Civil Air Patrol

Cessna 172P (Air Plains 180HP)
CVD: 29 Jan 20 (GPS)

Preflight Cabin

1. AIF……Review for Airworthiness
2. POH……..……..Available to Pilot
3. GPS Cockpit Ref Guide…….…… Available to Pilot
4. Documents..... AROW in airplane
5. Parking Brake .....Set
6. Hobbs & Tach .....Record
7. Fire Extinguisher Charged & Secure
8. Control/Avionics Lock .....Remove
9. Ignition Switch.....Off
10. Avionics Power Switch .....Off
11. Master Switch (ALT and BAT)...On

Warning
When turning on the master switch, using an external power source, or pulling the propeller through by hand, treat the propeller as if the ignition switch were on. Do not stand, nor allow anyone else to stand, within the arc of the propeller, since a loose or broken wire, or a component malfunction, could cause the propeller to rotate.

12. Wing Flaps..... 30º
13. Fuel Quantity (L&R)..... Check
14. Low Vac Warning Light...Check On
15. Avionics Power Switch……On
16. Check Avionics Fan.... ..for Audible Noise
17. Avionics Power Switch……Off
18. Pitot Heat...Remove Cover & Check
19. Lights..... Check
20. Master Switch (Alt & BAT).....Off
21. Static Pressure Alternate Source Valve (if installed).....Off
22. Fuel Selector Valve ..... Both

Preflight Empennage

1. Baggage Door..... .Check Secured
2. Rudder Gust Lock .....Remove
3. Tail Tie-Down ..... Disconnect
4. Control Surfaces .....Check

Preflight Right Wing trailing edge

1. Right Flap.....Check
2. Right Aileron.....Check

Preflight Right Wing

1. Right Wingtip & Light.....Check
2. Wing Tie Down..... Disconnect
3. Right Main Wheel Tire & Brake .....Check
4. Right Wheel Chock……Remove
5. Right Fuel Sump .....Drain
6. Right Fuel Quantity . Visually Check
7. Fuel Filler Cap.....Secure, vent unobstructed

Nose

1. Engine Oil Dipstick/Filler Cap.....…. Check oil level (5-8 Quarts) and secure.
2. Fuel Strainer Drain Knob….. Pullout to Drain
3. Alternator Belt…….Check Condition
4. Prop & Spinner.....Check
5. Engine Cooling Air Inlets…….Clear
6. Landing Lights (if in nose).....Check
7. Carburetor Air Filter.....Check
8. Nose Wheel, Strut & Tire .....Check
9. Towbar & Chocks……..Removed and Stowed
10. Nose Tie-Down..... Disconnect
11. Static Source .....Check (Left side)
12. Windscreen.....Check/Clean

Preflight Left Wing

1. Left Main Wheel Tire & BrakeCheck
2. Left Wheel Chock……Remove
3. Left Fuel Sump.....Drain
4. Left Fuel Quantity.... Visually Check
5. Fuel Filler Cap.....Secure

Preflight Left Wing Leading Edge

1. Pitot Tube Cover.....Confirm Removed
2. Left Fuel Vent..... Check Clear
3. Stall Warning .....Check clear, then check warning horn by applying suction through a clean handkerchief over the vent hole.
4. Wing Tie-Down..... Disconnect
5. Landing & Left Wingtip & Lights .....Check

Preflight Left Wing Trailing Edge

1. Left Aileron .....Check
2. Left Flap.....Check

Before Starting Engine

1. Preflight Inspection.....Complete

PASSENGER BRIEF

1. **Seat Belts / Shoulder Harness**
2. **Personal Electronic Devices off**
3. **Air Vents / Comfort**
4. **Fire Extinguisher Location / Operation**
5. **Emergency Procedures & Exits**

MISSION BRIEF

1. **Mission Objective**
2. **Destination, WX, Route, Alt, ETE**
3. **NOTAMS**
4. **Crew Coordination & CRM**
5. **Sterile Cockpit Procedures**
6. **Cockpit Layout**
7. **Intercom & Radio Usage**
8. **Seats, Seatbelts, Doors**
9. **Emergency Action & Equipment**

2. Passenger Brief.....Complete
3. Sterile Cockpit……..Comply
4. Seats / Belts / Shoulder Harness Adjust and Lock
5. Brakes……Test and Set
6. Avionics Power Switch ..... Off

Caution
The avionics power switch must be OFF during engine start to prevent possible damage to avionics.

