1200A ski on the nose gear. The skis and the conventional wheels and tires may be interchanged as necessary.

INSTRUMENTS.

All instruments are mounted on the instrument panel except the optional free air temperature gage and the magnetic compass. The free air temperature gage is located in the right cabin ventilator and the compass on the windshield center strip. For correct free air temperature readings, the ventilator must be open slightly.

TURN-AND-BANK INDICATOR.

The optional turn-and-bank indicator is electrically-operated. It has no separate control switch. Turned on by the master switch, it operates until the master switch is turned off.

PITOT-STATIC SYSTEM INDICATORS.

The airspeed indicator (figure 1), altimeter (figure 1), and optional rate-of-climb indicator (figure 1) are operated by the pitot-static system. This system measures the difference between the impact air pressure entering the pitot tube, mounted on the leading edge of the left wing, and static air pressure obtained from a static port mounted on the left forward side of the fuselage. To keep the pitot tube opening clean, a cover may be placed over the pitot tube whenever the plane is idle on the ground. *The static port should be kept free of polish, wax, or dirt for proper airspeed indicator operation.*

STALL WARNING INDICATOR.

The stall warning indicator is an electrically-operated horn which gives

warning whenever a stall is approached, regardless of speed, altitude, attitude, weight or other factors which change the stalling speed. The stall warning transmitter is adjusted to give an audible warning approximately 5 mph above the normal straight-ahead stalling speed. Other attitudes and speeds provide a wider margin.

Under safe flight conditions, you should hear the warning horn only briefly on landing; and due to ground effect, usually there will be no signal if the landing is properly executed.

The unit will signal on the ground only occasionally when you are taxiing in high surface winds. Thus, it requires no silencing switch which might be left off inadvertently.

PITOT AND STALL WARNING HEAT.

The optional pitot heat circuit breaker switch operates electric heaters in the pitot mast and stall warning transmitter, to prevent icing. The heaters should be turned on before ice is encountered.

CLOCK (OPTIONAL EQUIPMENT).

An eight-day, stem wind, aircraft clock (figure 1) may be installed as optional equipment on the extreme left side of the instrument panel just to the left of the altimeter.

HEATING AND VENTILATING SYSTEM.

Fresh air for heating and ventilating the cabin is supplied by two sources: a cold air intake in the rear engine baffle and a manifold-type heater. Both sources are connected to a mixer box, from which the air is led to outlets above the rudder pedals and at each front doorpost, and to the windshield defroster outlet.

Two push-pull controls on the instrument panel control the system, including the defroster, which has no separate control. The knob marked "CABIN AIR" operates a shutoff valve in the mixer box to regulate the volume of air, while the knob marked "CABIN HEAT" operates a mixer valve which proportions the hot and cold air entering the duct.

For cabin ventilation, push the cabin air knob in. To raise the air temperature, pull the cabin heat knob out. To shut off all airflow, push the heat knob in and pull the air knob out.

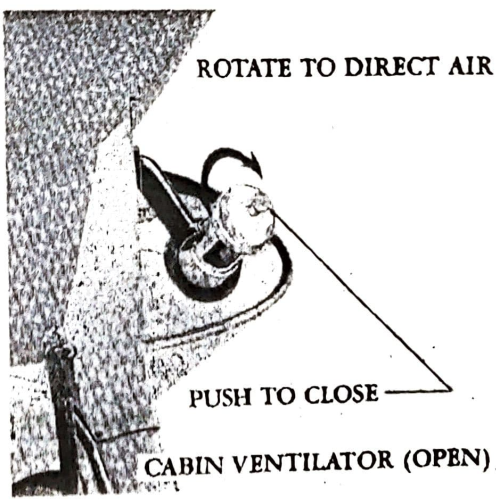
NOTE

Always push the heat knob in before pulling the air knob out, to avoid overheating the heater ducts.

CABIN VENTILATORS.

Ventilation for the cabin area in addition to that obtained through the heater ducts, is provided by manually-adjusted cabin ventilators. Two ventilators are installed: one on the left side of the cabin in the upper corner of the windshield, and the other in the same position on the right.

To provide a flow of air, pull the ventilator tube out. The amount of air entering the cabin can be regu-



CABIN VENTILATOR (OPEN)

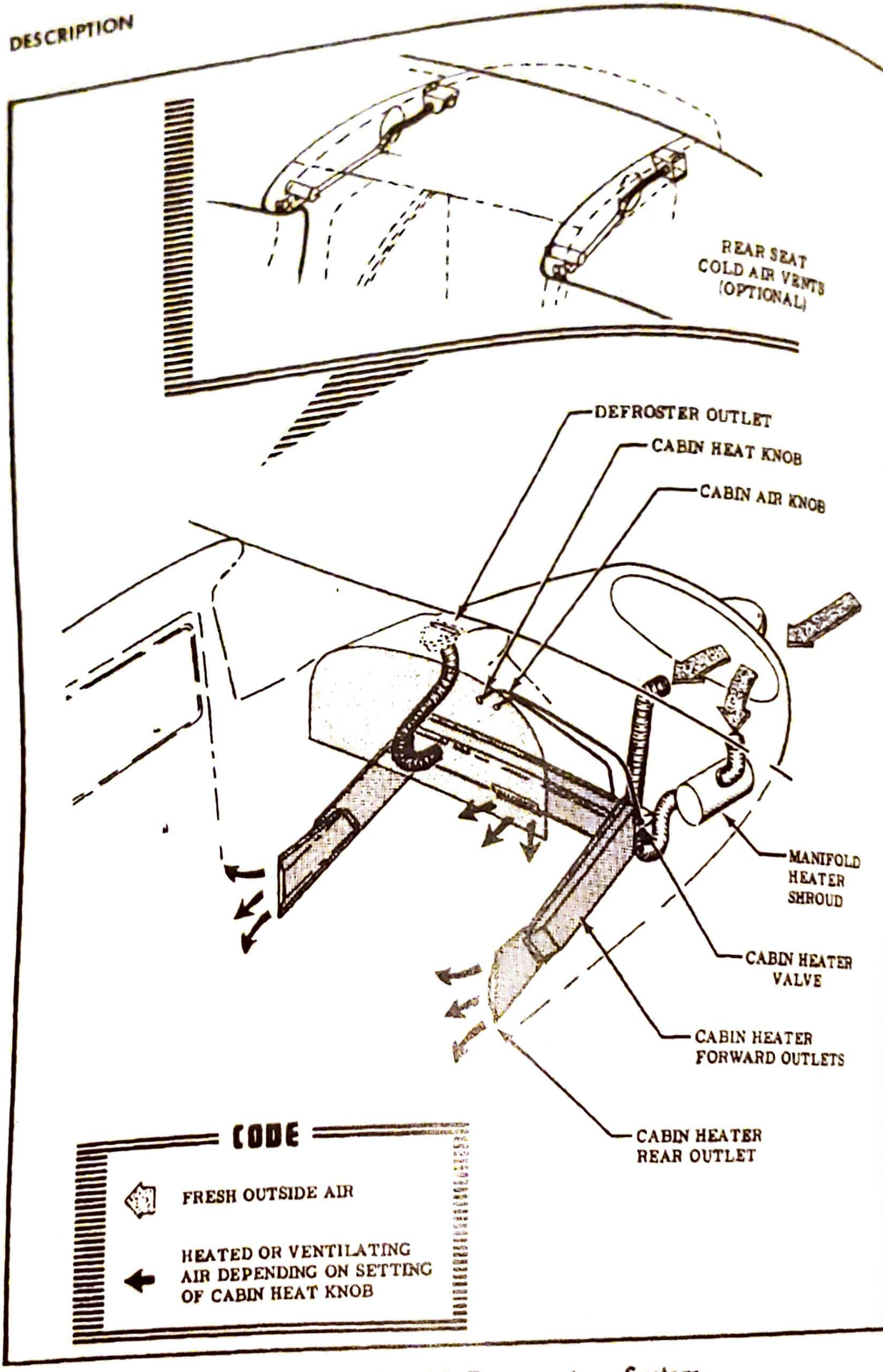


Figure 9. Cabin Air Temperature System

lated by varying the distance that the ventilator tube is extended.

To change the direction of airflow, rotate the ventilator tube to the position desired.

REAR SEAT VENTILATORS.

Additional cold air for the rear seat passengers is provided by optional ventilation outlets in the cabin ceiling, above the rear doorposts. The outlets are ball-and-socket type and may be turned to direct the flow of air as desired. The volume of air from each outlet is regulated by turning a knurled ring on the rim of the outlet.

LIGHTING EQUIPMENT.

NAVIGATION LIGHTS.

Conventional navigation lights are controlled by a push-pull switch (figure 2). With the optional navigation lights flasher, a three-position push-pull switch is used. The middle detent on the switch is the steady position and all the way out is the flashing position. When the optional rotating beacon is on, the flasher should not be used since there is a possibility that the double flash will be confusing.

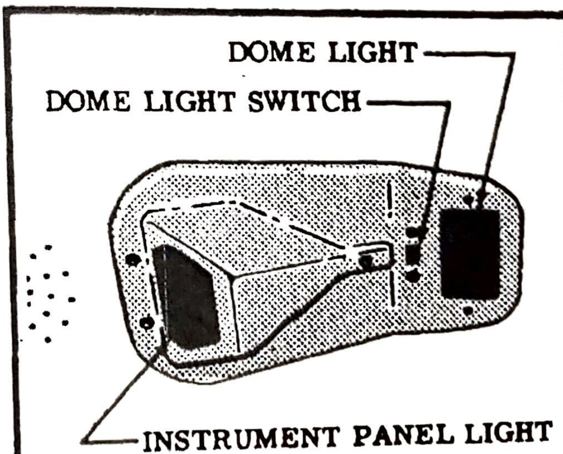
LANDING LIGHTS (OPTIONAL EQUIPMENT).

The landing lights consist of two lamps mounted side-by-side in the leading edge of the left wing. One of the lamps is adjusted to give proper illumination of the runway during landing and take-off while the other lamp is set to provide illumination of the ground for taxiing purposes. The landing light switch (figure 2), labeled "LAND LIGHTS, PULL ON", is mounted on the upper right hand portion of the instrument panel. *To turn the taxi light on,* pull the switch out to the first stop. *To turn both the landing light and the taxi light on,* pull the switch out to the second stop. *To turn the lights off,* push the switch all the way in.

INSTRUMENT LIGHTS.

A red instrument light is mounted on the cabin ceiling to illuminate the instrument panel during night operation. The light, in conjunction with


LANDING LIGHTS

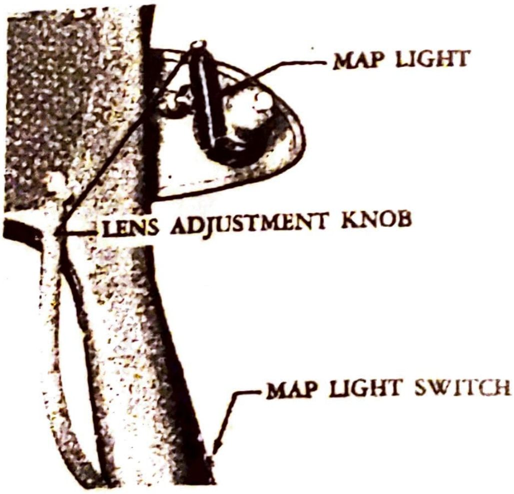


the compass light, is controlled by a rheostat switch (figure 1), labeled "INSTR LIGHTS", located slightly below and to the left of the airspeed indicator. *To turn the instrument and compass lights on,* rotate the instrument light rheostat switch clockwise until the desired illumination is obtained. *To turn the lights off,* turn the switch counter-clockwise as far as it will go.

Optional radio dial lights are controlled by the same rheostat switch which controls operation of the instrument and compass lights.

MAP LIGHT.

An optional map light is mounted near the left cabin ventilator and is controlled by a slide switch mounted on the left door post. The light is fully adjustable to shine in any direction, and a lens adjustment knob mounted on the light makes it possible to change the beam from a spot to flood illumination.



DOME LIGHT.

A dome light is mounted in the cabin ceiling and is controlled by a slide switch mounted just forward of the dome light.

ROTATING BEACON (OPTIONAL EQUIPMENT).

A rotating beacon may be installed as optional equipment on the tip of the vertical fin. The light serves as an anti-collision light, and rotates through 360° at all times when the rotating beacon switch is turned on.

NOTE

The rotating beacon should be turned off during flight through clouds to prevent a distracting glare.

