



Cessna 172S

INTRODUCTION

This checklist contains information from the original manufacturer's Pilot Information Manual. Normal procedures associated with optional systems can be found in the Supplements, Section 9.

Information in BLACK is taken from the original manufacturer's Pilot Information Handbook.

Information in GREEN is Aspen Flying Club's recommendations for high altitude operations.

AIRSPEEDS FOR NORMAL OPERATION

Unless otherwise noted, the following speeds are based on a maximum weight of 2550 pounds and may be used for any lesser weight.

Takeoff:

Normal Climb..... 75-85 KIAS
Short Field Takeoff, Flaps 10°, Speed at 50 Feet.. 56 KIAS

Enroute Climb, Flaps Up:

Normal, Sea Level..... 75-85 KIAS
Normal, 10,000 Feet..... 70-80 KIAS
Best Rate-of-Climb, Sea 74 KIAS
Best Rate-of-Climb, 10,000 Feet..... 72 KIAS
Best Angle-of-Climb, Sea Level 62 KIAS
Best Angle-of-Climb, 10,000 Feet 67 KIAS

Landing Approach:

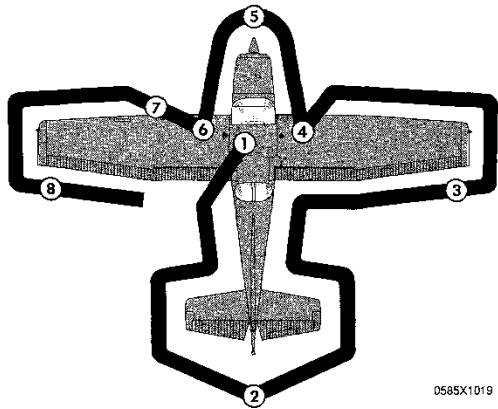
Normal Approach, Flaps Up 65-75 KIAS
Normal Approach, Flaps 30° 60-70 KIAS
Short Field Approach, Flaps 30° 61 KIAS

Balked Landing:

Maximum Power, Flaps 20° 60 KIAS
Maximum Recommended Turbulent Air Penetration Speed:
2550 Lbs..... 105 KIAS
2200 Lbs..... 98 KIAS
1900 Lbs..... 90KIAS

Maximum Demonstrated Crosswind Velocity:

Takeoff or Landing..... 15 KNOTS



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NOTE

Visually check airplane for general condition during walk-around inspection. Airplane should be parked in a normal ground attitude (refer to Figure 1-1) to ensure that fuel drain valves allow for accurate sampling. Use of the refueling steps and assist handles will simplify access to the upper wing surfaces for visual checks and refueling operations. 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. Prior to flight, check that pitot heater is warm to touch within 30 seconds with battery and pitot heat switches on. If a night flight is planned, check operation of all lights, and make sure a flashlight is available.

Figure 4-1. Preflight Inspection

CHECKLIST PROCEDURES

PREFLIGHT INSPECTION

(1) CABIN

1. Pitot Tube Cover -- REMOVE. Check for pitot blockage.
2. Pilot's Operating Handbook-- AVAILABLE IN THE AIRPLANE.
3. Airplane Weight and Balance -- CHECKED.
4. Parking Brake -- SET.
5. Control Wheel Lock -- REMOVE.
6. Ignition Switch -- OFF.
7. Avionics Master Switch-- OFF.

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.

8. Master Switch -- ON.
9. Fuel Quantity Indicators -- CHECK QUANTITY and ENSURE LOW FUEL ANNUNCIATORS (L LOW FUEL R) ARE EXTINGUISHED.
10. Avionics Master Switch -- ON.

11. Avionics Cooling Fan-- CHECK AUDIBLY FOR OPERATION.
12. Avionics Master Switch-- OFF.
13. Static Pressure Alternate Source Valve-- OFF.
14. Annunciator Panel Switch -- PLACE AND HOLD IN TST POSITION and ensure all annunciators illuminate.
15. 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.

16. Fuel Selector Valve -- BOTH.
17. Fuel Shutoff Valve -- ON (Push Full In).
18. Flaps -- EXTEND.

18.1 Lights – Check nav/strobe/landing/taxi

19. Pitot Heat -- ON. (Carefully check that pitot tube is warm to touch within 30 seconds.)
20. Pitot Heat-- OFF.
21. Master Switch-- OFF.
22. Elevator Trim --SET for takeoff.

21.1 Compass Deviation Card -- Checked

23. Baggage Door-- CHECK, lock with key.
24. Autopilot Static Source Opening (if installed) -- CHECK for blockage.

24.1 Fire extinguisher--check

(2) 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.