7. Electrical Equipment..... Off
8. Circuit Breakers.....Check In
9. Autopilot (If Installed)……Off
10. Fuel Selector Valve…….. Both

Starting Engine

1. Prime .. As Required (2 to 6 strokes; none if engine is warm)
2. Carburetor Heat.....Cold
3. Throttle ..... Open 1/8 Inch
4. Mixture .....Rich
5. Flashing Beacon & Nav Lights ... On
6. Propeller Area..... Clear
7. Master Switch ..... On
8. Ignition Switch..... Start
9. Throttle.....800 to 1000 RPM
10. Oil Pressure .....Check
11. Starter ..... Check Disengaged
12. Avionics Power Switch..... On
13. Radios ..... On
14. PFD/MFD/GPS..... On (if installed)
15. Taxi Lights.....As Required
16. Flaps ..... Up
17. ATIS / AWOS ..... Copy
18. Altimeter (PFD & STDBY)…… Set (Verify Within 75' of Field Elevation)
19. PFD/MFD & GPS...Check LRUs (if installed)
20. Clnc Del/Gnd Control..... Contact
21. Transponder.... Code/Flight ID/ALT

Taxi

1. Brakes.....Test
2. Heat / Vents / Defrost .. As Required
3. Attitude Indicator.....Verify Proper Operation
4. Turn Coordinator.....Verify Proper Operation
5. H.I. & Compass.....Verify Proper Operation

Before Takeoff - Run-Up

1. Parking Brake ..... Set
2. Seats / Belts / Shoulder Harness .....Check Secure
3. Cabin Doors & Windows…....Closed and Locked
4. Flight Controls..... Free & Correct
5. Flight Instruments & H.I. .....Check
6. PFD/MFD/GPS .....Set (if installed)
7. Fuel Quantity .....Check
8. Mixture .....Rich
9. Fuel Selector Valve .. Recheck Both
10. Elevator & Rudder Trim ..... Set for Takeoff
11. Throttle .....1700 RPM
12. Magnetos……..Max Drop 125 RPM ……& Max 50 RPM differential
13. Carb Heat..... Check for RPM Drop
14. Suction Gauge .....Check
15. Engine Inst & Ammeter .....Check
16. Throttle .....Idle Check, then 800 to 1000 RPM
17. Throttle Friction Lock .....Adjust

18. Strobe Lights/Pulse Lights (If installed) .....As Desired
19. Radios……..Set
20. Transponder ..... Set
21. Autopilot (If Installed)……Off
22. Flaps set for Takeoff..... 0°-10°
23. Primer ..... In & Locked
24. Carb Heat ..... Cold
25. Takeoff Briefing .....Complete
26. Doors & Windows.....Latched
27. Lights ..... Set
28. Time.....Record
29. Parking Brake ..... Release

Takeoff

1. Flaps ..... 0°-10°
2. Carb Heat.....Cold
3. Throttle .....Full Open
4. Mixture ..... Full Rich or Max Power
5. Engine Instruments ..... In Green
6. Rotate..... 55 KIAS
7. Climb Speed ..... 75 to 85 KIAS
   - Short Field T.O. ... ..10° Flaps / 57 KIAS Until Clear
   - Soft Field T.O… ..... 10° Flaps / Ground Effect ASAP
8. Wing Flaps..Retract (above 70 KIAS)

Enroute Climb

1. Airspeed..... 75 - 85 KIAS Normal

Note: If a maximum performance climb is necessary, use speeds shown in the Rate of Climb chart in POH Section 5.