The rotating beacon switch is mounted within the row of switches on the upper switch and control panel (figure 2). The switch incorporates a manually-set circuit breaker. Pushing the switch in closes the circuit breaker and turns the rotating beacon on. To turn the light off, pull the switch button out. A short in the circuit will also open the circuit breaker and force the switch button out.

SEATS.

FRONT SEATS.

The front seats are individually mounted on tracks and are adjustable fore and aft. The seat adjustment handle is located within easy reach on the left front side of each front seat. *To adjust the seat,* simply pull up on the handle and slide the seat to the most comfortable position.

NOTE

Test the front seats for secure latching after adjusting them to the desired position.

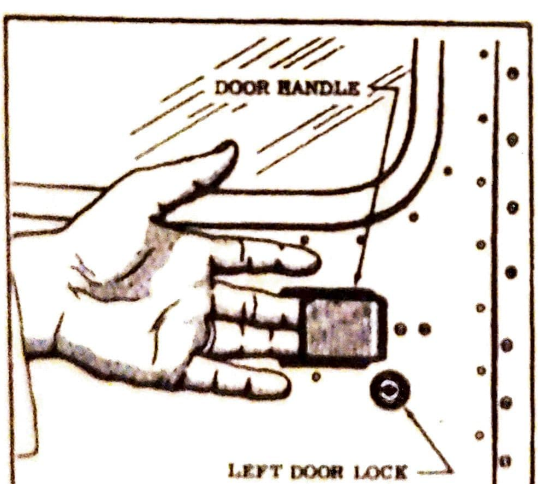
REAR SEAT.

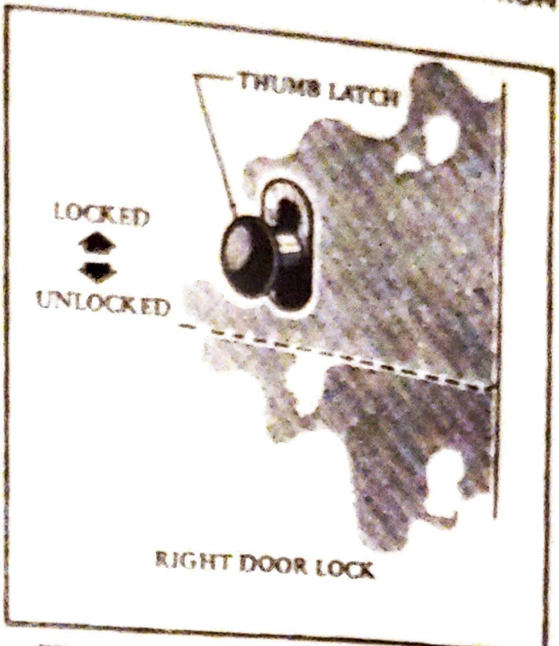
The rear seat has provisions to accommodate two people. The back of the seat is hinged at the bottom to permit seat adjustment and easy access to the baggage compartment. A seat adjustment handle is located behind and at the top of the rear seat back.

MISCELLANEOUS EQUIPMENT.

CABIN DOORS.

Two cabin doors are provided on your airplane. Each door incorporates a flush type door handle on the outside and a conventional type handle on the inside. *To open the door from the outside,* pull out on the forward edge of the flush type handle. *To open the door from the inside,* rotate the inside door handle down.





The right cabin door can be locked from the inside only. *To lock the door,* push up on the thumb latch located on the aft part of the door just below the window. *To unlock,* push down on the thumb latch.

The left door can be locked from the outside only with a key operated lock. The same key that is used for the ignition is also used to lock the door.

CABIN WINDOWS.

All cabin windows except the left door window are fixed and permanently sealed. The left door window is hinged at the top and opens outward for additional ventilation.

To open the window, press the release button on the latch and rotate the handle upward. The window will open without pressure, and be held out by spring-loaded limit arms.

NOTE

In flight, the window should be opened cautiously, since air pressure will push it out with considerable force which may damage the limit arms. Grasp the handle firmly and ease the window out to its open limit.

BAGGAGE COMPARTMENT.

The baggage compartment, back of the rear seat, may be loaded and unloaded through a door on the left side of the fuselage. The door is fitted with a flush-type handle and a cylinder lock.

The baggage compartment may be reached from inside the cabin by pulling gently forward and down on the rear seat adjustment handle.

UTILITY SHELF.

A utility shelf is located just above the baggage compartment. This shelf will prove very handy for storing hats, brief cases, and small articles.

ASSIST STRAPS.

Two assist straps are mounted on the front door posts and are used as an aid in entering and leaving the airplane.

COAT HANGER HOOK.

For your convenience, a coat hanger hook has been installed in the cabin ceiling above the back of the rear seat. Your coats can be hung, full-length and wrinkle-free, between the back of the rear seat and the baggage shelf without interfering with the comfort of rear-seat passengers.

ASH RECEIVERS.

Four ash receivers are provided in your airplane. Two ash receivers are located in the cabin walls adjacent to the windshield and are used by the occupants of the front seats. The remaining ash receivers are mounted on the cabin walls just aft of the rear door post bulkheads and are accessible to the rear seat passengers.

LOADING YOUR CESSNA.

There are several different ways to "load" your Cessna, all of which are satisfactory. However, from experience, we have found the following sequence of steps to be most satisfactory under average loading conditions:

First, load your baggage in the baggage compartment.

Next, load the front seats.

Finally, load the rear seat.

SECTION II

OPERATING CHECK LIST

AFTER FAMILIARIZING YOURSELF with the equipment of your Cessna 175, your primary concern will normally be the operation of your airplane. This section lists, in Pilot's Check List form, the steps necessary to operate your Cessna efficiently and safely. It is not a check list in its true form as it is considerably longer, but it does cover briefly all of the points that you would want to or should know concerning the operation of your Cessna 175.

The flight and operational characteristics of the Model 175 Cessna are normal in all respects. There are no "unconventional" characteristics or operations that need to be mastered. All controls respond in the normal way within the entire range of operation of the airplane. All airspeeds mentioned in sections II and III are indicated airspeeds. Corresponding true indicated airspeeds may be obtained from the airspeed correction table in section VI.

BEFORE ENTERING THE AIRPLANE.

(1) Perform an exterior inspection of the airplane (see figure 10). On Skiplane, make sure skis are not frozen down. When breaking loose frozen skis, avoid excessive side loads on the nose gear.

BEFORE STARTING THE ENGINE.

(1) Operate controls and make a visual check for proper operation.
(2) Make sure windshield is clean for maximum visibility.
(3) Adjust seat for comfort and distance to rudder pedals.

NOTE

Test the front seats for secure latching after adjusting them to the desired position.

(4) Check brakes and set parking brake.
(5) Fasten and check safety belt.

STARTING THE ENGINE.

(1) Set carburetor heat to "cold" (full in).
(2) Set mixture control knob to "full rich" (full in).

throttle static RPM should be between 2545 and 2645 RPM.
(8) Check autopilot disengaged.

TAKE-OFF.

NORMAL TAKE-OFF.

(1) Flaps 0° (retracted).
(2) Set carburetor heat to "cold" (full in).
(3) Advance throttle slowly to full throttle.
(4) Avoid dragging brakes by keeping heels on floor.
(5) Apply slight back pressure on the elevator control to raise nosewheel when take-off speed is reached.

CAUTION

Do not raise the nose of the airplane excessively high as this will only lengthen the take-off run.

(6) Climb at 84 MPH.

MINIMUM GROUND RUN TAKE-OFF.

(1) Wing flaps 20° (second notch).
(2) Apply full throttle while holding brakes.
(3) Release brakes.
(4) Take-off slightly tail low.

OBSTACLE CLEARANCE TAKE-OFF.

(1) Wing flaps 20° (second notch).
(2) Apply full throttle while holding brakes.
(3) Release brakes.
(4) Take-off slightly tail low.
(5) Level off momentarily to accelerate to best angle of climb speed (60 MPH).

SOFT OR ROUGH FIELD TAKE-OFF WITH NO OBSTACLE AHEAD.

(1) Wing flaps 20° (second notch).
(2) Apply full throttle and raise nosewheel clear of ground with elevator control back pressure.
(3) Take-off in a tail low attitude.
(4) Level off momentarily to accelerate to a safe airspeed.
(5) Retract flaps slowly as soon as a reasonable altitude is obtained. (See "Take-Off" paragraph on page 3-4).

TAKE-OFF IN STRONG CROSSWIND.

(1) Flaps 0° (retracted).
(2) Apply full throttle and use sufficient aileron into the wind to maintain wings level.
(3) Hold nosewheel on ground 5-10 MPH above normal take-off speed.
(4) Take-off abruptly to prevent airplane from settling back to runway while drifting.

CLIMB.

(1) If no obstacle is ahead climb out with flaps up at 80-90 MPH with full throttle. If maximum rate of climb is desired use full throttle and 84 MPH, at sea level (see figure 25). Reduce climb speed about ½ MPH for every 2000 feet of altitude above sea level.
(2) To climb over an obstacle after take-off use the best angle of climb speed of 61 MPH, with full throttle and flaps up.
(3) Mixture should be "full rich" up to 5000 feet, and then leaned for smooth engine operation.

CRUISING.

(1) Recommended cruising rpm — 2400-3200 (see page 4-2).
(2) Trim airplane by adjusting elevator tab.
(3) Oil pressure — 30-45 lbs./sq. in.
(4) Oil temperature — within green arc range.
(5) Lean mixture to maximum rpm.
(6) Lean mixture as required to obtain smooth engine operation when using carburetor heat in cruise.

LET-DOWN.

(1) Set mixture control knob to "full rich" (full in).
(2) Reduce power to obtain desired let down rate at cruising speed.
(3) Apply enough carburetor heat to prevent icing if icing conditions exist.

BEFORE LANDING.

(1) Set fuel selector to "both tanks".
(2) Recheck mixture control knob to "full rich" (full in).
(3) Apply carburetor heat before closing throttle.
(4) Glide at 70-80 MPH, with flaps up.
(5) Lower flaps as desired below 100 MPH.
(6) Maintain 65-75 MPH, with flaps extended.

(7) Trim airplane with elevator trim tab for glide.

(8) Check autopilot disengaged.

LANDING.

NORMAL LANDING.

(1) Landing technique is conventional for all flap settings.

SHORT FIELD LANDING.

(1) Make a power-off approach at 63 MPH, with flaps 40° (fourth notch).

(2) Land on main wheels first.

(3) Lower nosewheel to ground immediately after touchdown.

(4) Apply heavy braking as required.

CAUTION

Excessive braking will skid tires, resulting in lengthened ground run and tire damage.

LANDING IN STRONG CROSSWIND.

(1) Use minimum flap setting required for field length.

(2) Use wing low, crab, or combination method of drift correction.

(3) Land in a nearly level attitude.

(4) Hold straight course with steerable nosewheel and occasional braking if necessary.

CAUTION

If a go-around is necessary, push the carburetor air heat knob full in to assure rapid engine acceleration.

AFTER LANDING.

(1) Raise flaps after completion of landing roll.

(2) Normal glide and taxiing should cool the engine sufficiently; however, if an excessive amount of taxiing is necessary, allow the engine to cool before cutting the ignition by allowing it to idle at 1000 rpm two to three minutes.

(3) Stop engine by pulling the mixture control knob to full lean position. Do not open the throttle as the engine stops.

(4) After the engine stops, turn the ignition switch "off".

(5) Turn all switches "off". Be sure — otherwise your battery may run down overnight.

(6) Set parking brake, if required.

SECTION III

OPERATING DETAILS

THE FOLLOWING PARAGRAPHS cover in somewhat greater detail the items entered as a Check List in Section II. Every item in the list is not discussed here. Only those items on the Check List that required further explanation will be found in this section.

CLEARING THE PROPELLER.

"Clearing" the propeller should become a habit with every pilot. Making sure no one is near the propeller before the engine is started should be a positive action. Yelling "clear" in loud tones is best. An answering "clear" from ground crew personnel is the response that is required.

ENGINE OPERATING PROCEDURE.

You have a new Continental engine made to the highest standards available. This engine has been carefully operated in its run-in and flight tests so that the engine, as you receive it, is in the best possible condition. Proper engine operation will pay you rich dividends in increased engine life. The following points are mentioned so that you may receive the maximum of trouble-free operation and low maintenance cost.

STARTING.

