

1981 Cessna 172P – N781FM

Air Plains 180 HP Conversion

PREFLIGHT CABIN

1. Pilot's Operating Handbook Available
2. Parking Brake.....Set
3. Hobbs & Tach.....Check
4. Fire Extinguisher.....Charged
5. Squawk Sheet.....Check
6. Documents.....AROW in airplane
7. Control/Avionics Lock.....Remove
8. Ignition Switch.....Off
9. Avionics Power Switch.....Off
10. Master Switch.....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.

11. Wing Flaps.....30°
12. Fuel Indicators..... Check Quantity
13. Avionics Cooling Fan.....Check Audibly for Operation
14. Pitot TubeRemove Cover Check As Required
15. Lights.....Check
16. Master Switch.....Off
17. Static Pressure Alternate Source Valve (if installed).....Off
18. Fuel Selector.....Both

PREFLIGHT EMPENNAGE

1. Baggage Door.....Check for security & lock
2. Antennas.....Secure
3. Tail Tie-Down.....Disconnect
4. Control Surfaces.....Check

RIGHT WING trailing edge

1. Right Flap.....Check
2. Right Aileron.....Check
3. Right Wingtip & Light.....Check

PREFLIGHT RIGHT WING

1. Wing Tie Down.....Disconnect
2. Right Fuel Tank Sump.....Drain
3. Right wheel, tire & brake..... Check
4. Fuel Selector -Drain Valve.....Drain
5. Right Fuel Quantity.....Visually Check
6. Fuel Filler Cap.....Secure vent unobstructed

NOSE

1. Engine Oil Dipstick.....5-8 Quarts (7 Min. for extended flights)
2. Fuel Strainer Drain Knob..... Pullout to Drain
3. Engine Oil Filler Cap.....Check Secure
4. Prop & Spinner.....Check
5. Carburetor Air Filter.....Check
6. Nose Wheel, Strut & Tire.....Check
7. Windscreen.....Check/Clean
8. Static Source.....Check (Left side)

PREFLIGHT LEFT WING

1. Left Main Wheel Tire & Brake.....Check
2. Left Fuel Tank Sump.....Drain
3. Left Fuel Quantity.....Visually Check
4. Fuel Filler Cap.....Secure
5. Left Fuel Vent.....Check Clear
6. Stall Warning.....Check
7. Wing Tie-Down.....Disconnect
8. Landing Lights.....Check

LEFT WING Trailing Edge

1. Left Wingtip & Light.....Check
2. Left Aileron.....Check
3. Left Flap.....Check

PASSENGER BRIEF

1. Seat Belts / Shoulder Harness
2. Personal Electronic Devices off
3. Air Vents / Comfort
4. Fire Extinguisher Loc. / 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

BEFORE STARTING ENGINE

1. Preflight Inspection.....Complete
2. Passenger Brief.....Complete
3. Seats / Belts / Shoulder Harness.....Adjust and Lock
4. Fuel Selector Valve.....Both
5. Avionics Power Switch.....Off

Caution

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

6. Autopilot (If Installed).....Off
7. Electrical Equipment.....Off
8. Brakes.....Test & Set
9. Circuit Breakers.....Check In

STARTING ENGINE

1. Mixture.....Rich
2. Carburetor Heat.....Cold
3. Master Switch.....On
4. Flashing Beacon & Nav Lights.....On
5. Prime.....As Required (2 to 4 strokes)
6. Throttle.....Open 1/8 Inch
7. Propeller Area.....Clear
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. Taxi Lights.....As Required
15. Flaps.....Up
16. Transponder.....TEST/STBY
17. ATIS / AWOS.Altimeter..... Set (Verify Within 75' of fld Elev.)

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
6. Fuel Selector Valve.....Check & Set to Both

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 InstrumentsCheck & Set
6. Fuel Quantity..... Check
7. Mixture.....Rich
8. Fuel Selector Valve.....Recheck Both
9. Elevator & Rudder Trim..... Set for Takeoff
10. Throttle.....1700 RPM
11. Magnetos..Max Drop..... 125 RPM 50 RPM differential
12. Carb Heat.....Check for RPM Drop
13. Suction Gauge.....Check
14. Engine Inst & Ammeter.....Check
15. Throttle.....Idle Check Set 800 to 1000 RPM
16. Throttle Friction Lock.....Adjust (If installed).....As Desired
17. Strobe Lights/Pulse Lights (Set 800 to 1000 RPM)
18. Radios / Transponder.....Set
19. Autopilot (If Installed).....Off
20. Flaps set for Takeoff.....0°-10°
21. Primer.....In & Locked
22. Carb. Heat.....Cold
23. Takeoff Briefing.....Complete
24. Doors & Windows.....Latched
25. Lights.....Set
26. Transponder.....Set to ALT
27. Time.....Record
28. Parking Brake.....Release

TAKE OFF

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.....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. Max. Continuous RPM2450
3. Elevator & Rudder Trim.....Adjust
4. Mixture.....Lean
5. Engine Instruments / Fuel.....Check
6. Heading Indicator (H.I.).....To Compass
7. Lights.....As Required
8. Flight Plan.....Activate as Required

DESCENT

1. Heading Indicator.....To Compass
2. Altimeter.....Set
3. Fuel Selector.....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 30°)
8. Airspeed.....60-70 KIAS (Flaps Down)
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.....30° (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. BrakesApply Heavily
8. Wing Flaps.....Retract