2. Throttle .....Full Open
3. Fuel Selector Valve..... Both
4. Mixture ..... Full Rich or Max RPM
5. Engine Instruments ..... Check

Cruise

1. Power . 2100-2700 RPM (no more than 75% is recommended)
2. Elevator & Rudder Trim ..... Adjust
3. Mixture ..... Lean
4. Engine Instruments / Fuel ..... Check
5. Heading Indicator……Check
6. Lights.....As Required
7. Flight Plan ..... Activate as Required

Descent

1. Heading Indicator……..Check
2. Altimeter .....Set
3. Fuel Selector Valve .....Both
4. Lights..... As Required
5. Engine Instruments .....Check
6. Mixture.....…Adjust for Smooth Operation (full rich for idle power)
7. Carb Heat ... Full Heat as Required

Before Landing

1. Seat, Seat Belts, Shoulder Harness ……Secure
2. Fuel Selector Valve .....Both
3. Mixture.....Rich
4. Carb Heat.... ..On (Apply Full Heat Before Closing Throttle)
5. Autopilot (If installed)……Off
6. Airspeed ...65-75 KIAS (Flaps Up)
7. Wing Flaps . As Desired (Below 85 KIAS)(Maximum Flap Travel is 30º)
8. Airspeed ....60-70 KIAS (Flaps Dn)
9. Trim ..... Adjust
10. Touchdown..... Main Wheel First
11. Landing Roll .. Lower Nose Wheel Gently
12. Braking ..... Minimum required

Short Field Landing

1. Airspeed ...65-75 KIAS (Flaps Up)
2. Wing Flaps ... 30º (below 85 KIAS)
3. Airspeed ...Maintain 62 KIAS (Until Flare)
4. Trim ..... Adjust
5. Power…….Reduce to idle after clearing obstacle
6. Touchdown..... Main Wheels First
7. Brakes ..... Apply Heavily
8. Wing Flaps ..... Retract

Balked Landing

1. Throttle ..... Full Open
2. Carb Heat.....Cold
3. Wing Flaps .....20° (Immediately)
4. Climb Speed.....60 KIAS
5. Wing Flaps …10º (Until Obstacles are Cleared)
6. Wing Flaps….Retract (After reaching a safe altitude and 65 KIAS)

After Landing (Clear of Runway)

1. Wing Flaps..... Up
2. Carb Heat ..... Cold
3. Lights .....As Required
4. Mixture.....Lean
5. Pitot Heat..... Off

Securing Aircraft

1. Parking Brake ..... Set
2. Transponder ..... 1200/Flight ID
3. ELT (121.5)…Confirm Not Activated
4. Throttle ..... Idle
5. Avionics Power & Switches ..... Off
6. Magnetos..... Check for Ground
7. Mixture ..... Idle Cut Off
8. Sterile Cockpit……..Terminate
9. Ignition Switch……..Off
10. Master Switch (ALT & BAT).... Off
11. Control/Avionics Lock ..... Install
12. Parking Brake ..... Off
13. Fuel Selector Valve.. Left or Right
14. Pitot Tube Cover…Install when cool.
15. Hobbs & Tach ..... Record
16. Aircraft..... Secured & Locked
17. Flight Plan .....Closed

V Speeds and Specs

- X-Wind (Max Demo'd) .....15 Knots
- Vr Rotation Speed .....55 KIAS
- Vx Best Angle Climb.....62 KIAS
- Vy Best Rate Climb .....76 KIAS
- Vso Stall w/ Flaps.....40 KIAS
- Vs1 Stall w/o Flaps.....50 KIAS
- Best Glide (2550 Lbs).....65 KIAS
- Va Max Abrupt Ctrl (2550 Lbs)..105 KIAS
- Va Max Abrupt Ctrl (2150 Lbs).. 95 KIAS
- Va Max Abrupt Ctrl (1750 Lbs)... 85 KIAS
- Vno Max Structural Cruise ..127 KIAS
- Vne Never Exceed .....158 KIAS
- Vfe 10°-Full Flaps.....85 KIAS
- Max Window Open Speed.158 KIAS

V Speeds and Specs are based on sea level. Consult the Air Plains Services, Corp. FAA Approved Airplane Flight Manual Supplement for V speed and Specs for operations above sea level.