Ordinarily, the engine starts best and smoothly with proper priming and the throttle opened ⅛ inch. Check the oil pressure as soon as the engine is running.

WARM-UP.

The engine should be warmed up at 800 to 1000 rpm headed into the wind where possible. The remainder of the warm-up should be accomplished while taxiing and should not exceed 1800 rpm. Engine ground operation or idling in summer temperatures should be limited to the very minimum and, in most cases, starting, taxiing to the end of the runway, and checking the engine quickly is an adequate amount.

TAKE-OFF.

Most engine harm results from improper operation before the engine is properly warmed and temperatures stabilized. For this reason, on your initial take-off, use maximum power only when and as necessary for safe operation of the airplane, reducing power as quickly as possible.

Since the skiplane has no brakes, if a full-power run-up appears advisable it should be made at the start of the take-off run. With the airplane moving, the engine should turn 2600 to 2700 RPM.

CRUISING.

The maximum recommended cruising rpm's are 2900 rpm at sea level, 3050 rpm at 5000 ft., and 3200 rpm at 10000 ft. These rpm's will produce approximately 72% power at the given altitudes. Greater range can be obtained at lower rpm settings as shown in the cruise performance chart. At any cruising altitude, adjust the mixture by pulling the mixture control knob out until the rpm decreases slightly and then enrichen to maximum engine rpm for that particular throttle setting. Airspeed must be held constant during leaning for maximum rpm since small changes in airspeed will result in small rpm changes. The maximum rpm increase which can be expected as the mixture is leaned from "full rich" is 30 to 50 rpm. Readjust the mixture for each change in power, altitude or carburetor heat.

LET-DOWN.

The cruising glide should begin far enough away from destination so that a gradual descent can be made with power on, with mixture full rich. On approaching the landing field, the engine should be throttled down gradually and the glide, with closed throttle, should not be longer than necessary.

IDLING ENGINE.

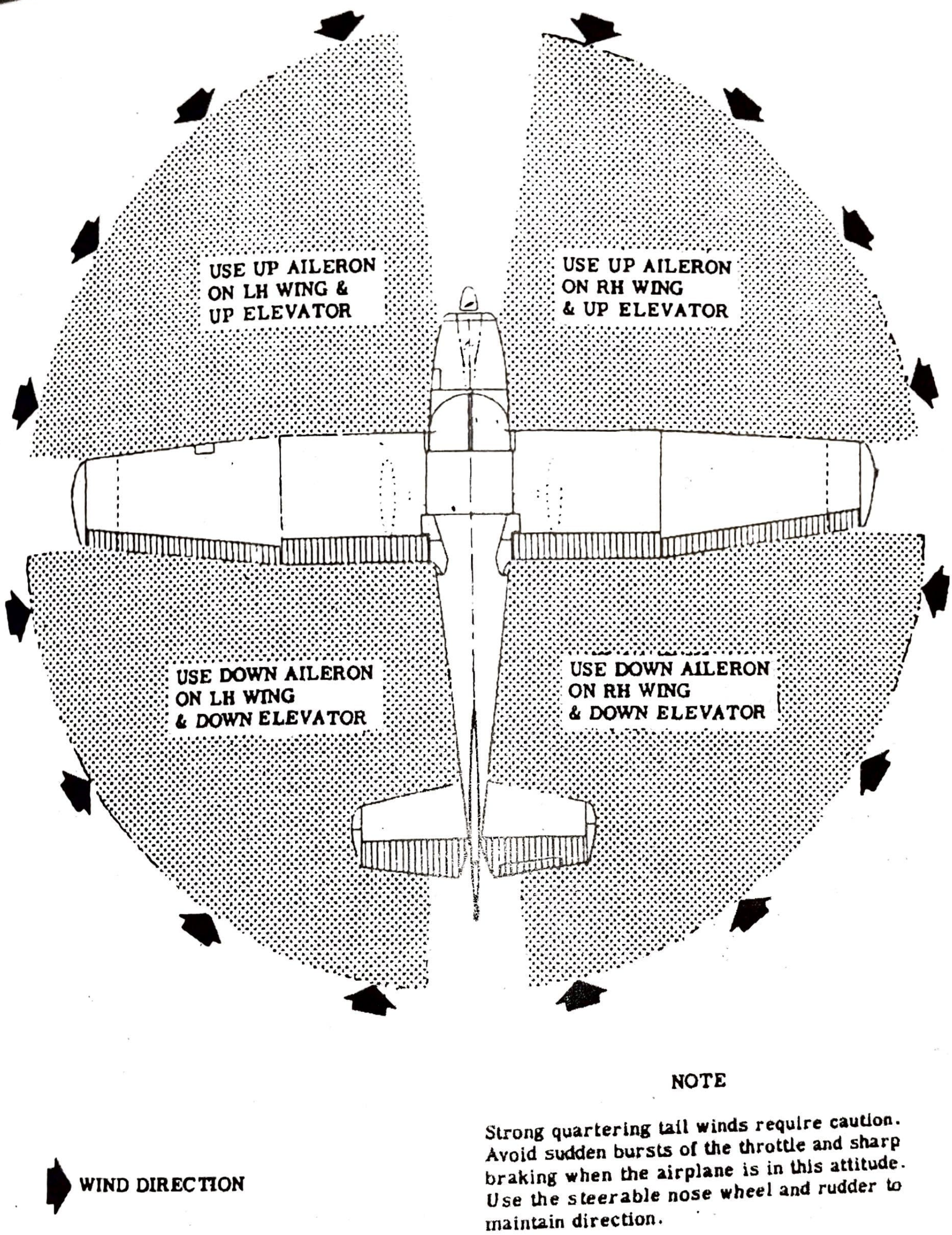
Your engine is set to idle well below 800 rpm, but at engine speeds below 800 rpm, satisfactory piston lubrication cannot be maintained. Therefore, it is recommended that the engine not be allowed to operate below 800 rpm for prolonged intervals.

STOPPING ENGINE.

The engine should always be allowed to idle (800 to 1000 rpm) for two to three minutes before stopping. This not only permits the temperature of the various engine parts to equalize, but works oil up around the pistons and rings, thus leaving the engine in good condition for the next start. Providing the engine has been idled for approximately two minutes, it is recommended that the engine be stopped by using the mixture control knob. The procedure should be to place the mixture control knob in the full lean position (pull the knob out as far as possible). Do not open the throttle as the engine stops. After the engine stops, turn the ignition switch to the "off" position..

TAXIING.

Release the parking brake before taxiing and use the minimum amount of power necessary to start the airplane moving. During taxi, and especially when taxiing downwind, the rpm should be held down to prevent excessive taxi speeds. Taxiing should be done at a speed slow enough to make the use of brakes almost entirely unnecessary. Using the brakes as sparingly as possible will prevent



NOTE

Strong quartering tail winds require caution. Avoid sudden bursts of the throttle and sharp braking when the airplane is in this attitude. Use the steerable nose wheel and rudder to maintain direction.

TAXIING DIAGRAM

Figure 11.

undue wear and strain on tires, brakes, and landing gear. Normal steering is accomplished by applying pressure to the rudder pedal in the direction the airplane is to be turned. For smaller radius turns, at slow speed, the brakes may be used on the inside wheel. At slow taxi speed, this airplane may be pivoted about the outboard strut fitting without sliding the tires. When taxiing in crosswinds it is important that speed and use of brakes be held to a minimum and that all controls be utilized (see taxiing diagram on page 3-3) to maintain directional control and balance.

NOTE

> Caution should be used when taxiing over rough fields to avoid excessive loads on the nosewheel. Rough use of brakes and power also add to nose wheel load. A good rule of thumb: "Use minimum speed, power, and brakes."

Taxiing over loose gravel or cinders should be done at low engine speed to avoid abrasion and stone damage to the propeller tips. Full throttle runups over loose gravel are especially harmful to propeller tips. When take-offs must be made over a gravel surface, it is very important that the throttle be advanced slowly. This allows the airplane to start rolling before high rpm is developed, and the gravel will be blown back of the propeller rather than pulled into it. When unavoidable small dents appear in the propeller blades, they should be immediately corrected as described in section V under propeller care.

On skis, the 175 taxis like any other skiplane. With nose ski steering and no brakes, its turning radius is greater than for the landplane with the inside wheel braked. The skiplane's turning radius center point is approximately 8 feet beyond the wing tip.

TAKE-OFF.

Normal take-offs are performed with the flaps retracted. Minimum run, obstacle clearance and soft or rough field take-offs are all performed with 20° flaps. With the flaps extended 20°, ground run is reduced slightly, the total distance to clear a 50 foot obstacle is reduced approximately 10%, and take-off speed is approximately 5 MPH slower.

Flap deflections of 30° and 40° are not recommended at any time for take-off. General rules for flap operation during take-off are as follows:

Don't under marginal conditions leave flaps on long enough that you are losing both climb and airspeed.

Don't release flaps with airspeed *below* flaps up stalling speed. (See stall chart on page 3-5).

Do slowly release the flaps as soon as you reasonably can after take-off, preferably 50 feet or more over terrain or obstacles.

Consult the take-off chart (figure 24) for take-off distances under various gross weight, altitude, and headwind conditions.

POWER OFF *Stalling Speeds* **MPH TIAS**

Gross Weight 2350 lbs.	ANGLE OF BANK			
CONDITION	0°	20°	40°	60°
Flaps Up	60	62	69	85
Flaps 20°	56	58	64	79
Flaps 40°	51	53	58	72

Figure 12. Stall Chart

CLIMB.

For detailed climb data, see climb performance chart in Section VI. Normal climbs are conducted at 80-90 MPH with flaps up and full throttle for best engine cooling. The best *rate-of-climb* speeds range from 84 MPH at sea level to 80 MPH at 10,000 feet. If an obstruction dictates the use of a steep climb angle, the best *angle-of-climb* speed should be used with flaps up and full throttle. These speeds vary from 61 MPH at sea level to 70 MPH at 10,000 feet.

NOTE

Steep climbs at these low speeds should be of short duration because of poor engine cooling.

Climb techniques and airspeeds for the skiplane are identical to the landplane. The skiplane rate-of-climb is reduced slightly by the additional drag of the skis.

CRUISE.

For cruise data, see cruise performance chart in Section VI.

Range and endurance figures are given for lean mixture, from 2500 feet to 12,500 feet and for rich mixture at altitudes of 2,500 feet and 5,000 feet. All figures are based on zero wind, 42 gallons of fuel for cruise, McCauley 8467 propeller, 2350 pounds gross weight, and standard atmospheric conditions. For lean mixture figures, the mixture is leaned until the rpm decreases slightly and then enrichened to maximum rpm. Allowances for fuel reserve, headwinds, take-offs and climb, and variations in mixture leaning technique should be made and are in addition to those shown on the charts. Other indeterminate variables such as carburetor metering characteristics, engine and propeller conditions, and turbulence of the atmosphere may account for variations of 10% or more in maximum range.

Skiplane cruise and range performance is given in the Skiplane Cruise Performance Chart in Section VI. Skiplane cruise techniques and engine limits are identical to those for the landplane.

STALLS.

The stalling speeds shown (see stall chart) are for forward c.g., normal category, full gross weight conditions. Other loadings result in slower stalling speeds. The horn stall warning indicator produces a steady signal 5 to 10 MPH before the actual stall is reached and remains on until the airplane flight attitude is changed. Fast landings will not produce a signal.

The stall characteristics are conventional for the flaps up and flaps down condition. Slight elevator buffeting may occur just before the stall with flaps down.

LANDING.

Normal landings are made power off with any flap setting. Slips are prohibited in full flap approaches because of a downward pitch encountered under certain combinations of airspeed and sideslip angle.

Approach glides are normally made at 70-80 MPH with flaps up, or 65-75 with flaps down, depending upon the turbulence of the air. The elevator trim tab is normally adjusted in the glide to relieve elevator control forces.

Landings are usually made on the main landing wheels to reduce the landing speed and the subsequent need for braking in the landing roll. The nose wheel is lowered gently to the runway after the speed is diminished to avoid unnecessary nose gear strain. This procedure is especially important in rough field landings.

Heavy braking in the landing roll is not recommended because of the probability of skidding the main wheels with the resulting loss of braking effectiveness and damage to the tires.

Skiplane stalling and landing speeds are identical to the landplane. However, since landing distances will vary greatly under different runway surface conditions, no landing distances are given.

COLD WEATHER OPERATION.

