

Note

Visually check aircraft for general condition during walk-around inspection. In cold weather, remove even small accumulations of frost, ice or snow from wing, tail and control surfaces. Also, make sure that control surfaces contain no internal accumulations of ice or debris. If night flight is planned, check operation of all lights, and make sure a flashlight is available.

- ① a. Remove control wheel lock.
- b. Check ignition switch OFF.
- c. Turn on master switch and check fuel quantity indicators; then turn off master switch.
- d. Check fuel selector valve handle on BOTH.
- e. Check baggage door for security. Lock with key if children are to occupy child's seat.

Figure

- ② a. Remove rudder gust lock, if installed.
- b. Disconnect tail tie-down.
- c. Check control surfaces for freedom of movement and security.
- ③ a. Check aileron for freedom of movement and security.
- ④ a. Disconnect wing tie-down.
- b. Check main wheel tire for proper inflation.
- c. Visually check fuel quantity; then check fuel filler cap secure.
- ⑤ a. Check oil level. Do not operate with less than six quarts. Fill to eight quarts for extended flights.
- b. Before first flight of day and after each refueling, pull out strainer drain knob for about four seconds to clear fuel strainer of possible water and sediment. Check strainer drain closed. If water is observed, there is a possibility that the fuel tank sumps contain water. Thus, the fuel tank sump drain plugs and fuel selector valve drain plug should be removed to check for the presence of water.
- c. Check propeller and spinner for nicks and security.
- d. Check landing light for condition and cleanliness.
- e. Check carburetor air filter for restrictions by dust or other foreign matter.
- f. Check nose wheel strut and tire for proper inflation.
- g. Disconnect tie-down rope.
- h. Inspect flight instrument static source opening on side of fuselage for stoppage (left side only).
- ⑥ a. Check main wheel tire for proper inflation.
- b. Visually check fuel quantity, then check fuel filler cap secure.
- ⑦ a. Remove pitot tube cover, if installed, and check pitot tube opening for stoppage.
- b. Check fuel tank vent opening for stoppage.
- c. Check stall warning vent opening for stoppage.
- d. Disconnect wing tie-down.
- ⑧ a. Check aileron for freedom of movement and security.

1-1.

BEFORE STARTING THE ENGINE.

- (1) Seats, Seat Belts and Shoulder Harnesses -- Adjust and lock.
- (2) Fuel Selector Valve -- BOTH.
- (3) Brakes -- Test and set.
- (4) Radios and Electrical Equipment -- OFF.

STARTING THE ENGINE.

- (1) Mixture -- Rich.
- (2) Carburetor Heat -- Cold.
- (3) Primer -- 2 - 6 strokes as required (none if engine is warm).
Close and lock primer.
- (4) Throttle -- Open 1/8".
- (5) Master Switch -- ON.
- (6) Propeller Area -- Clear.
- (7) Ignition Switch -- START (release when engine starts).
- (8) Oil Pressure -- Check.

BEFORE TAKE-OFF.

- (1) Parking Brake -- Set.
- (2) Flight Controls -- Check for free and correct movement.
- (3) Fuel Selector Valve -- BOTH.
- (4) Elevator Trim Control Wheel -- TAKE-OFF setting.
- (5) Throttle Setting -- 1700 RPM.
- (6) Engine Instruments and Ammeter -- Check.
- (7) Suction Gage -- Check (4.6 to 5.4 inches of mercury).
- (8) Magnetos -- Check (RPM drop should not exceed 125 RPM on either magneto or 50 RPM differential between magnetos).
- (9) Carburetor Heat -- Check operation.
- (10) Flight Instruments and Radios -- Set.
- (11) Optional Autopilot or Wing Leveler -- Off.
- (12) Cabin Doors and Window -- Closed and locked.

TAKE-OFF.

NORMAL TAKE-OFF.

- (1) Wing Flaps -- 0°.
- (2) Carburetor Heat -- Cold.

- (3) Power -- Full throttle.
- (4) Elevator Control -- Lift nose wheel at 60 MPH.
- (5) Climb Speed -- 75 to 85 MPH.

MAXIMUM PERFORMANCE TAKE-OFF.

- (1) Wing Flaps -- 0°.
- (2) Carburetor Heat -- Cold.
- (3) Brakes -- Apply.
- (4) Power -- Full throttle.
- (5) Brakes -- Release.
- (6) Airplane Attitude -- Slightly tail low.
- (7) Climb Speed -- 68 MPH until all obstacles are cleared.

CLIMB.

- (1) Airspeed -- 80 to 90 MPH.

NOTE

If a maximum performance climb is necessary, use speeds shown in the Maximum Rate-Of-Climb Data chart in Section VI.

- (2) Power -- Full throttle.
- (3) Mixture -- Full rich (mixture may be leaned above 3000 feet).

CRUISING.

- (1) Power -- 2200 to 2700 RPM.

NOTE

Maximum cruise RPM varies with altitude. For details, refer to Section IV.

- (2) Elevator Trim Control Wheel -- Adjust.
- (3) Mixture -- Lean for maximum RPM.

LET-DOWN.

- (1) Mixture -- Rich.
- (2) Power -- As desired.
- (3) Carburetor Heat -- As required to prevent carburetor icing.

BEFORE LANDING.