General...

- EMERGENCY..... 121.50
- Unicom.....122.70-122.80-122.95 123.00-123.05
- Multicom 122.90
- Flight Service ..... 122.20 (Most Common) 122.10-122.60-123.60
- Air to Air 122.75-122.85-123.45

Transponder Codes

- 1200..... VFR
- 7500.....HIJACK
- 7600..... LOST COMMS
- 7700..... EMERGENCY

Aircraft Information

- Gross Weight Capacity..... 2550 (Takeoff) ..... 2550 (Landing)
- Engine..... Lycoming O-360-A4M
- Max Power.....180 BHP
- Max Engine Speed ..... 2700 RPM
- Max Continuous …….2540 RPM
- Fuel Type.....100LL (Blue)
- Fuel Capacity (Standard)…40 Gal Usable
- Fuel Capacity (Long Range)..50 Gal Usable
- Fuel Capacity (Integral)….62 Gal Usable
- Oil Type .....Aviation Grade
- Oil Capacity .....8 Qts (Minimum 5)
- Electrical .....24 - 28 Volt / 60 Amp
- Tire Pressure: Nose-45 PSI / Main-38 PSI

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EMERGENCY PROCEDURES

Cessna: C172P (Air Plains 180 HP)
CVD: 29 Jan 20 (GPS)

Engine Failure During Takeoff Roll

1. **Throttle .....Idle**
2. **Brakes.....Apply**
3. Wing Flaps..... Retract
4. Mixture.....Idle Cut Off
5. Ignition Switch.....Off
6. Master Switch……Off

Engine Failure Immediately After Takeoff

1. **Airspeed .....**
   70 KIAS (Flaps Up)
   65 KIAS (Flaps Down)
2. Mixture.....Idle Cut Off
3. Fuel Selector …Off (Push & Rotate)
4. Ignition ..... Off
5. Wing Flaps..... As Required
6. Master Switch ..... Off

Engine Failure During Flight (Restart)

1. **Airspeed.....75 KIAS**
2. **Carb Heat .....On**
3. **Fuel Selector.....Both**
4. Mixture .....Rich
5. Ignition.....Both (or START if propeller is stopped)
6. Primer..... In & Locked

Forced Landing Without Engine Power

1. Seats, Seat Belts, and Shoulder Harnesses…Set & Secure
2. Airspeed..... 70 KIAS (Flaps Up)
   65 KIAS (Flaps Down)
3. Mixture.....Idle Cut Off
4. Fuel Selector.....Off (Push & Rotate)
5. Ignition .....Off
6. Wing Flaps..... As Required (30º Recommended)
7. Master Switch .....Off
8. Doors .....Unlatched (Prior To Touchdown)
9. Touchdown ..... Slightly Tail Low
10. Brakes ..... Apply Heavily

Precautionary Landing With Engine Power

1. Seats, Seat Belts, and Shoulder Harnesses……Set & Secure
2. Wing Flaps..... 20°
3. Airspeed.....65 KIAS
4. Select Field .....Perform Fly Over Inspection
5. Avionics & Electrical Switches…Off
6. Flaps.....30º on Final Approach
7. Airspeed.....65 KIAS
8. Master Switche ..... Off
9. Doors .....Unlatched (Prior To Touchdown)
10. Touchdown..... Slightly Tail Low
11. Ignition Switch .....Off
12. Brakes ..... Apply Heavily