Prior to starting on cold mornings, it is advisable to pull the propeller through several times by hand to "break loose" or "limber" the oil, thus conserving battery energy. In extremely cold (–20° F) weather, prime the engine as follows:

(1) Clear propeller.
(2) Turn master switch "on".

(3) With ignition switch "off" and throttle closed, prime the engine four to ten strokes as the engine is being turned over.
(4) Turn ignition switch "on".
(5) Open throttle ⅛ inch (to idle position) and start engine by pulling starter handle.

NOTE

In extremely cold weather, a few strokes of the primer as the engine fires will enable the engine to keep running. (Avoid overpriming). After priming, push the primer knob all the way in and turn to locked position to avoid possibility of engine drawing fuel through the primer. To avoid damage to the starter gear, do not pull out on starter handle for a second starting attempt until the engine has come to a stop.

During cold weather operations, no indication will be apparent on the oil temperature gage prior to take-off if outside air temperatures are very cold. After a suitable warm-up period (2-5 minutes at 1000 rpm), accelerate the engine several times to higher engine rpm. If the engine accelerates smoothly and the oil pressure remains normal and steady, it is ready for take-off.

To operate the engine in occasional outside air temperatures from 10° F to 20° F, the following procedure is recommended:

(1) Use full carburetor heat during engine warm-up and ground check.
(2) Use minimum carburetor heat required for smooth operation in take-off, climb, and cruise.
(3) Select relatively high rpm settings for optimum mixture distribution, and avoid excessive leaning in cruising flight.
(4) Avoid sudden throttle movements during ground and flight operation.

When operating in sub-zero temperatures, avoid using partial carburetor heat. Partial heat may raise the carburetor air temperature to the 32-degree to 80-degree range where icing is critical under certain atmospheric conditions.

For operation in consistently low temperatures, a winterization kit is available from Cessna Dealers. The kit consists of removable baffles for the cooling air intakes in the nose cowling, which help maintain engine temperatures in extremely cold weather.

OIL DILUTION SYSTEM.

If your airplane is equipped with an oil dilution system, and very low temperatures are expected, dilute the oil before stopping the engine. Determine the dilution time required for the anticipated temperature, from the Oil Dilution Table. With the engine operating at 1,000 rpm, hold down the oil dilution switch button the necessary time. Fuel will flow into the oil pump at the rate of 1 quart every minute. If more than two quarts of fuel appears necessary to dilute the oil for the anticipated temperature, check the oil level before starting to dilute. With a full sump, only two quarts may be added without risk of overflow and its attendant fire hazard. To make room for the additional fuel some oil must be drained before dilution. The total volume of fuel and oil must not exceed 12 quarts.

During the dilution period, watch the oil pressure closely. A slight, gradual pressure drop is to be expected as the oil is thinned. Stop the engine, however, if any sharp fluctuation in pressure is observed; it may be caused by an oil screen clogged with sludge washed down by the fuel.

NOTE

When the dilution system is used for the first time each season, the oil should be changed and the oil screens cleaned to remove sludge accumulations washed down by the fuel. Use the full dilution period, drain the oil, clean the screens, refill with fresh oil and redilute as required for the anticipated temperature before the engine has cooled completely.

On starting and warm-up after diluting the oil, again watch the oil pressure closely for an indication of sludge blocking the screens. If the volume of diluted oil exceeds 11 quarts, run the engine long enough to evaporate some of the fuel and lower the sump level before take-off. Otherwise, the sump may overflow when the airplane is nosed up

OXYGEN SYSTEM (OPTIONAL EQUIPMENT).

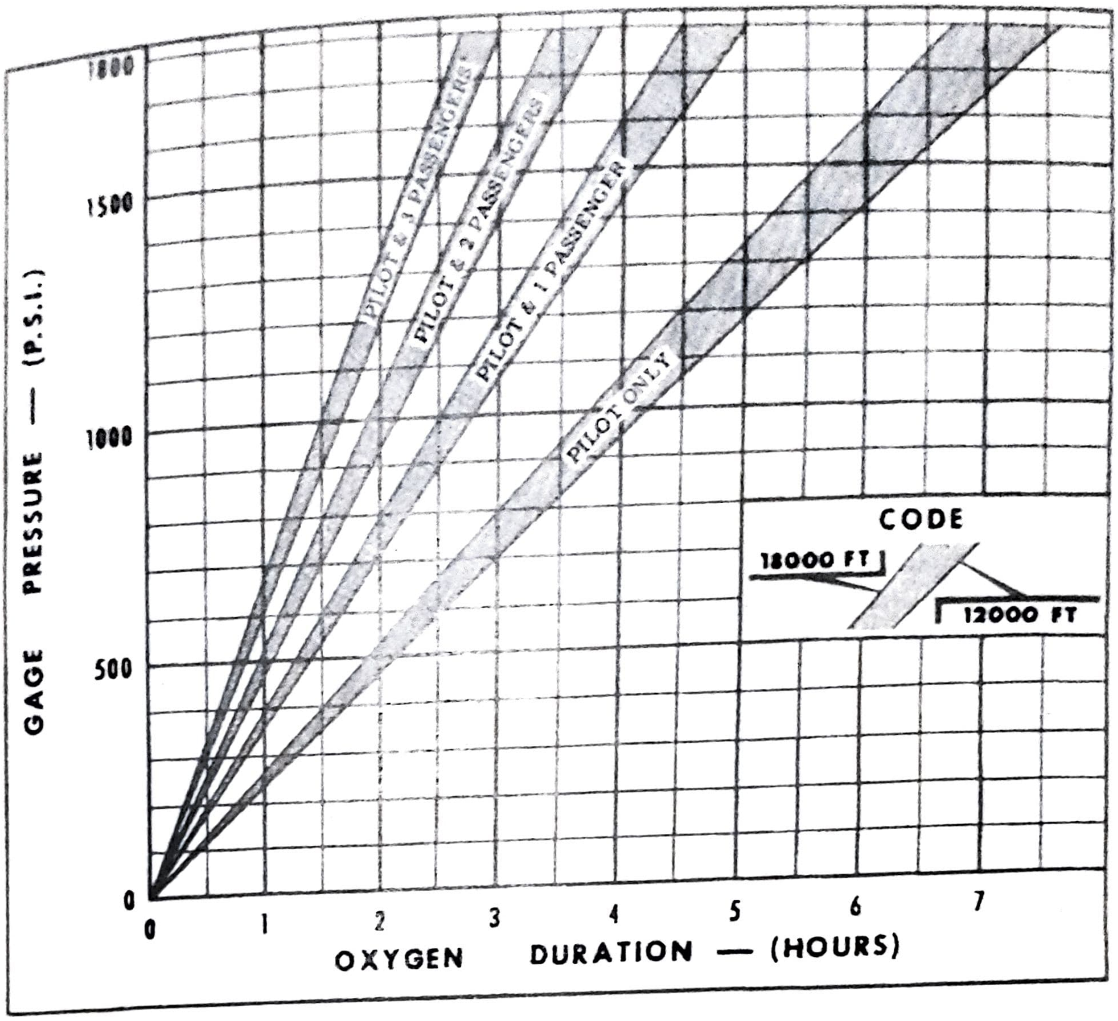
An oxygen system, capable of supplying oxygen for a pilot and three passengers, is available as optional equipment for your Cessna. It is completely automatic and requires no manual regulation.

The system consists of an oxygen cylinder, a pressure gage, pressure regulator, outlet couplings, and four disposable type oxygen masks, complete with rubber hoses and position indicators. The face masks and hoses are stored in a plastic bag on the utility shelf when not in use.

OIL DILUTION TABLE

	TEMPERATURE		
	0°F	−10° F	−20° F
Dilution Time	1 min.	2 min.	3 min.
Fuel Added	1 qt.	2 qt.	3 qt.
Oil Drained (Sump Full)	0 qt.	0 qt.	1 qt.

NOTE: Maximum sump capacity is 12 quarts.
Maximum fuel and oil in sump for take-off is 11 quarts.



OXYGEN SYSTEM OPERATION.

Prior to flight, check to see that the valve on the oxygen cylinder is full open (full counterclockwise). Note the oxygen pressure gage reading to be sure that there is an adequate supply of oxygen for the trip.

To use the oxygen system, proceed as follows:

a. Select mask and hose from plastic bag on utility shelf.
b. If mask is not connected to hose, attach by inserting short plastic tube securely into oxygen delivery hose.
c. Attach mask to face.
d. Select oxygen coupling in overhead console panel. Push dust cover to one side and insert end of mask hose into coupling. Oxygen will start to flow and no further adjustments are necessary.

NOTE

If the red oxygen flow indicator for the face mask hose line is out of sight, oxygen is flowing.

TACTAIR AUTOMATIC FLIGHT CONTROLS.

Although it is possible to take off and land with the Tactair units engaged, merely by overpowering them, you will find that control forces are greater and your feel of the airplane is diminished. *Before taking off or landing make sure the master knob is off (pushed in).*

Since it is entirely pneumatic and operated by the engine-driven vacuum pump, the Tactair system needs no warm-up period before engagement. It may be used at any altitude up to 20,000 feet; above 20,000 feet, atmospheric pressure is insufficient to supply the necessary control forces.

Before engaging the system, trim the airplane straight and level and center the knobs on the control head. Then pull out the master knob. If the airplane is not trimmed, or the knobs are not centered, as soon as the unit is engaged the airplane's attitude will change. The change will not be abrupt and no excessive loads will be imposed on the airframe, but operation will be smoother if both airplane and control head knobs are trimmed before engagement.

T-1 ROLL STABILIZER OPERATION.

To operate the T-1 roll stabilizer unit, center the trim knob and pull on the master knob. With the roll trim knob centered, the unit will immediately level the wings from any attitude within the limits of the gyro. The trim knob may be rotated to obtain up to 10 degrees of bank. Sharp turns may be made merely by overriding the unit with the control wheel.

T-2 HEADING LOCK OPERATION.

Engagement of the T-2 unit is identical to the T-1, except for the additional caging and setting of the directional gyro and setting the course selector card before engaging the unit. Once the unit is engaged, turns to a new heading may be made merely by turning the course selector knob to the new heading. If the new heading is within 80 degrees of the former heading, the unit will make approximately a one-degree-per-second turn to the new heading. (If the new heading is more than 80 degrees from the original, the autopilot will turn to the reciprocal of the new heading.) If the airplane hunts or oscillates, adjust the roll trim knob until the selector card and directional gyro are aligned. The airplane may be slightly wing-low; it is in this manner that the unit trims out torque effects.

Turns may be made by overriding the stabilizer unit. When you release the controls, the airplane returns to the course selector heading if it is within 80 degrees, or to its reciprocal.

Caging the directional gyro eliminates the heading lock feature; however, the relation of the two compass cards will result in a continuous signal to the control head. If the cards are aligned, the signal will be balanced and the wing will remain level as with the T-1. If the cards are not aligned, a continuous bank signal will be sent, attempting to match the compass cards. As soon as the gyro is uncaged, the heading lock will function as usual.

T-3 AUTOPILOT OPERATION.

To engage the T-3 autopilot, trim the airplane straight and level, hands-off. Set the autopilot pitch and turn knobs to center and the course selector card to coincide with the heading on the directional gyro. Then pull on the master knob.

The roll and heading lock functions of the T-3 unit are identical to the T-2, except that the heading lock knob on the control head must be pushed on to engage the heading lock. In addition, the turn knob on the control head may be used to make turns up to 28 degrees of bank. Displacing the turn knob automatically disengages the heading lock; after the turn knob is returned to center, the heading lock may be engaged once more and the airplane will return to the heading set on the course selector, or to its reciprocal, whichever is closer.

The tab under the turn knob can be moved left or right to change the roll zero point up to two degrees, if necessary, to trim out torque effects and prevent hunting. Move the tab until the course selector card and directional gyro card are aligned. Changes in power settings may require readjustment of the tab.

The pitch control knob on the right side of the control head may be set to maintain a nose-up or nose-down attitude up to approximately 10 degrees down or 15 degrees up. For best results, the stabilizer should be adjusted with changes in attitude, power or center of gravity, just as you would in manual-control flight. The pitch control unit can overcome an out-of-trim condition, but it may produce oscillations in doings so since there is no automatic trim tab control. Your ride will be smoother if you adjust the trim manually.

EMERGENCY PROCEDURES.

If a malfunction should occur in any of the autopilot units, it can be overridden merely with pressure on the normal flight controls and the entire autopilot may be disengaged by pushing in the master knob. Leaks in the system will produce only a loss of suction. If the suction gage reading falls below 3.5 in. Hg, push in the master knob to disengage the autopilot. All the available suction then will be directed to the instruments.

