Civil Air Patrol

Cessna: C172R (Air Plains-180HP)

CVD: 1 Dec 15 (G400 thru G750 & KAP140)

Preflight Cabin

1. AIF…Review all & Inspect for Airworthiness.
2. Pitot Tube Cover…Remove & Check Clear
3. POH & GPS Guide……Accessible
4. Documents..... AROW in airplane
5. Parking Brake ..... Set
6. Hobbs & Tach Time .....Record
7. Fire Extinguisher .....Charged
8. Control/Avionics Lock.....Remove
9. Ignition Switch .....Off.
10. Avionics Master Switch.....Off.

WARNING
When the master switch is on, using an external power source, or manually rotating the propeller, treat the propeller as if the magnetos 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 engine to start.

11. Master Switch .....On.
12. Fuel Quantity Indicators.....Check Quantity and Ensure Low Fuel Annunciators (L Low Fuel R) are extinguished.
13. Avionics Master Switch.....On.
14. Avionics Cooling Fan..... ..Check Audibly for Operation.
15. Avionics Master Switch.....Off.
16. Static Pressure Alternate Source Valve.....Off.
17. Annunciator Panel SwitchPlace and Hold in TST Position and ensure all annunciators illuminate.
18. Annunciator Panel Test Switch….. ....Release. Check that appropriate annunciators remain on.

Note: When Master Switch is turned ON, some annunciators will flash for approximately 10 seconds before illuminating steadily. When panel TST switch is toggled up and held in position, all remaining lights will flash until the switch is released.

19. Fuel Selector Valve .....Both.
20. Fuel Shutoff Valve.....On (Push Full In).
21. Flaps .....Extend.
22. Pitot HeatOn. (Carefully check that pitot tube is warm to the touch within 30 seconds.)
23. Pitot Heat ..... Off.
24. Master Switch ..... Off.
25. Elevator Trim .....Set for takeoff.
26. Baggage Door ...Check, lock with key.
27. Autopilot Static Source Opening (if installed) ..... Check for blockage.

Preflight Empennage

1. Rudder Gust Lock (if installed)…Remove.
2. Tail Tie-Down ..... Disconnect.
3. Control Surfaces...Check freedom of movement and security.
4. Trim Tab.....Check security.
5. Antennas ..... Check for security of attachment and general condition.

Preflight Right Wing Trailing Edge

1. Aileron .....Check freedom of movement and security.
2. Flap .....Check security & condition.

Preflight Right Wing

1. Wing Tie Down..... Disconnect.
2. Fuel Tank Vent Opening…Check for Stoppage
3. Main Wheel Tire ... Check for proper inflation and general condition.
4. Fuel Tank Sump Drain Valves …Drain at least a cupful of fuel from each sump location to check for water, sediment, and proper fuel grade before each flight and after each refueling. If water is observed, take further samples until clear and then gently rock wings and lower tail to the ground to move additional contaminants to the sampling point. Take repeated samples from all fuel drain points until **all** contamination has been removed. If contaminants are still present, refer to Warning below and do not fly airplane.

WARNING: If, after repeated sampling, evidence of contamination still exists, the airplane should not be flown. Tanks should be drained and system purged by qualified maintenance personnel. All evidence of contamination must be removed before further flight.

5. Fuel Quantity ..... Check Visually.
6. Fuel Filler Cap..... Secure and Vent Unobstructed.

Preflight Nose

1. Fuel Strainer Valve…Drain catch, and check fuel.
2. Alternator Belt…..Check Condition.
3. Engine Oil Dipstick/Filler Cap ....Check oil level and secure. (5-8 Quarts, 8 Quarts for extended flights)
4. Engine Cooling Air Inlets ..... Clear.
5. Propeller & Spinner .....Check.
6. Air Filter .....Check.
7. Nose Wheel Strut and Tire ...Check.
8. Towbar……..Removed and Stowed.
9. Left Static Source Opening...Check.

Preflight Left Wing

1. Left Fuel Quantity ... Visually Check.
2. Fuel Filler Cap .....Secure & Vent unobstructed.
3. Fuel Tank Quick Drain Valves.Drain.
4. Main Wheel Tire ...Check Condition.

Preflight Left Wing Leading Edge

1. Fuel Tank Vent OpeningCheck for blockage.
2. Stall Warning Opening…Check (for blockage).
3. Wing Tie Down ..... Disconnect.
4. Landing/Taxi light(s).....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, check initial reel (front & rear).
5. Brakes.....Test & Set.
6. Circuit Breakers .....Check In.
7. Electrical Equipment .....Off.