Engine Fire During Start

1. **Continue Cranking Engine**
2. If Engine Starts:..... Power 1700 RPM for a few minutes
3. Engine.....Shutdown and Inspect

If Engine Fails to Start:

4. **Throttle ..... Full Open**
5. **Mixture.....Idle Cut Off**
6. **Cranking ..... Continue**
7. Fire Extinguisher ..... Obtain
8. Master Switch .....Off
9. Ignition Switch.....Off
10. Fuel Selector.....Off (Push & Rotate)
11. Fire ..... Extinguish
12. Fire Damage..... Inspect (repair damage prior to next flight)

Engine Fire in Flight

1. **Mixture.....Idle Cut Off**
2. **Fuel Selector....Off (Push & Rotate)**
3. Master Switch .....Off
4. Cabin Heat & Air .....Off (Except Overhead Vents)
5. Airspeed.....100 KIAS (If fire is not extinguished, increase glide speed to find an airspeed, which will provide an incombustible mixture.)
6. Forced Landing w/o Engine Power .....Execute

Electrical Fire in Flight

1. **Master Switch..... Off (Leave Ignition On)**
2. **Vents / Cabin Air / Heat .....Closed**
3. **Fire Extinguisher.....Activate**

Warning
After discharging an extinguisher within a closed cabin, ventilate the cabin.

4. **All Other Switches (Except Ignition) ..... Off**
5. Avionics Power Switch…….Off
6. All other switches (except ignition Switch)…Off

If fire is extinguished & electrical power is necessary

7. Master Switch..... On
8. Circuit Breakers..... Check for Faulty circuit (Do Not Reset)
9. Radio Switches……Off
10. Avionics Power Switch…..On
11. Radio & Electrical Switches…..On (one at a time w/ delay after each to locate short).
12. **Vents / Cabin Air / Heat ..... Open** (when assured fire is extinguished)

Cabin Fire

1. **Master Switch .....Off (Leave Ignition On)**
2. **Vents/Cabin Air/Heat. Closed**
3. **Fire Extinguisher ..... Activate**

Warning
After discharging an extinguisher within a closed cabin, ventilate the cabin.

4. Land ..As soon as possible and inspect damage

Wing Fire

1. **Landing/Taxi Lights..... Off**
2. **Pitot Heat ..... Off**
3. **Navigation Lights ..... Off**
4. **Strobe Lights ..... Off**

Note

Sideslip to keep flames away from the fuel tank and cabin, and land as soon as possible using flaps only as required for final approach and touchdown.

Icing

1. Pitot Heat..... On
2. Turn back or change altitude to obtain an outside air temp that is less conducive to icing.
3. Pull cabin heat control to full out and open defroster outlet to obtain maximum windshield defroster airflow.
4. Open the throttle to increase engine speed and minimize ice build-up on propeller blades
5. Watch for signs of carburetor air filter ice and apply carburetor heat as required. An unexplained loss in engine speed could be caused by carburetor ice or air intake filter ice. Lean the mixture if carb heat is used continuously.
6. Plan a landing at the nearest airport. With an extremely rapid ice build-up, select a suitable "off airport" landing site.
7. With ice accumulation of ¼ inch or more on the wing leading edges, be prepared for significantly higher stall speed.
8. Leave wing flaps retracted. With a severe ice build-up on the horizontal tail, the change in wing wake airflow direction caused by wing flap extension could result in a loss of elevator effectiveness.
9. Open left window and if practical scrape ice from a portion of the windshield for visibility in landing approach.
10. Perform landing approach using a forward slip, if necessary, for improved visibility.
11. Approach at 80 to 90 KIAS depending upon the amount of accumulation.
12. Perform a landing in level attitude.