(3) RIGHT WING Trailing Edge

1. Aileron-- CHECK freedom of movement and security.
2. Flap -- CHECK for security and condition.

(4) RIGHT WING

1. Wing Tie-Down -- DISCONNECT.
2. Main Wheel Tire -- CHECK for proper inflation and general condition (weather checks, tread depth and wear, etc...).
3. Fuel Tank Sump Quick Drain Valves -- DRAIN at least a cupful of fuel (using sampler cup) 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 any additional contaminants to the sampling points. 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.

4. Fuel Quantity -- CHECK VISUALLY for desired level.
5. Fuel Filler Cap -- SECURE and VENT UNOBSTRUCTED.
6. **Brake pads, rotor, lines -- Check**

(5) NOSE

0.1 Windscreen – Check/clean

1. Fuel Strainer Quick Drain Valve (Located on bottom of fuselage) -- DRAIN at least a cupful of fuel (using sampler cup) from valve 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 any additional contaminants to the sampling points. Take repeated samples from all fuel drain points, including the fuel reservoir and fuel selector, until all contamination has been removed. If contaminants are still present, refer to WARNING above and do not fly the airplane.

2. Engine Oil Dipstick/Filler Cap -- CHECK oil level, then check dipstick/filler cap SECURE. **Do not operate with less than five quarts.** Fill to eight quarts for extended flight.
3. Engine Cooling Air Inlets -- CLEAR of obstructions.
4. Propeller and Spinner-- CHECK for nicks and security.
5. Air Filter -- CHECK for restrictions by dust or other foreign matter.
6. Nose Wheel Strut and Tire -- CHECK for proper inflation of strut and general condition (weather checks, tread depth and wear, etc...) of tire.
7. Left Static Source Opening-- CHECK for blockage.

(6) LEFT WING

1. Fuel Quantity-- CHECK VISUALLY for desired level.
2. Fuel Filler Cap -- SECURE and VENT UNOBSTRUCTED.
3. Fuel Tank Sump Quick Drain Valves -- DRAIN at least a cupful of fuel (using sampler cup) 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 any additional contaminants to the sampling points. Take repeated samples from all fuel drain points until all contamination has been removed. If contaminants are still present, refer to WARNING on page 4-9 and do not fly airplane.

4. Main Wheel Tire -- CHECK for proper inflation and general condition (weather checks, tread depth and wear, etc...).

5. Exhaust -- Check

(7) LEFT WING Leading Edge

1. Fuel Tank Vent Opening -- CHECK for blockage.
2. Stall Warning Opening -- CHECK for blockage. To check the system, place a clean handkerchief over the vent opening and apply suction; a sound from the warning horn will confirm system operation.
3. Wing Tie-Down -- DISCONNECT.
4. Landing/Taxi Light(s) -- CHECK for condition and cleanliness of cover.

6. Brake pads, rotor, lines -- Check

(8) LEFT WING Trailing Edge

1. Aileron-- CHECK for freedom of movement and security.
2. Flap -- CHECK for security and condition.

BEFORE STARTING ENGINE

1. Preflight Inspection-- COMPLETE.
2. Passenger Briefing -- COMPLETE.
3. Seats and Seat Belts -- ADJUST and LOCK. Ensure inertia reel locking.
4. Brakes -- TEST and SET.
5. Circuit Breakers -- CHECK IN.
6. Electrical Equipment-- OFF.

CAUTION

THE AVIONICS MASTER SWITCH MUST BE OFF DURING ENGINE START TO PREVENT POSSIBLE DAMAGE TO AVIONICS.

7. Avionics Master Switch-- OFF.
8. Fuel Selector Valve -- BOTH.
9. Fuel Shutoff Valve -- ON (push full in).
10. Avionics Circuit Breakers -- CHECK IN.

STARTING ENGINE (With Battery)

1. Throttle-- OPEN 1/4 INCH.
2. Mixture-- IDLE CUTOFF.
3. Propeller Area -- CLEAR.
4. Master Switch-- ON.
5. Flashing Beacon -- ON.

NOTE

If engine is warm, omit priming procedure of steps 6, 7 and 8 below.

6. Auxiliary Fuel Pump Switch -- ON.
7. Mixture -- SET to FULL RICH (full forward) until stable fuel flow is indicated (usually 3 to 5 seconds), then set to IDLE CUTOFF (full aft) position.
8. Auxiliary Fuel Pump Switch- OFF.
9. Ignition Switch-- START (release when engine starts).
10. Mixture -- ADVANCE smoothly to RICH when engine starts.

NOTE

If engine floods (engine has been primed too much), turn off auxiliary fuel pump, place mixture to idle cutoff, open throttle 1/2 to full, and motor (crank) engine. When engine starts, set mixture to full rich and close throttle promptly.

10.1 Throttle 1000 RPM

11. Oil Pressure -- CHECK.
12. Navigation Lights -- ON as required.
13. Avionics Master Switch -- ON.
14. Radios -- ON.
15. Flaps-- RETRACT.