- (1) Fuel Selector Valve -- BOTH
- (2) Mixture -- Rich.
- (3) Carburetor Heat -- Apply full heat before closing throttle.
- (4) Wing Flaps -- As desired.
- (5) Airspeed -- 70 to 80 MPH (flaps up), 65 to 75 MPH (flaps down).

BALKED LANDING (GO-AROUND).

- (1) Power -- Full throttle.
- (2) Carburetor Heat -- Cold.
- (3) Wing Flaps -- Retract to 20°.
- (4) Upon reaching an airspeed of approximately 65 MPH, retract flaps slowly.

NORMAL LANDING.

- (1) Touchdown -- Main wheels first.
- (2) Landing Roll -- Lower nose wheel gently.
- (3) Braking -- Minimum required.

AFTER LANDING.

- (1) Wing Flaps -- Up.
- (2) Carburetor Heat -- Cold.

SECURING AIRCRAFT.

- (1) Parking Brake -- Set.
- (2) Radios and Electrical Equipment -- OFF.
- (3) Mixture -- Idle cut-off (pulled full out).
- (4) Ignition and Master Switch -- OFF.
- (5) Control Lock -- Installed.

Section II

DESCRIPTION AND OPERATING DETAILS

The following paragraphs describe the systems and equipment whose function and operation is not obvious when sitting in the aircraft. This section also covers in somewhat greater detail some of the items listed in Check List form in Section I that require further explanation.

FUEL SYSTEM.

Fuel is supplied to the engine from two tanks, one in each wing. With the fuel selector valve on BOTH, the total usable fuel for all flight conditions is 38 gallons for the standard tanks and 48 gallons for the optional long range tanks.

Fuel from each wing tank flows by gravity to a selector valve. Depending upon the setting of the selector valve, fuel from the left, right, or both tanks flows through a fuel strainer and carburetor to the engine induction system.

The fuel selector valve should be in the BOTH position for take-off, climb, landing, and maneuvers that involve prolonged slips or skids. Operation from either LEFT or RIGHT tank is reserved for cruising flight.

NOTE

With low fuel (1/8th tank or less), a prolonged steep descent (1500 feet or more) with partial power, full flaps, and 80 MPH or greater should be avoided due to the possibility of the fuel tank outlets being uncovered, causing temporary fuel starvation. If starvation occurs, leveling the nose should restore power within 20 seconds.

NOTE

When the fuel selector valve handle is in the BOTH position in cruising flight, unequal fuel flow from each

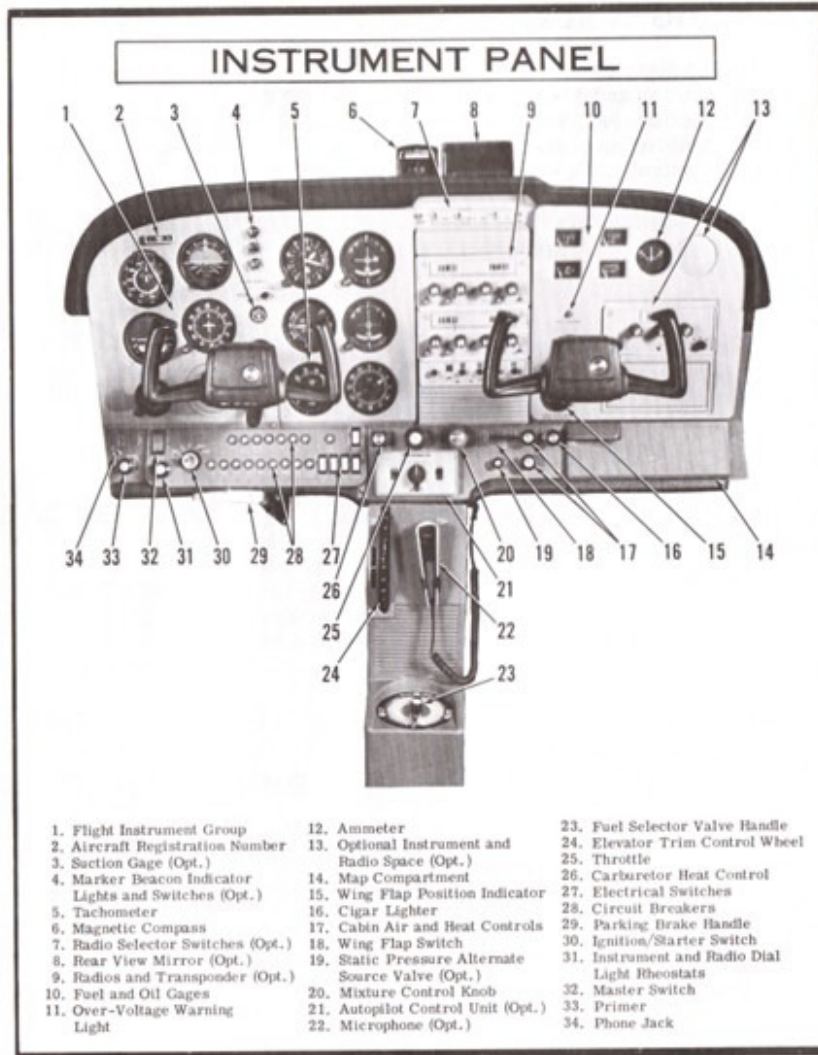


Figure 2-1.