Caution: The avionics master switch must be off during engine start to prevent possible damage to avionics.

8. Avionics Master Switch .....Off.
9. Fuel Selector Valve..... Both.
10. Fuel Shutoff Valve….On (push full in).
11. Avionics Circuit Breakers.Check In.

Starting Engine (Using Battery)

1. Alternate Air .....Off.
2. Throttle Control ..... Open ¼ Inch.
3. Mixture Control .....Idle Cut Off.
4. Propeller Area..... Clear.
5. Master Switch .....On.
6. Flashing Beacon .....On.
7. Auxiliary Fuel Pump Switch .....On.
8. Mixture ..... .Advance to obtain 3 to 5 GPH fuel flow, then return to Idle Cut Off position.

Note
If engine is warm, omit priming procedure of step 8 above.

9. Ignition Switch..... Start.
10. Mixture.. Advance smoothly to Rich when engine starts.

Note: If the engine floods, turn off aux. fuel pump, place mixture to idle cut off position, open the throttle control ½ to full, and crank engine. When the engine fires, advance the mixture control to the Full Rich position and retard throttle promptly.

11. Oil Pressure .....Check.
12. Auxiliary Fuel Pump .....Off.
13. Nav Lights .....On as required.
14. Avionics Power Switch .....On.
15. Check MFD for correct A/C type and Navigation database expiration dates, then press ENT.
16. Radios .....On.
17. Transponder.....TEST/Code Set/ALT
18. Flaps ..... Retract

Taxi

1. Mixture Control.... Lean as required.
2. Heat / Vents / Defrost..As Required.
3. Brakes..... Release and Test.
4. Attitude Indicator Verify Proper Ops.
5. Turn Coordinator.....Verify Ops.
6. H.I. & Compass..Verify Proper Ops.

Before Takeoff - Run-Up

1. Parking Brake ..... Set.
2. Passenger Seat Backs…Most upright position.
3. Seats and Seat Belts..Check Secure.
4. Cabin Doors .....Closed and Locked.
5. Flight Controls.....Free & Correct.
6. Flight Instruments ..... Check & Set.
7. Altimeters: PFD, Stby, (KAP140)...Set.
   - PFD (Baro).....Set.
   - Standby Altimeter.....Set.
   - KAP 140 Autopilot Baro (Two Axis/Alt System Only)….Set.
8. Garmin Altitude Select ..... Set.
9. KAP 140 Altitude Preselect (Two Axis/Alt System Only)…….Set.

Note: There is no connection between the Garmin Alt Sel feature and the KAP 140 autopilot altitude pre-select or altitude hold functions. Garmin & KAP140 altitudes are set independently.

10. Fuel Quantity ..... Check.
11. Mixture..... Rich.
12. Fuel Selector Valve Recheck Both.
13. Elevator Trim .....Set for Takeoff.
14. Throttle Control..... 1800 RPM.
    a. Magnetos Switch. Check (RPM drop 150 or 50 differential between magnetos.)
    b. Alternate Air Control.... ..Check (Slight RPM Drop).
    c. Suction Gage ..... Check.
    d. Engine Instruments..... Check.
    e. Ammeters..... Check.
15. Annunciator Panel ..... Ensure no annunciators are illuminated.
16. Throttle ..... Check Idle.
17. Throttle .....1000 RPM or less.
18. Throttle Friction Lock..... Adjust.
19. Strobe Lights .....As Desired.
20. Radios & Avionics..... Set.
21. NAV/GPS Switch (if installed) ... Set.
22. Com & Nav Frequency(s) .....Set.
23. FMS/GPS Flight Plan...As Desired.
24. XPDR (Transponder)…Code Set/ALT.
25. Garmin CDI..... Select NAV source.

Caution: The G1000 HSI does not provide a warning "Flag". The missing D-Bar is considered to be the warning flag.

WARNING
Interruption of NAV signal to the autopilot will cause autopilot to revert to ROL mode with NO warning chime or PFD annunciation.

26. Autopilot (if installed) ..... Off.
27. Wing Flaps..Set of Takeoff (0-10°).
28. Brakes..... Release.

Takeoff

1. Wing Flaps ..... 0°-10°.
2. Throttle .....Full Open.
3. Mixture….Rich (above 3000 ft., lean to obtain max. RPM).
4. Elevator Control..Lift Nose Wheel (at 55 KIAS).
5. Climb Speed.....70 - 80 KIAS.
   - Short Field T.O.....10° Flaps / 62 KIAS Until Clear Obstacles.
   - Soft Field T.O.10° Flaps / Ground Effect ASAP.
6. Wing Flaps .. Retract at safe altitude above 65 KIAS.