SECTION IV

OPERATING LIMITATIONS

OPERATIONS AUTHORIZED.

Your Cessna 175 with standard equipment as certificated under FAA Type Certificate No. 3A17 is approved for day and night operation under VFR.

Additional optional equipment is available to increase its utility and to make it authorized for use under IFR day and night. An owner of a properly equipped 175 is eligible to obtain approval for its operation on single engine scheduled airline service on VFR.

MANEUVERS — NORMAL CATEGORY.

The Model 175 exceeds the requirements of the Civil Air Regulations, Part 3, set forth by the United States Government for airworthiness. Spins and aerobatic maneuvers are not permitted in normal category airplanes in compliance with these regulations. In connection with the foregoing, the following gross weights and flight load factors apply:

Gross Weight	2350 lbs.	
Flight Load Factor* Flaps Up	+3.8	−1.52
Flight Load Factor* Flaps Down	+3.5	

*The design load factors are 150% of the above and in all cases the structure meets or exceeds design loads.

Your airplane must be operated in accordance with all FAA approved markings, placards and check lists in the airplane. If there is any information in this section which contradicts the FAA approved markings, placards and check lists, it is to be disregarded.

AIRSPEED LIMITATIONS.

The following are the certificated true indicated airspeed limits for the Cessna 175:

Maximum (Glide or dive, smooth air)	176 mph (red line)
Caution Range (Level flight or climb)	140-176 mph (yellow arc)
Normal Range (Level flight or climb)	62-140 mph (green arc)

Flap Operating Range .... 53-100 mph (white arc)
Maneuvering Speed* .... 123 mph
*(The maximum speed at which you can use abrupt control travel without exceeding the design load factor.)

ENGINE OPERATING LIMITATIONS.

Power and Speed .... 175 bhp at 3200 rpm

ENGINE INSTRUMENT MARKINGS.

OIL TEMPERATURE GAGE.

Normal Operating Range .... Green Arc
Maximum Allowable .... Red Line

OIL PRESSURE GAGE.

Minimum Idling .... 10 psi (red line)
Normal Operating Range .... 30-60 psi (green arc)
Maximum .... 100 psi (red line)

FUEL QUANTITY INDICATORS.

Empty (5 gallons unusable each tank) .... E (red line)
*Not recommended for Take-off .... E to ¼ (red arc)
*This fuel available for all normal operations

TACHOMETER.

Normal Operating Range:
At sea level .... 2400-2900 (inner green arc)
At 5000 feet .... 2400-3050 (middle green arc)
At 10,000 feet .... 2400-3200 (outer green arc)
Maximum Allowable .... 3200 (red line)

WEIGHT AND BALANCE.

All aircraft are designed for certain limit loads and balance conditions. These specifications for your 175 are charted on pages 4-3 and 4-4.

A weight and balance report and equipment list for your particular airplane when it left the factory is furnished. Changes in original equipment affecting empty weight c.g. are required by the FAA to be recorded in the repair and alteration form 337. Using the empty weight, c.g. location, and moment derived from the latest of these two sources, and following the example shown, the exact moment may be readily calculated. This exact moment, when plotted on the center of gravity envelope, will quickly show whether or not the c.g.

is within limits. Refer to the loading graph for moment values of items to be carried.

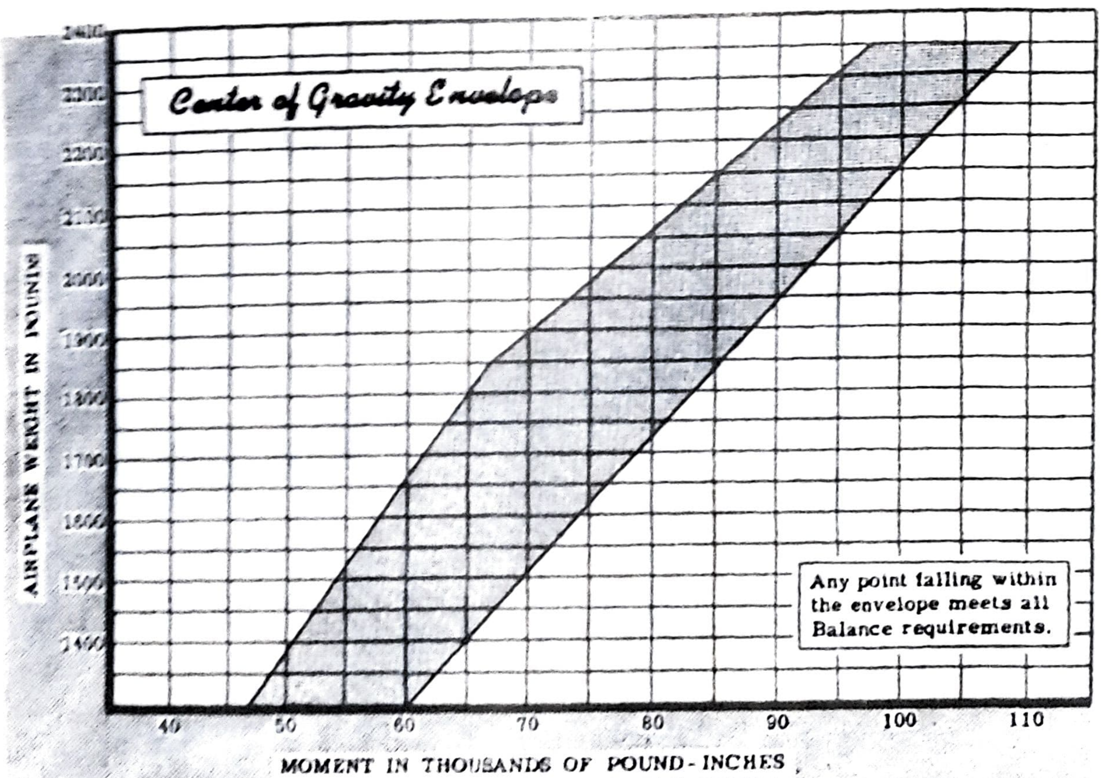
EXAMPLE PROBLEM FOR AN AIRPLANE WITH A LICENSED EMPTY WEIGHT OF 1386 LBS. AND A MOMENT OF 52,722 LB.-INS.

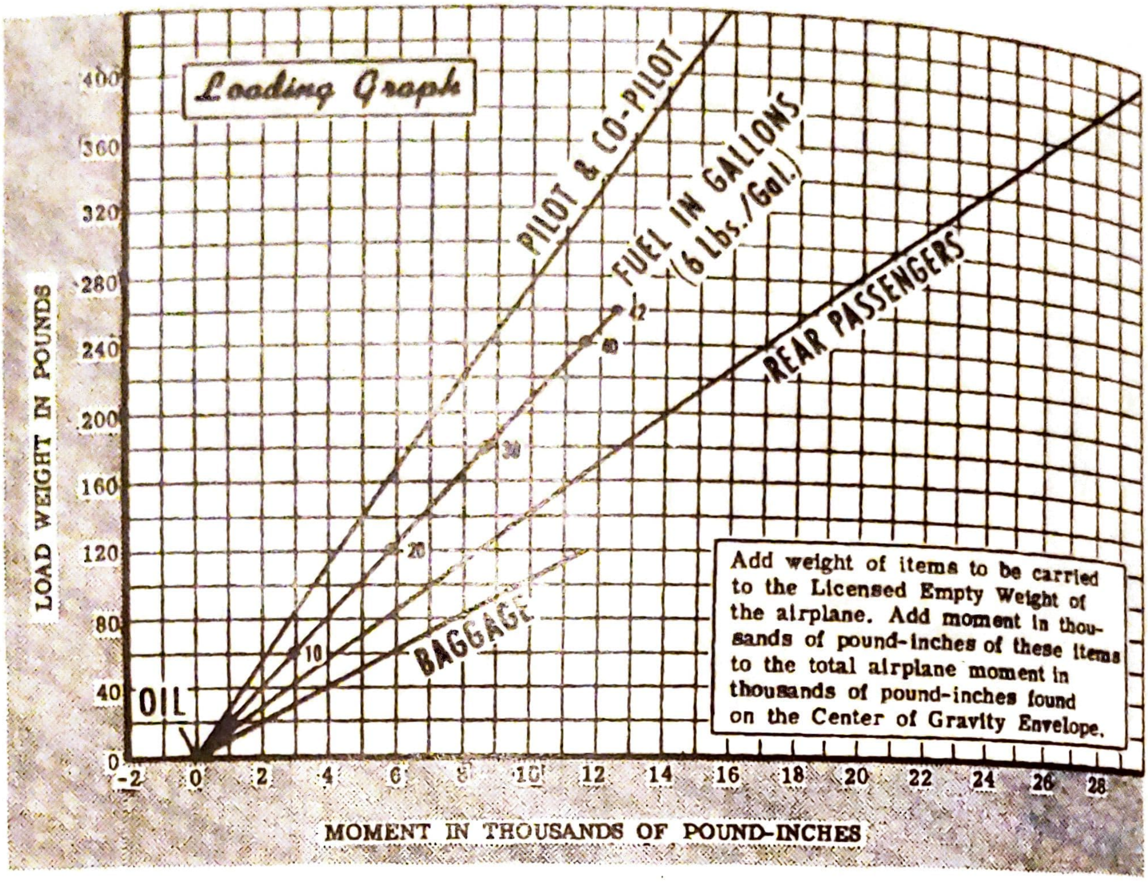
ITEM	WT.	MOMENT 1000
EMPTY WEIGHT (LICENSED)	1386	+ 52.7
OIL	19	— .4
PILOT & FRONT PASSENGER	340	+ 12.2
REAR PASSENGER (2)	340	+ 23.8
BAGGAGE	20	+ 1.9
FUEL TO GROSS WEIGHT (40.8 GAL.)	245	+ 11.8
Total	2350	+ 102.0

Locate this point (2350-102.0) on the center of gravity envelope graph, and, since the point falls within the envelope, the above loading meets all balance requirements.

NOTE

The above problem is an example of only one of many different loading configurations. To best utilize the available payload for your airplane, the loading charts on page 4-4 should be consulted to determine proper load distribution.





Loading Graph
PILOT & CO-PILOT
FUEL IN GALLONS (6 Lbs./Gal.)
REAR PASSENGERS
BAGGAGE
OIL
10
20
30
40
42
LOAD WEIGHT IN POUNDS
0
40
80
120
160
200
240
280
320
360
400
-2
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
MOMENT IN THOUSANDS OF POUND-INCHES
Add weight of items to be carried to the Licensed Empty Weight of the airplane. Add moment in thousands of pound-inches of these items to the total airplane moment in thousands of pound-inches found on the Center of Gravity Envelope.

SECTION V

CARE OF THE AIRPLANE

IF YOUR AIRPLANE is to retain that new plane performance, stamina, and dependability, certain requirements in its care, inspection, and maintenance must be followed. It is always wise to follow a *planned* schedule of lubrication and maintenance based on the climatic and flying conditions encountered in your locality.

Keep in touch with your Cessna dealer and take advantage of his knowledge and experience. He knows your airplane and how to maintain it. He will remind you when lubrications and oil changes are necessary and about other seasonal and periodic services.

GROUND HANDLING.

The airplane is most easily and safely maneuvered by hand with a tow-bar attached to the nose wheel. Always use the tow-bar (optional equipment) when one is available. When moving the airplane by hand, if no tow-bar is available, push down at the front edge of the stabilizer next to the fuselage to raise the nose wheel off the ground. When the nose wheel is held clear of the ground the airplane can be turned readily in any direction by pivoting it about the main gear. *Do not push down on the empennage by the tip of the elevator nor shove sidewise on the upper portion of the fin.* When moving the airplane forward or backwards, push at the wing strut root fitting or at the main gear strut.

MOORING YOUR AIRPLANE. (See figure 13.)

Proper tie-down procedure is your best precaution against damage to your parked airplane by gusty or strong winds. To tie down your airplane securely, proceed as follows:

(1) Tie sufficiently strong ropes or chains (700 pounds tensile strength) to the wing tie-down fittings located at the upper end of each wing strut.

(2) Secure the opposite ends of these ropes or chains to tie-down rings suitably anchored to the ground.

(3) Tie a rope or chain thru the nose gear tie-down ring and secure the opposite end to a tie-down ring in the ground.