Ditching

1. Radio .....Transmit Mayday on 121.5 giving location and intentions and squawk 7700.
2. Heavy Objects..... Secure or Jettison.
3. Seats, Seat Belts, and Shoulder Harnesses……Set & Secure
4. Approach:
   - High winds, heavy seas ...Into the Wind.
   - Light winds, heavy swells..... Parallel to swells.
5. Wing Flaps..... 20º to 30º
6. Power..... Est. a 300 FPM descent at 55 KIAS.

Note

If no power is available, approach at 70 KIAS with flaps up or at 65 KIAS with 10º flaps.

7. Cabin Doors.....Unlatch
8. Touchdown .....Level attitude at established descent rate.
9. Face.....Cushion at touchdown with folded coat or seat cushion.
10. Airplane .....Evacuate through Cabin doors. If necessary, open window and flood cabin to equalize pressure so doors can be opened.
11. Life vests and raft .....Inflate

For all other Emergency Abnormal Procedures. See the POH Section 3.

Airspeeds for Emergency Operations

Engine Failure After Takeoff:
Wing Flaps Up -- 70 KIAS
Wing Flaps Down -- 65 KIAS

Maneuvering Speed:
2550 Lbs – 105 KIAS
2150 Lbs – 95 KIAS
1750 Lbs – 85 KIAS

Maximum Glide:
2550 Lbs – 65 KIAS
2150 Lbs – 62 KIAS
1750 Lbs – 56 KIAS

Precautionary Landing With Engine Power – 65 KIAS

Landing Without Engine Power:
Wing Flaps Up – 70 KIAS
Wing Flaps Down – 65 KIAS

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Airspeeds for Emergency Operations

Engine Failure After Takeoff:

Wing Flaps Up -- 70 KIAS
Wing Flaps Down -- 65 KIAS

Maneuvering Speed:

2550 Lbs – 105 KIAS
2150 Lbs – 95 KIAS
1750 Lbs – 85 KIAS

Maximum Glide:

2550 Lbs – 68 KIAS
2150 Lbs – 62 KIAS
1750 Lbs – 56 KIAS

Precautionary Landing With

Engine Power – 65 KIAS

Landing Without Engine Power:

Wing Flaps Up – 70 KIAS
Wing Flaps Down – 65 KIAS

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I certify this checklist has been reviewed for accuracy.