Enroute Climb

1. Airspeed .....70-85 KIAS.

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

2. Throttle .....Full Open.
3. Mixture….. Rich (above 3000 ft., lean for max. RPM).

Cruise

1. Power .....2100-2700 RPM (no more than 75% is recommended).
2. Elevator Trim ..... Adjust.
3. Mixture..... Lean.

Descent

1. Power .....As Desired.
2. Mixture. Adjust for smooth ops (full rich for idle power).
3. Altimeters: PFD, Stby, and KAP140 (Two Axis/Alt System Only)…Set.
4. Garmin Alt Select ..... Set.
5. KAP140 Altitude Preselect (Two Axis/Alt System Only).....Set.
6. Garmin CDI...Select NAV source.
7. FMS/GPS ..... Review & Brief.

See Caution in Before Takeoff Run-up.

See Warning in Before Takeoff-Run-up.

8. NAV/GPS Switch (if installed)... Set.
9. Alternate Air.. On (if conditions are present for icing to exist).
10. Fuel Selector Valve ..... Both.
11. Wing Flaps..... As Desired.

Before Landing

1. Pilot and Passenger Seat Backs ... Most Upright Position.
2. Seats & Seat Belts..Secured & Lock.
3. Fuel Selector Valve ..... Both.
4. Mixture Control .....Rich.
5. Alternate Air.. On (if conditions are present for icing to exist).
6. Landing & Taxi Lights ..... On.
7. Autopilot (if installed) .....Off.

Normal Landing

1. Airspeed .. 65 - 75 KIAS (flaps up).
2. Wing Flaps As Desired (0º - 10º below 110 KIAS, 10º -30º below 85 KIAS).
3. Airspeed..60 - 70 KIAS (Flaps Down).
4. Touchdown.....Main Wheel First.
5. Landing Roll.... Lower Nose Wheel Gently.
6. Braking ..... Minimum Required.

Balked Landing

1. Throttle ..... Full Open.
2. Alternate Air..... Off (if pulled).
3. Wing Flaps .....Retract to 20°.
4. Climb Speed .....60 KIAS.
5. Wing Flaps..10º (until obstacles are cleared). RETRACT (after reaching a safe altitude and 65 KIAS)

After Landing (Clear of Runway)

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

Securing Aircraft

1. Parking Brake..... Set.
2. Electrical Equipment, Autopilot (if installed) .....Off.
3. Avionics Master Switch.....Off.
4. Magnetos ..... Check for Ground.
5. Mixture ..... Idle Cut-Off.
6. Sterile Cockpit……Terminate
7. Ignition Switch.....Off.
8. Master Switch .....Off.
9. Control/Avionics Lock ..... Install.
10. Parking Brake ..... Off.
11. Fuel Selector .....Left or Right.
12. Hobbs & Tach .....Record.
13. Aircraft..... Secured & Locked.
14. Flight Plan ..... Closed.

V Speeds and Specs

- X-Wind (Max Demo'd) .....15 Knots
- Best Glide Speed.....68 KIAS
- Vx (Sea Level) .....62 KIAS
- Vy (Sea Level) .....74 KIAS
- Vso Stall w/ Flaps .....40 KIAS
- Vs1 Stall w/o Flaps .....48 KIAS
- Va Max Abrupt Ctrl (2550 Lbs)..... 105 KIAS
- Va Max Abrupt Ctrl (2150 Lbs).....98 KIAS
- Va Max Abrupt Ctrl (1900 Lbs) .....90 KIAS
- Vno Max Structural Cruise ....129 KIAS
- Vne Never Exceed.....163 KIAS

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

Aircraft Information

- Gross Weight.....2550 lbs.
- Engine.....Lycoming IO-360-L2A
- Max Power..... 180 BHP
- Max Engine Speed .....2700 RPM
- Fuel Type.....100LL (Blue)
- Fuel Capacity.....53 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

This checklist is a guide to coordinate Pilot Operating Handbook and STC data applicable to this particular aircraft only. The applicable Pilot Operating Handbook and STC installations remain the official documentation for this aircraft. The pilot in command is responsible for complying with all items in the Pilot Operating Handbook and applicable STCs.