(4) Securely tie the middle of a

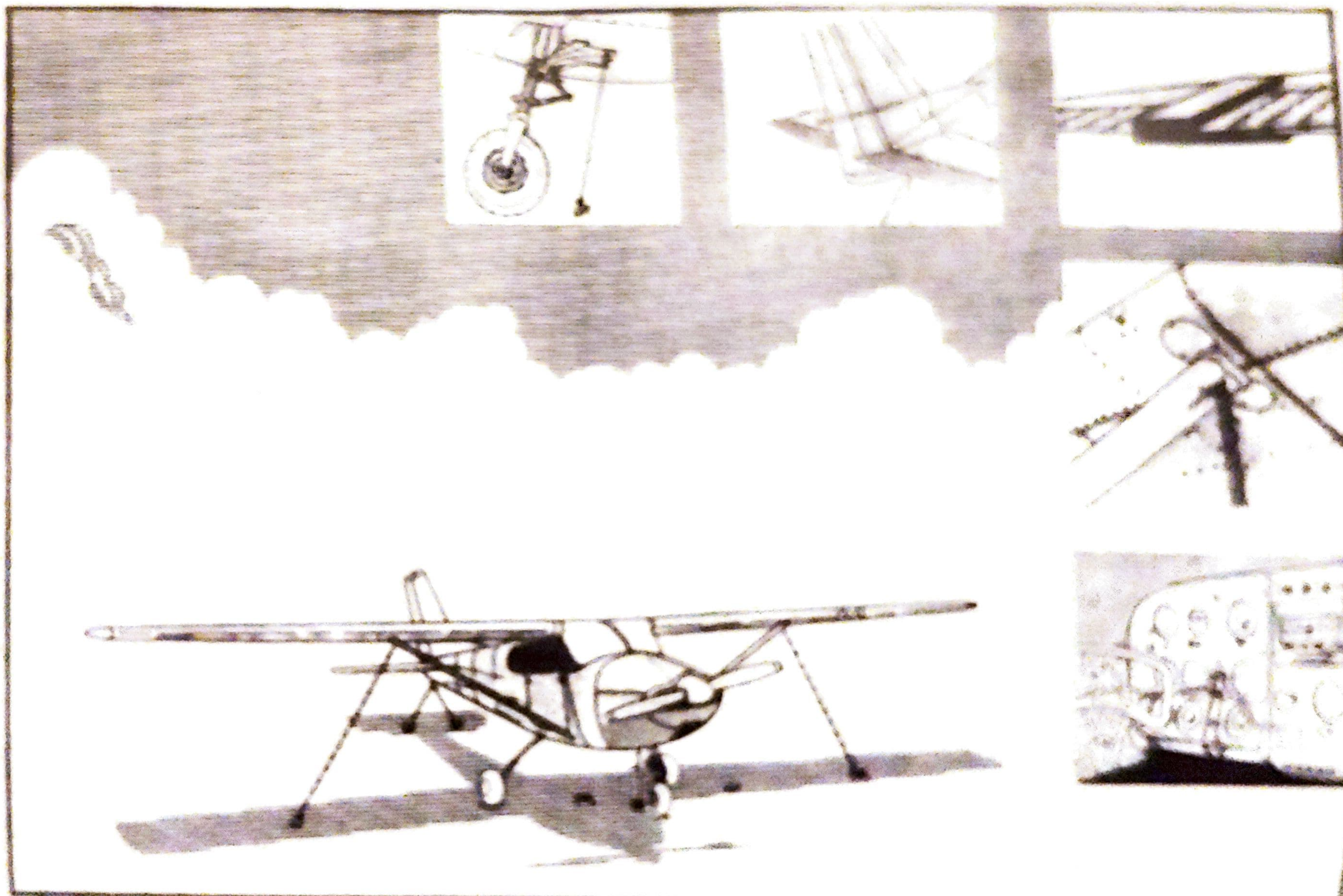


Figure 13. Airplane Tie-Down Procedure

length of rope to ring at tail. Pull each end of rope away at 45° angle and secure to tie-down rings positioned on each side of tail.

(5) Install surface control locks between the flap and aileron of each wing.

(6) Install controls lock on pilot's control column, or if controls lock is not available, tie pilot's control wheel back with front seat belt.

(7) Install surface control lock over fin and rudder.

STORAGE.

The all-metal construction of your Cessna makes outside storage practical, although inside storage will increase its life just as inside storage does for your car. If an airplane must remain inactive for a time, cleanliness is probably the most important consideration, whether your airplane is inside or outside. A small investment in cleanliness will repay you many times in not only keeping your airplane looking like new but in keeping it new. Later paragraphs in this section cover the subject in greater detail.

Do not neglect the engine when storing the airplane. Turn it over by hand or have it turned over every few days to keep the bearings, cylinder walls, and internal parts lubricated. Full tanks will help prevent condensation and will increase fuel tank life.

Using airplanes regularly tends to keep them in good condition. An airplane left standing idle for any great length of time is likely to deteriorate more rapidly than if it is flown regularly, and it should be checked over carefully before being put back into service.

LIFTING AND JACKING.

Your Cessna Dealer has special hoisting rings and jack point brackets, to jack your Cessna properly. *Do not use the brake casting as a jacking point.*

WHEEL ALIGNMENT.

The wheel alignment has been properly set at the factory. Excessive or uneven tire wear indicates an improper wheel setting for the "on the ground" weight at which you are operating. See your Cessna Dealer for realignment.

INTERIOR CARE.

To remove dust and loose dirt from the upholstery and carpet, clean the interior regularly with a vacuum cleaner.

Blot up any spilled liquid promptly, with cleansing tissue or rags. Don't pat the spot — press the blotting material firmly and hold it for several seconds. Continue blotting until no more liquid is taken up. Scrape off sticky materials with a dull knife, then spot-clean the area.

Oily spots may be cleaned with household spot removers, used sparingly. Before using any solvent, read the instructions on the container and test it on an obscure place in the fabric to be cleaned. Never saturate the fabric with a volatile solvent; it may damage the padding and backing materials.

Soiled upholstery and carpet may be cleaned with a foam-type detergent, used according to the manufacturer's instructions. Keep the foam as dry as possible and remove it with a vacuum cleaner, to minimize wetting the fabric.

The plastic trim, instrument panel and control knobs need only be wiped off with a damp cloth. Never use a volatile solvent on plastic.

WINDSHIELD AND WINDOWS.

The windshield is a single, full-floating unit of free-blown "Longlife" plastic. To clean and prevent scratches and crazing, wash the windshield and plastic windows carefully with plenty of soap and water, using the palm of the hand to feel and dislodge dirt and mud. A soft cloth, chamois or sponge may be used, but only to carry water to the surface. Rinse thoroughly, then dry with a clean, moist chamois.

Rubbing the surface of the plastic builds up an electrostatic charge so that it attracts dust particles in the air. Wiping it with a moist chamois will remove both the dust and this charge.

Remove oil and grease with a cloth moistened wtih kerosene. Never use gasoline, benzene, alcohol, acetone, carbon tetrachloride, fire extinguisher or anti-ice fluid, lacquer thinner or glass cleaner. These materials will soften the plastic and may cause it to craze.

After removing dirt and grease, if the surface is not seriously scratched it should be waxed with a good grade of commercial wax. The wax will fill in minor scratches and help prevent further scratching. Apply a thin, even coat of wax and bring it to a high polish by rubbing lightly with a clean, dry, soft flannel cloth. Do not use a power buffer; the heat generated by the buffing pad will soften the plastic.

Do not use a canvas cover on the windshield unless freezing rain or sleet is anticipated. Canvas covers may scratch the plastic.

ALUMINUM SURFACES.

The clad aluminum surfaces of your Cessna require only a minimum of care to keep them bright and clean. The airplane may be washed with clear water to remove dirt; oil and grease may be removed with gasoline, naphtha, carbon tetrachloride or other nonalkaline solvents. While household detergent soap powders are effective, they should be used cautiously since some are strongly alkaline and may attack the aluminum.

Dulled aluminum surfaces may be cleaned effectively with a mixture of about two quarts of denatured alcohol, two quarts of water and a package of powdered Bon Ami.

PAINTED SURFACES.

With only a minimum of care, the lacquered exterior of your Cessna will retain its brilliant gloss and rich color for many years. The lacquer should not be waxed or polished for approximately 30 days after it is applied, so that any solvent remaining in the paint may escape. After this initial curing period, regular waxing with a good automotive wax helps preserve the lacquer's luster and affords a measure of protection from damage.

Fluids containing dyes, such as fuel and hydraulic oil, if accidentally spilled on the surface should be flushed away at once to avoid a permanent stain. Battery electrolyte must be flushed off at once, and the area neutralized with an alkali such as baking soda solution, followed by a thorough rinse with clear water.

METAL PROPELLER.

Little maintenance is required to keep your metal propeller in airworthy condition. The blades should be thoroughly inspected at least every 25 hours for dents, nicks and scratches. When small dents and nicks appear, they should be carefully dished and shallowed out using a fine-cut file, sandpaper and crocus cloth. An occasional wiping of the metal propeller with an oily cloth will remove grass and bug stains and assist materially in corrosion-proofing in salt water areas.

LUBRICATION AND SERVICING.

Specific lubrication and servicing points, intervals and specifications are shown on figure 14 . In addition, all pulleys, the trim tab actuator rod, control surface hinge bearings, bellcrank clevis bolts, flap actuating handle, brake pedal pivots, rudder pedal crossbars, shimmy dampener pivot bushings, door hinges and latches, Bowden controls, throttle and control rod universal (if unsealed), should be lubricated with SAE 20 General Purpose oil every 1,000 hours or oftener as required.

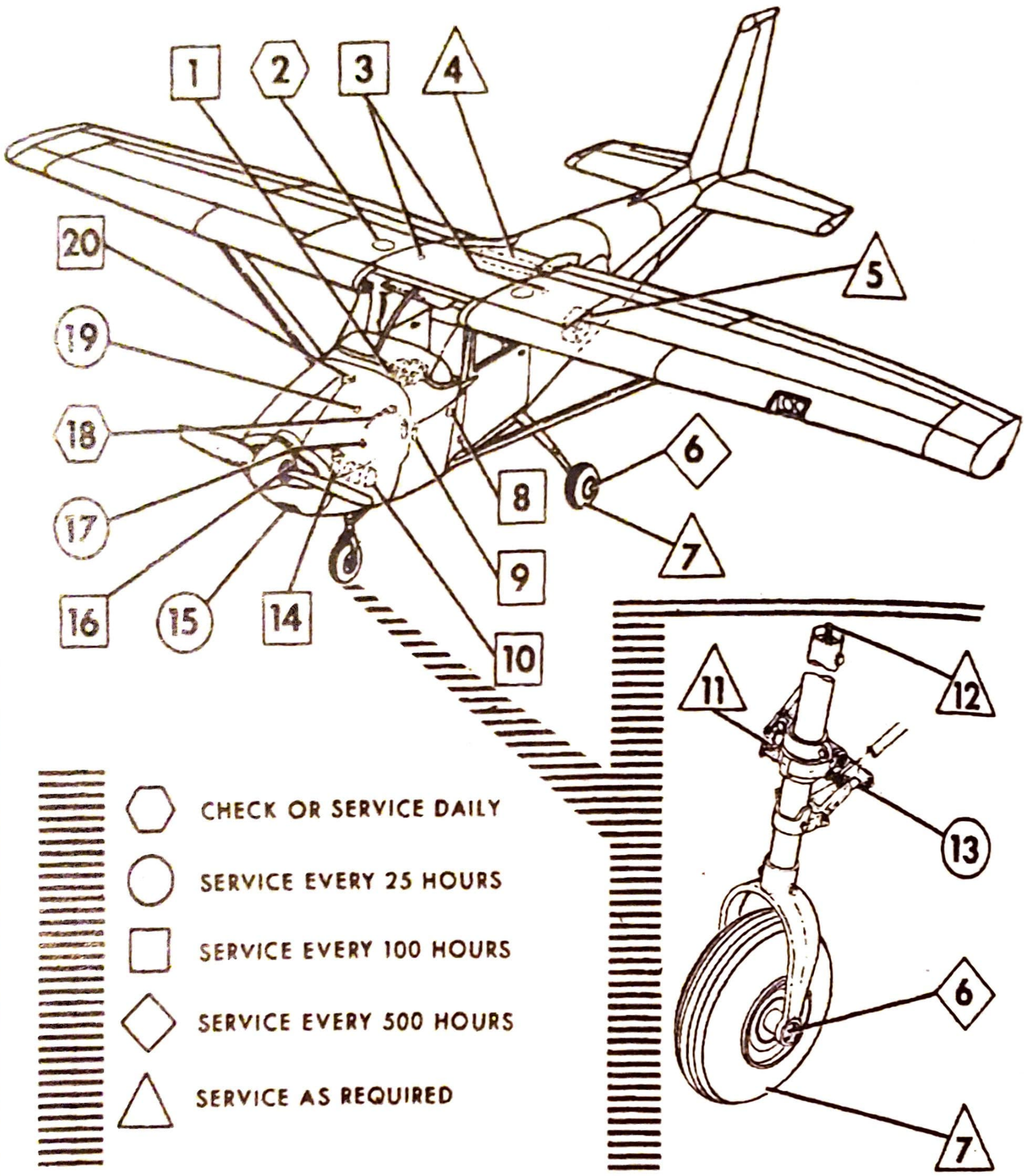
In general, roller chains (aileron, tab wheel, tab actuator) and control cables tend to collect dust, sand and grit when they are greased or oiled. Except under seacoast conditions, more satisfactory operation results when the chains are wiped clean occasionally with a dry cloth.