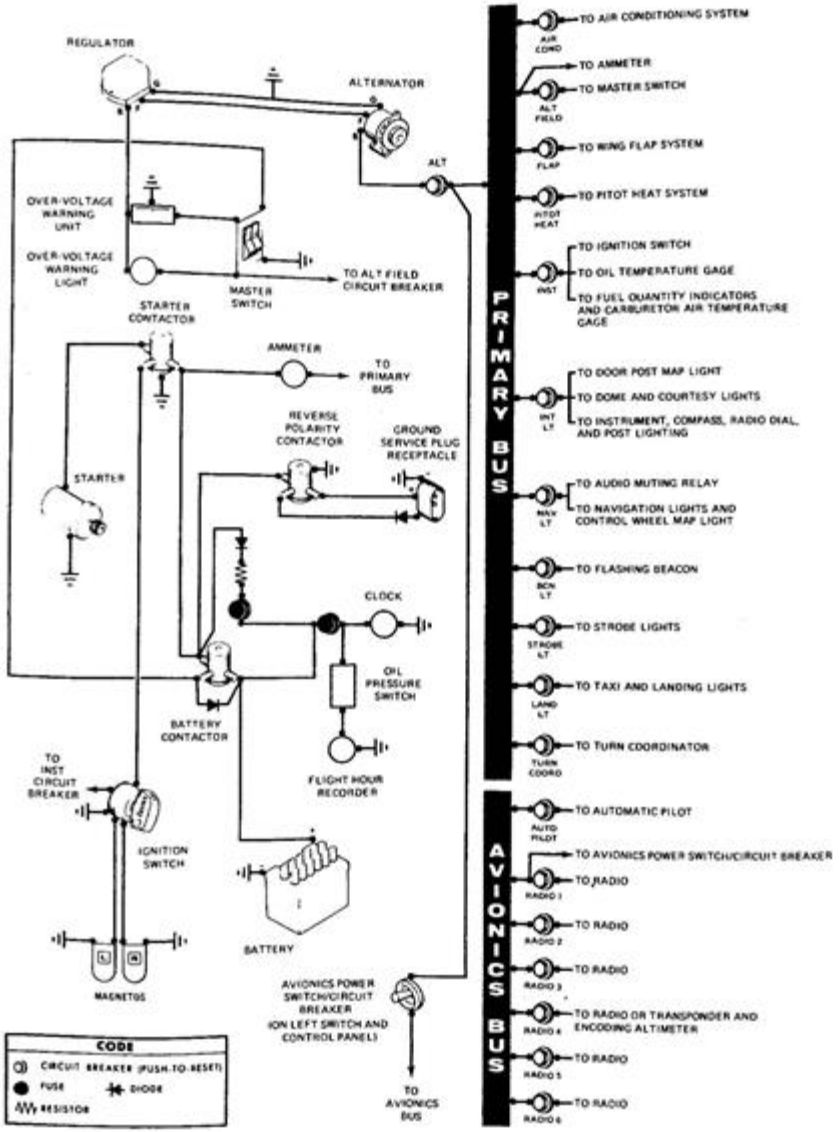

Figure 7-7. Electrical System

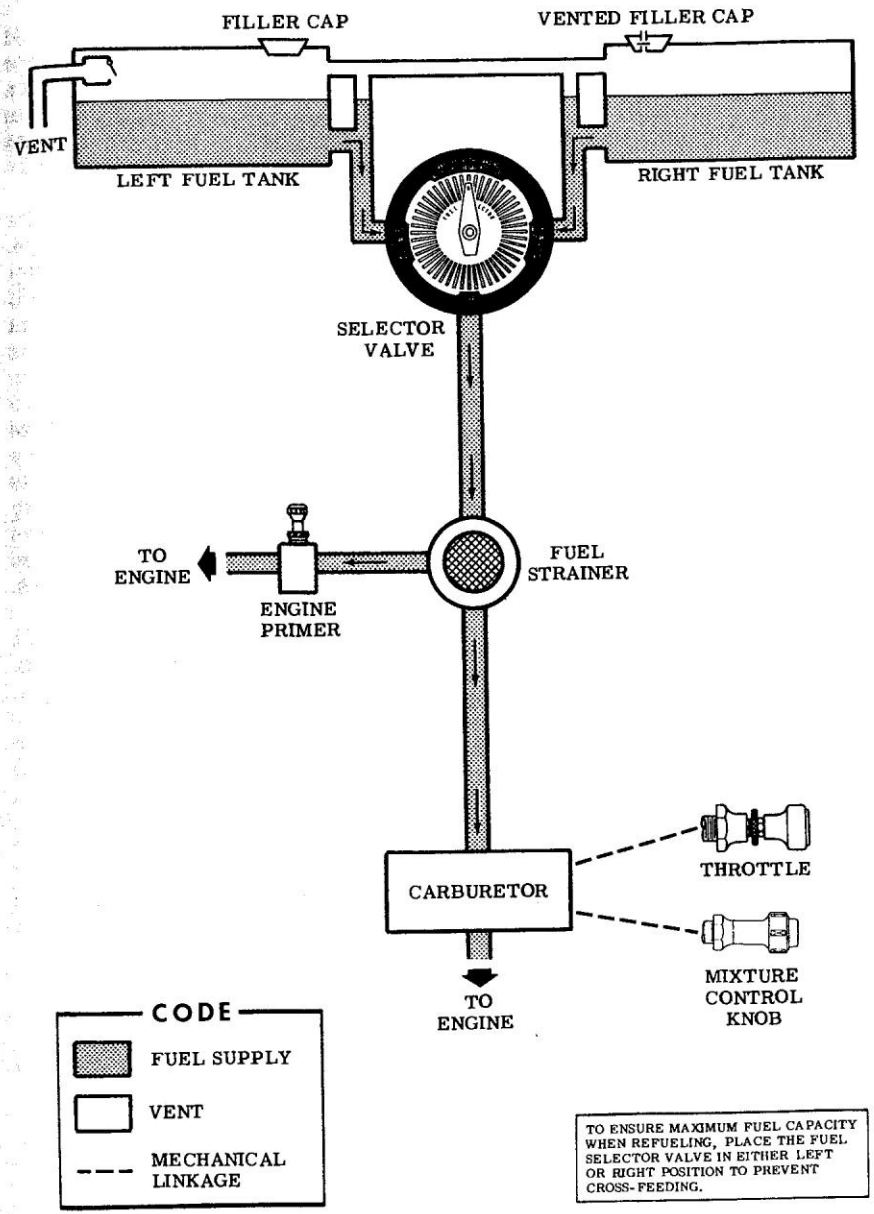