BALKED LANDING

1. ThrottleFull Open
2. Carb Heat Cold
3. Wing Flaps.....20° (Immediately)
4. Climb Speed..... 60 KIAS
5. Wing Flaps.....10° (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. TransponderSTBY & 1200
5. Mixture..... Lean
6. Pitot Heat..... Off

SECURING AIRCRAFT

1. Parking Brake Set
2. Throttle Idle
3. Avionics Power & Switches Off
4. Magnetos..... Check for Ground
5. Mixture..... Idle Cut Off
6. Ignition & Master Switch.....Off
7. Control/Avionics Lock.....Install
8. Parking Brake Off

9. Fuel Selector..... Left or Right
10. Hobbs & Tach Record
11. Aircraft..... Secured & Locked
12. 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) 68 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 Cruise127 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**.....121.5
- Unicom 122.7--122.8--122.95
123.0--123.05
- Multicom122.9- (CTAF)
Flight Service 122.2
(Most Common).....122.1--122.6--123.6
Flight Watch.....122.0
Air to Air122.75-122.85-123.45

Transponder Codes

- 1200 VFR
7500 HIJACK
7600 LOST COMMS
7700 EMERGENCY

Aircraft Information

- Gross Weight Capacity.....2550
(Takeoff & Landing2550)
- Engine.....Lycoming O-360-A4M
- Max Power.....180 BHP
 - Max Engine Speed2700 RPM
 - Fuel Type.....100LL (Blue)
 - Fuel Capacity (Standard)..... 40 Gal Usable
 - Oil Type 15w50XC
 - Oil Capacity 8 Qts (Minimum 5)
 - Electrical 24 - 28 Volt / 60 Amp
 - Tire PressureNose-40 PSI
Main -30 PSI

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I certify this checklist has been reviewed for accuracy.

James Spore

Director of Maintenance 1/1/06
Date

EMERGENCY PROCEDURES

N781FM

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Air Plains 180 HP Conversion

Engine Failure During Takeoff Roll

1. Throttle.....Idle
2. Brakes.....Apply
3. FlapsRetract
4. Mixture.....Idle Cut Off
5. Ignition 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
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 opped)
6. Prime.....In & Locked

Forced Landing Without Engine Power

1. Airspeed....70 KIAS (Flaps Up)
65 KIAS (Flaps Down)
2. Mixture.....Idle Cut Off
3. Fuel Selector.....Off
4. Ignition.....Off
5. Wing Flaps.....As Required
(30° Recommended)

6. Master witch.....Off
7. Doors.....Unlatched
Prior To Touchdown
8. Touchdown.....Slightly Tail Low
9. Brakes.....Apply Heavily

Precautionary Landing With Engine Power

1. Wing laps.....20°
2. Airspeed.....65 KIAS
3. Select Field.....Perform
Fly Over Inspection
4. Radio & Electrical SwitchesOff
5. Flaps.....30° on Final Approach
6. Airspeed.....65 KIAS
7. Avionics & Master Switches..... Off
8. Doors.....Unlatched
Prior ToTouchdown
9. Touchdown.....Slightly Tail Low
10. Ignition Switch.....Off
11. 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 ExtinguisherObtain
8. Master/Ignition/Fuel.....Off
9. Fire.....Extinguish
10. Fire Damage.....Inspect

Engine Fire in Flight

1. Mixture.....Idle Cut Off
2. Fuel Selector.....Off
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 Ldg w/o Eng Power.Execute

Electrical Fire in Flight

1. Master Switch Off
(Leave Ignition On)
2. All Other SwitchesOff
(Except Ignition)
3. Vents/Cabin Air/Heat.....Closed
4. Fire ExtinguisherActivate

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

If fire is extinguished & electrical power is necessary

5. Master Switch.....On
6. Circuit Breakers..... Check for
Faulty circuit (Do Not Reset)
7. Radio/Electrical Switches on one at a
time w/ delay after each to locate short.
8. Vent cabin when assured fire is
extinguished

Cabin Fire

1. Master Switch Off
(Leave Ignition on)
2. Vents/Cabin Air/Heat.....Closed
3. Fire ExtinguisherActivate

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

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

Wing Fire

1. Navigation Lights Off
2. Strobe Lights Off
3. Pitot Heat Off
4. Landing/Taxi 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 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
10. Perform landing approach,
if necessary for improved
visibility use a forward slip
11. Approach at 80 to 90 KIAS
depending upon the amount
of accumulation ice.
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. Flaps.....20° to 30°
4. Power.....Est. a 300 FPM
descent at 55 KIAS
5. ApproachHigh winds,
heavy seas Into the Wind
Light winds, heavy swells.....
Parallel to swells

Note

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

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

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

LANDING WITHOUT ELEVATOR CONTROL

Trim for horizontal flight (with an air-Speed of approximately 65 KIAS and Flaps set to 20 deg.) by using throttle And elevator trim controls. **Then DO NOT change the elevator trim control setting;** control the glide angle by adjusting power exclusively.

At flareout, the nose-down moment Resulting from power reduction is an Adverse factor and the airplane may hit On the nose wheel. Consequently, at Flareout, the elevator trim control should be adjusted toward the full nose-Up position and the power adjusted so that the airplane will rotate to the hori-Zontal attitude for touchdown.
Close the throttle at touchdown



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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 – 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