NOSE GEAR SHOCK STRUT.

The nose gear shock strut should be kept clean, filled with fluid and correctly inflated. The exposed portion of the strut piston, particularly, should be wiped off with a cloth moistened in hydraulic fluid, to remove dust and grit which may cut the O-ring seals in the strut barrel.

Inflation of the nose strut should be checked whenever tire pressures are checked. The fluid level should be checked on periodic inspections, and oftener if there is evidence of leakage on the piston or around the filler valve. If the leakage is appreciable or persistent, the strut should be serviced and repaired as necessary by your Cessna Dealer.

To check the strut inflation, jack the nose or lower the tail until the strut is fully extended and the wheel is clear of the ground. Remove the



DAILY

FUEL TANK FILLERS (2) — Service after each flight with 80/87 octane aviation grade fuel. Tank capacity is 26 gallons each.

OIL FILLER AND DIPSTICK (18) — Maintain oil level at 6 quarts or more; fill if extended flight is planned. Use aircraft grade engine oil, SAE 40 above 50° F and SAE 20 below 50° F.

Figure 14. Lubrication and Servicing

○ 25 HOURS

NOSE GEAR TORQUE LINKS (13) — Lubricate through pressure gun fittings with MIL-L-7711 grease. Wipe off excess.

CARBURETOR AIR FILTER (15) — At least every 25 hours, oftener under dusty conditions, service the filter in accordance with the instructions stamped on the filter frame. In extremely dusty conditions, daily servicing may be necessary.

OIL SUMP (17) — Remove lower cowling and carburetor air box. Drain oil by removing plug in sump.

OIL PRESSURE SCREEN (19) — At each engine oil change, remove the screen and wash it in Stoddard solvent, then blow dry and replace.

□ 100 HOURS

INSTRUMENT AIR FILTERS (1) — Install new filters. Erratic or sluggish instrument responses with normal suction gage readings indicate clogged filters.

FUEL TANK SUMP DRAINS (3) — Remove the drain plugs, drain off water and sediment. Safety the drain plugs to the wing structure.

FUEL LINE DRAIN (2) — Remove the plug, draw off water and sediment. Safety the plug to the fuselage structure.

BRAKE MASTER CYLINDERS (9) — Fill with MIL-H-5606 (red) hydraulic fluid. Filling with a pressure pot connected to the wheel cylinder bleeder ports is preferred, but fluid may be added through the plugs in the tops of the master cylinders.

OIL FILTER (10) — Replace the optional filter whenever oil on the dipstick appears dirty, at least each 100 hours under average conditions.

FUEL STRAINER AND DRAIN VALVE (14) — Drain at least two ounces, to remove water and sediment. Each 100 hours, disassemble and clean the screen and bowl.

SUCTION RELIEF VALVE (16) — Check the screen for dirt and obstructions; remove and wash it in Stoddard solvent. A clogged screen will give high suction gage readings.

OIL SEPARATOR (20) — Remove, wash in Stoddard solvent and blow dry with low-pressure air.

◇ 500 HOURS

WHEEL BEARINGS (6) — Repack with MIL-L-3545 wheel bearing grease at least every 500 hours; oftener if more than the usual amount of water, mud, or slush is encountered.

△ AS REQUIRED

OXYGEN CYLINDER (4) — Check gage pressure, fill with aviator's breathing oxygen, Federal Spec. No. BB-0-925, as required for the anticipated flight. See the Oxygen Duration Table, page 3-9. Maximum pressure is 1800 psi.

BATTERY (5) — Check the electrolyte level at least every 30 days; oftener in hot weather. Maintain the level by adding distilled water. **DO NOT** overfill. Immediately neutralize spilled electrolyte with baking soda solution, then flush away with water. Keep battery clean and connections tight. Neutralize corrosion deposits with baking soda solution, then rinse thoroughly.

TIRES (7) — Maintain 26 psi pressure on the nosewheel tire and 23 psi pressure on the main wheel tires. Inflate with the needle stowed in the map compartment, following instructions on the needle container. Remove oil and grease from the tires with soap and water, periodically inspect them for cuts, bruises and wear.

SHIMMY DAMPENER (11) — Fill with MIL-H-5606 (red) hydraulic fluid through the plug on top of the barrel.

NOSE GEAR SHOCK STRUT (12) — Service in accordance with instructions on page 5-5.

cap on the filler valve and check the pressure wtih a tire gage, adding or removing air as necessary to obtain 35 psi. Air may be bled out by depressing the stem of the valve core.

Use the following procedure for checking the strut fluid level:

(1) Working through the left cowl access door, remove the valve cap and depress the valve core stem to release all air pressure.
(2) Using a ¾-inch box-end or deep-socket wrench, unscrew the filler valve and remove it.
(3) Completely compress the strut, so the stops contact the outer barrel. The fluid level should be even with the bottom of the valve hole. If it is not, add MIL-H-5606 (red) hydraulic fluid.
(4) Completely extend the strut and replace the filler valve.
(5) With the strut fully extended and the wheel clear of the ground, inflate the strut to 35 psi. Replace the valve cap.

AIRPLANE FILE.

There are miscellaneous data, information and licenses that are a part of the airplane file. The following is a check list for that file. In addition, a check should be made of the latest Civil Air Regulations to insure that all data requirements are met.

A. To be carried in the airplane at all times:
   (1) Aircraft Registration Certificate (Form ACA 500A).
   (2) Aircraft Airworthiness Certificate (Form ACA 1362).
   (3) Airplane Radio Station License (if transmitter is installed).
   (4) Airplane Log Book.
   (5) Engine Log Book.

B. To be maintained but not necessarily carried in the airplane at all times.
   (1) Weight and Balance report or latest copy of the Repair and Alteration Form 337.
   (2) Equipment List.
   (3) A form containing the following information: Model, Registration Number, Factory Serial Number, Engine Number and Key Numbers (duplicate keys are available through your Cessna dealer).

Most of the requirements listed under items A and B, are requirements of the United States Civil Air Regulations. Since the requirements of other nations may differ from this list, owners of airplanes registered in other countries should check with their own aviation officials to determine their individual requirements.

INSPECTION.

With your airplane you will receive an Owner's Service Policy. This policy has coupons attached to it which entitle you to a no-charge initial inspection and a no-charge 100 hour inspection. If you take delivery from your Dealer, he will perform the initial inspection before delivery of the airplane to you. If you pick up the airplane at the factory, plan to take your Cessna 175 to your Dealer reasonably soon after you take delivery on it. This will permit him to check it over and to make any other minor adjustments that may appear necessary. Also plan an inspection by your Dealer at 100 hours or 90 days whichever comes first. This inspection also is performed by your Dealer for you at no charge. While these important inspections will be performed for you by any Cessna Dealer, in most cases you will prefer to have the Dealer from whom you purchase the airplane accomplish this work for you.

The Civil Air Regulations require all airplanes to have a periodic (annual) inspection as prescribed by the administrator, by a person designated by the administrator, and in addition, 100 hour periodic inspections made by an "appropriately rated mechanic" if the airplane is flown for hire. The Cessna Aircraft Company recommends the 100 hour periodic inspection for Model 175 airplanes. The procedure for this 100 hour inspection has been carefully worked out by the factory and is followed by the Cessna Dealer organization. The complete familiarity of the Cessna Dealer organization with Cessna equipment and with Cessna procedures provides the highest type of service possible at lowest cost.

Time studies of the 100 hour inspection at the factory and in the field have developed a standard flat rate charge for this inspection at any Cessna Dealer. Points which the inspection reveals require modification or repairs will be brought to the owner's attention by the Dealer and quotations or charges will be made accordingly. The inspection charge does not include the oil required for the oil change.

Every effort is made to attract the best mechanics in each community to Cessna service facilities. Many Dealers' mechanics have attended Cessna Aircraft Company schools and have received specialized instruction in maintenance and care of Cessna airplanes. Cessna service instruction activity in the form of service bulletins and letters is constantly being carried on so that when you have your Cessna inspected and serviced by Cessna Dealers' mechanics, the work will be complete and done in accordance with the latest approved methods.

Cessna Dealers maintain stocks of genuine Cessna parts and service facilities consistent with the demand.

Your Cessna Dealer will be glad to give you current price quotations on all parts that you might need and advise you on the practicability of parts replacement versus repairs that from time to time might be necessary.

DEALER FOLLOW-UP SYSTEM.

Your Cessna Dealer has an owner follow-up system to notify you when he receives information that applies to your Cessna. In addition, if you wish, you may choose to receive similar notification directly from the Cessna Service Department. A subscription card is supplied in your airplane file for your use, should you choose to request this service. Your Cessna Dealer will be glad to supply you with details concerning these follow-up programs, and stands ready through his Service Department to supply you with fast, efficient, low cost service.

SECTION VI

OPERATIONAL DATA

THE OPERATIONAL DATA shown on the following pages are compiled from actual tests with airplane and engine in good condition and using average piloting technique and best power mixture. You will find this data a valuable aid when planning your flights. However, inasmuch as the number of variables included precludes great accuracy, an ample fuel reserve should be provided. The range performance shown makes no allowance for wind, navigational error, pilot technique, warm-up, take-off, climb, etc. All of these factors must be considered when estimating reserve fuel.

To realize the maximum usefulness from your 175, take advantage of the high cruising speeds. However, if range is of primary importance, it may pay you to fly at a low cruising rpm thereby increasing your range and allowing you to make the trip non-stop with ample fuel reserve. Use the range tables on pages 6-3 and 6-4 to solve flight planning problems of this nature.

In the tables, range and endurance are given for lean mixture, from 2500 feet to 12,500 feet and for rich mixture at altitudes of 2,500 feet and 5,000 feet. All figures are based on zero wind, 42 gallons of fuel for cruise, McCauley 8467 propeller, 2350 pounds gross weight, and standard atmospheric conditions. For lean mixture figures, mixture is leaned to maximim rpm. Allowances for fuel reserve, headwinds, take-offs and climb, and variations in mixture leaning technique should be made and are in addition to those shown on the charts. Other indeterminate variables such as carburetor metering-characteristics, engine and propeller conditions, and turbulence of the atmosphere may account for variations of 10% or more in maximum range.

175 Airspeed Correction Table 175

— FLAPS UP —

IAS	40	50	60	70	80	90	100	110	120	130	140	150
TIAS	57	61	67	74	83	91	100	110	119	128	137	146

— FLAPS DOWN —

IAS	40	50	60	70	80	90	100					
TIAS	52	58	65	74	83	92	101					

Figure 15. Airspeed Correction Table

TAKE-OFF DATA

TAKE-OFF DISTANCE WITH FLAPS 20° FROM HARD SURFACE RUNWAY

GROSS WEIGHT LBS.	IAS AT 50 FT. MPH	HEAD WIND MPH	AT S.L. & 59°F		AT 2500 FT. & 50°F		AT 5000 FT. & 41°F		AT 7500 FT. & 32°F	
			GROUND RUN	TO CLEAR 50 FT. OBS.	GROUND RUN	TO CLEAR 50 FT. OBS.	GROUND RUN	TO CLEAR 50 FT. OBS.	GROUND RUN	TO CLEAR 50 FT. OBS.
1700	51	0	345	680	410	805	490	940	595	1130
		15	180	420	220	505	265	600	335	735
		30	65	210	85	265	110	320	145	405
2000	55	0	495	950	595	1120	715	1330	870	1560
		15	270	625	335	725	410	880	515	1045
		30	110	330	145	405	185	505	245	615
2350	60	0	735	1340	875	1595	1040	1980	1295	2570
		15	420	875	515	1065	630	1345	800	1720
		30	190	535	245	630	315	820	415	1090

Note..... INCREASE DISTANCES 10% FOR EACH 25°F ABOVE STANDARD TEMPERATURE FOR PARTICULAR ALTITUDE.