Figure 7-6. Fuel System (Standard and Long Range)

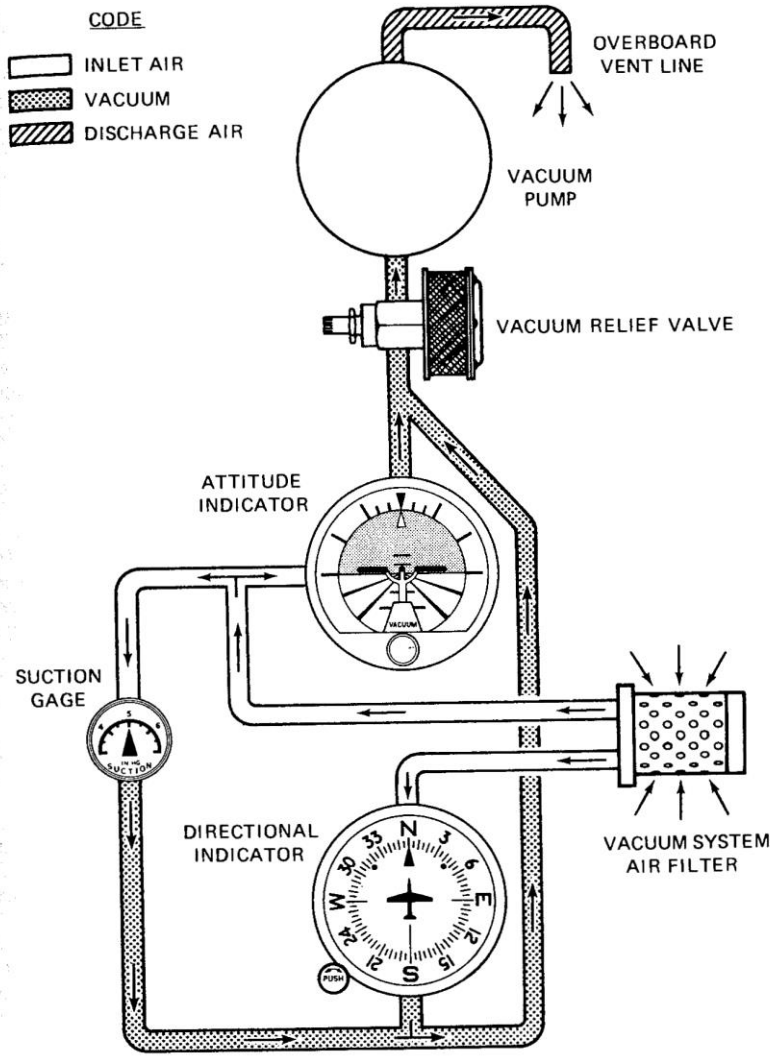

Figure 7-9. Vacuum System