CLIMB DATA

GROSS WEIGHT LBS.	AT S.L. & 59°F			AT 5000 FT. & 41°F			AT 10000 FT. & 23°F			AT 15000 FT. & 5°F		
	BEST CLIMB IAS MPH	RATE OF CLIMB FT/MIN	GALS OF FUEL USED	BEST CLIMB IAS MPH	RATE OF CLIMB FT/MIN	FROM S.L. FUEL USED	BEST CLIMB IAS MPH	RATE OF CLIMB FT/MIN	FROM S.L. FUEL USED	BEST CLIMB IAS MPH	RATE OF CLIMB FT/MIN	FROM S.L. FUEL USED
1700	75	1395	1.2	72	1090	1.9	70	790	2.7	68	475	3.7
2000	79	1105	1.2	77	840	2.2	75	575	3.2	73	310	4.6
2350	84	850	1.2	82	615	2.5	80	380	4.1	79	140	6.6

Note..... FLAPS UP, FULL THROTTLE, MIXTURE LEANED FOR SMOOTH ENGINE OPERATION ABOVE 5,000 FT. FUEL USED INCLUDES WARM-UP AND TAKE-OFF ALLOWANCES.

Figure 16. Take-Off and Climb Chart

SKYLARK CRUISE PERFORMANCE

Standard Atmospheric Conditions
Gross Weight-2350 pounds

RICH MIXTURE

Zero Wind
42 Gallons of Fuel

ALT	RPM	% BHP	TAS	Gal./ Hour	End. Hours	Mi./ Gal.	Range Miles
2500	3000	74	135	12.0	3.5	11.3	475
	2900	67	130	10.8	3.9	12.0	505
	2800	60	125	9.7	4.3	12.9	540
	2700	54	119	8.7	4.8	13.7	575
	2600	48	114	7.8	5.4	14.6	615
	2500	43	108	7.1	5.9	15.2	640
	2400	38	103	6.5	6.5	15.9	665
5000	3050	72	137	12.3	3.4	11.1	470
	3000	69	135	11.6	3.6	11.6	490
	2900	62	129	10.3	4.1	12.5	525
	2800	56	124	9.3	4.5	13.3	560
	2700	50	118	8.3	5.1	14.2	600
	2600	45	113	7.6	5.5	14.9	625
	2500	40	108	6.9	6.1	15.7	660
	2400	36	103	6.3	6.7	16.3	685

LEAN MIXTURE

ALT	RPM	% BHP	TAS	Gal./ Hour	End. Hours	Mi./ Gal.	Range Miles
2500	3000	74	135	10.6	4.0	12.7	535
	2900	67	130	9.6	4.4	13.5	570
	2800	60	125	8.8	4.8	14.2	595
	2700	54	119	8.0	5.3	14.9	625
	2600	48	114	7.3	5.8	15.6	655
	2500	43	108	6.7	6.3	16.1	680
	2400	38	103	6.2	6.8	16.6	700
5000	3050	72	137	10.3	4.1	13.3	560
	3000	69	135	9.9	4.2	13.6	570
	2900	62	129	9.0	4.7	14.3	600
	2800	56	124	8.3	5.1	15.0	630
	2700	50	118	7.6	5.5	15.5	655
	2600	45	113	7.0	6.0	16.2	680
	2500	40	108	6.3	6.7	17.2	720
	2400	36	103	5.8	7.2	17.8	745
7500	3100	70	139	10.1	4.2	13.8	580
	3000	64	133	9.2	4.6	14.5	610
	2900	57	128	8.5	4.9	15.1	635
	2800	52	123	7.8	5.4	15.8	665
	2700	47	117	7.0	6.0	16.7	705
	2600	42	112	6.6	6.4	17.0	715
	2500	38	107	6.0	7.0	17.8	750
10000	3200	71	143	10.2	4.1	14.0	590
	3100	65	138	9.4	4.5	14.7	620
	3000	59	132	8.6	4.9	15.4	645
	2900	53	127	8.0	5.3	15.9	665
	2800	48	122	7.3	5.8	16.7	705
	2700	44	117	6.9	6.1	17.0	715
	2600	40	111	6.2	6.8	17.9	750
	2500	36	106	5.8	7.2	18.3	770
12500	3100	60	136	8.8	4.8	15.5	650
	3000	55	131	8.1	5.2	16.2	680
	2900	50	126	7.5	5.6	16.8	710
	2800	45	121	7.0	6.0	17.3	725
	2700	41	115	6.4	6.6	18.0	755
	2600	38	111	6.0	7.0	19.5	780

For 175 performance, subtract approximately 2 miles per hour from the maximum cruise speeds shown.

Figure 17. Cruise Performance Chart

SKIPLANE

CRUISE PERFORMANCE WITH RICH MIXTURE

STANDARD ATMOSPHERE CONDITIONS
ZERO WIND

GROSS WEIGHT..2350 POUNDS
42 GALLONS OF FUEL

ALTITUDE	RPM	%BHP	TAS	GAL PER HR	END. HRS	MILES PER GAL	RANGE MILES
2500	3000	74	123	12.9	3.3	9.5	400
	2900	67	117	11.5	3.7	10.2	425
	2800	61	112	9.8	4.3	11.4	480
	2700	56	107	9.0	4.7	11.9	500
	2600	51	102	8.2	5.1	12.4	525
	2500	47	96	7.6	5.5	12.6	530
	2400	44	89	7.1	5.9	12.5	525
5000	3050	73	124	12.4	3.4	10.0	420
	3000	69	121	11.8	3.6	10.3	430
	2900	63	116	10.6	4.0	10.9	460
	2800	58	111	9.6	4.4	11.6	485
	2700	53	106	8.8	4.8	12.0	505
	2600	49	100	8.2	5.1	12.2	515
	2500	46	94	7.6	5.5	12.4	520
	2400	43	78	7.2	5.8	10.8	455

CRUISE PERFORMANCE WITH LEAN MIXTURE

ALTITUDE	RPM	%BHP	TAS	GAL PER HR	END. HRS	MILES PER GAL	RANGE MILES
2500	3000	74	123	10.6	4.0	11.6	490
	2900	67	118	9.6	4.4	12.3	515
	2800	61	112	8.8	4.8	12.7	535
	2700	56	107	8.2	5.1	13.1	550
	2600	51	102	7.6	5.5	13.4	565
	2500	47	96	7.1	5.9	13.5	570
	2400	44	89	6.7	6.3	13.3	560
5000	3050	73	124	10.4	4.0	11.9	500
	3000	69	121	9.9	4.2	12.2	515
	2900	63	116	9.1	4.6	12.7	535
	2800	58	111	8.4	5.0	13.2	555
	2700	53	106	7.8	5.4	13.6	570
	2600	49	100	7.3	5.8	13.7	575
	2500	46	94	6.9	6.1	13.6	570
	2400	43	78	6.6	6.4	11.8	495
7500	3100	71	125	10.1	4.2	12.4	520
	3000	65	120	9.3	4.5	12.9	540
	2900	60	115	8.6	4.9	13.4	565
	2800	55	110	8.1	5.2	13.6	570
	2700	51	104	7.6	5.5	13.7	575
	2600	48	97	7.2	5.8	13.5	565
	2500	45	82	6.8	6.2	12.1	505
10000	3200	72	129	10.2	4.1	12.7	538
	3100	67	124	9.5	4.4	13.0	550
	3000	61	119	8.8	4.8	13.5	570
	2900	57	114	8.3	5.1	13.8	580
	2800	53	108	7.8	5.4	13.9	580
	2700	49	101	7.4	5.7	13.7	575
	2600	47	86	7.1	5.9	12.1	510
	2500	45	72	6.8	6.2	10.6	445
12500	3100	63	123	9.0	4.7	13.7	575
	3000	58	117	8.5	4.9	13.8	580
	2900	54	111	8.0	5.3	13.9	585
	2800	51	104	7.6	5.5	13.7	575
	2700	49	88	7.3	5.8	12.1	505
	2600	47	74	7.1	5.9	10.4	440

Figure 18. Skiplane Cruise Performance

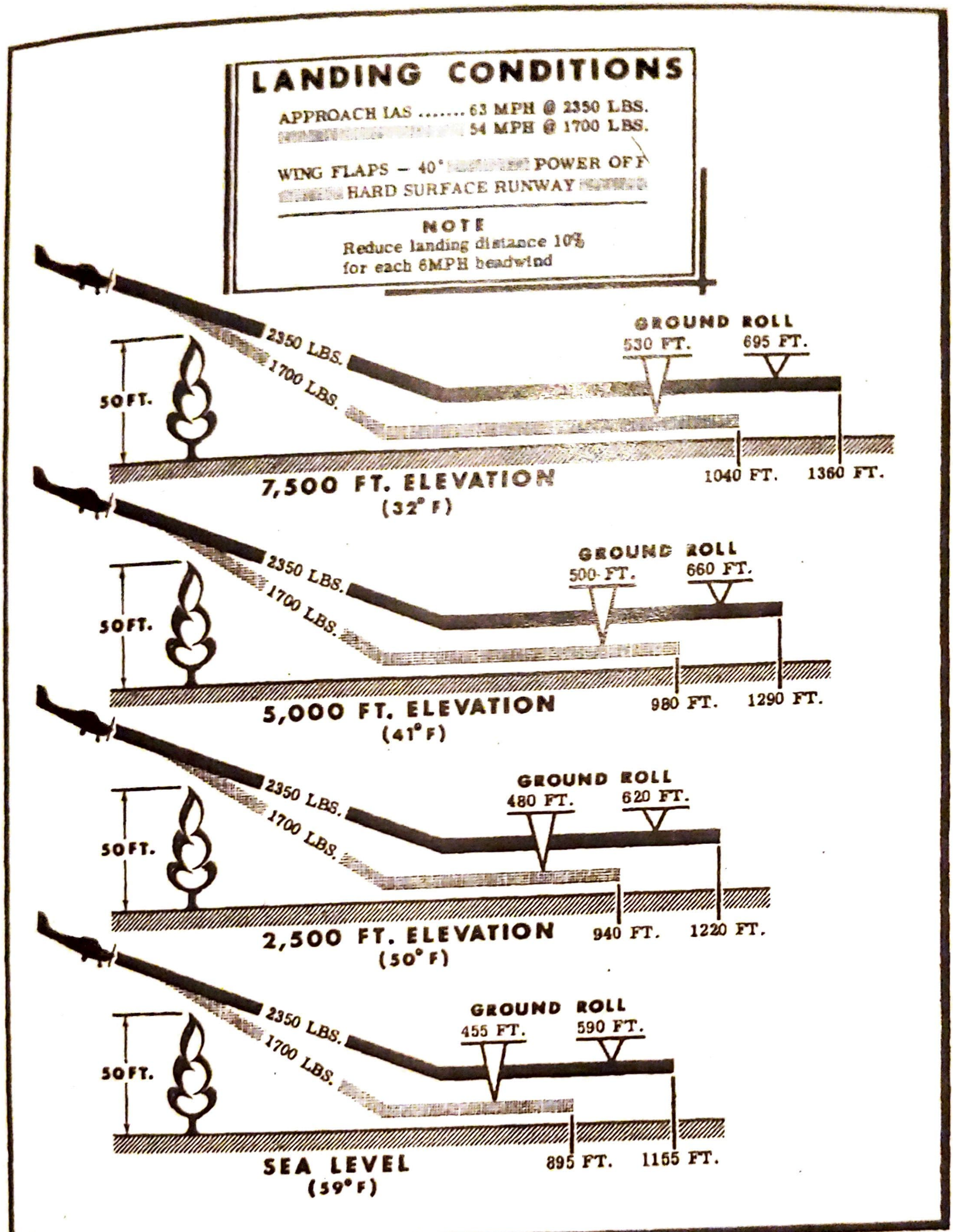


Figure 19. Landing Diagram

ALPHABETICAL INDEX

175 AND Skylark

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