STARTING ENGINE (With External Power)

1. Throttle -- OPEN 1/4 INCH.
2. Mixture-- IDLE CUTOFF.
3. Propeller Area -- CLEAR.
4. Master Switch -- OFF.
5. External Power-- CONNECT to airplane receptacle.
6. Master Switch-- ON.
7. Flashing Beacon -- ON.

NOTE

If engine is warm, omit priming procedure of steps 8, 9 and 10 below.

8. Auxiliary Fuel Pump Switch -- ON.
9. Mixture -- SET to FULL RICH (full forward) until stable fuel flow is indicated (usually 3 to 5 seconds), then set to IDLE CUTOFF (full aft) position.

10. Auxiliary Fuel Pump Switch --OFF.
11. Ignition Switch-- START (release when engine starts).
12. Mixture-- ADVANCE smoothly to RICH when engine starts.

NOTE

If engine floods (engine has been primed to much), turn off auxiliary fuel pump, set mixture in idle cutoff, open throttle 1/2 to full, and motor (crank) engine. When engine starts, set mixture to full rich and close throttle promptly.

12.1 Throttle 1000 RPM

13. Oil Pressure -- CHECK.
14. External Power -- DISCONNECT from airplane receptacle.
Secure external power door.
15. Electrical System-- CHECK FOR PROPER OPERATION.
 - a. Master Switch – OFF
(disconnects both the battery and alternator from the system).
 - b. Taxi and Landing Light Switches-- ON.
(to provide an initial electrical load on the system).
 - c. Engine RPM -- REDUCE to idle.
(Minimum alternator output occurs at idle.)

- d. Master Switch -- ON (with taxi and landing lights switched on).
(The ammeter should indicate in the negative direction, showing that the alternator output is below the load requirements, but the battery is supplying current to the system.)
- e. Engine RPM -- INCREASE to approximately 1500 RPM
(as engine RPM increases, alternator output should increase to meet the system load requirements).
- f. Ammeter and Low Voltage Annunciator—
CHECK
(the ammeter should indicate in the positive direction, showing that the alternator is supplying current and the Low Voltage Annunciator (VOLTS) should not be lighted).

NOTE

If the indications, as noted in Step "d" and Step "f", are not observed, the electrical system is not functioning properly. Corrective maintenance must be performed to provide for proper electrical system operation before flight.

- 16. Navigation Lights -- ON as required.
- 17. Avionics Master Switch-- ON.
- 18. Radios-- ON.
- 19. Flaps -- RETRACT.

BEFORE TAXI

1. Transponder – 1200 and ALT

2. Throttle – Throttle 1,200

3. Mixture – Lean for peak RPM

4. Throttle – As needed

BEFORE TAKEOFF

- 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 and CORRECT.
- 6. Flight Instruments -- CHECK and SET.
- 7. Fuel Quantity-- CHECK.
- 8. Mixture -- RICH.

8.1. Mixture set for altitude.

- 9. Fuel Selector Valve -- RECHECK BOTH.

9.1 Fuel Shutoff – Check On

- 10. Throttle -- 1800 RPM.

aa) Mixture – set for altitude.

- a) Magnetos -- CHECK (RPM drop should not exceed 150 RPM on either magneto or 50 RPM differential between magnetos).
- b) Vacuum Gage-- CHECK.
- c) Engine Instruments and Ammeter-- CHECK.
- 11. Annunciator Panel -- Ensure no annunciators are illuminated.

12. Throttle -- CHECK IDLE.
13. Throttle -- 1000 RPM or LESS.

13.1 Circuit breakers -- Check

14. Throttle Friction Lock-- ADJUST.
15. Strobe Lights --AS DESIRED.
16. Radios and Avionics -- SET.
17. NAV/GPS Switch (if installed) -- SET.
18. Autopilot (if installed) --OFF.
19. Manual Electric Trim (if installed) -- CHECK.
20. Elevator Trim -- SET for takeoff.

20.1 Takeoff Briefing

21. Wing Flaps-- SET for takeoff (0°-10°).
22. Brakes-- RELEASE.

TAKEOFF

NORMAL TAKEOFF

1. Wing Flaps-- 0°-10°.
2. Throttle -- FULL OPEN.
3. Mixture -- RICH (above 3000 feet, LEAN to obtain maximum RPM).
4. Elevator Control-- LIFT NOSE WHEEL (at 55 KIAS).
5. Climb Speed -- 70-80 KIAS.
6. Wing Flaps -- RETRACT.

SHORT FIELD TAKEOFF

1. Wing Flaps-- 10°.
2. Brakes -- APPLY.
3. Throttle -- FULL OPEN.

4. Mixture -- RICH (above 3000 feet, LEAN to obtain maximum RPM).
5. Brakes -- RELEASE.
6. Elevator Control-- SLIGHTLY TAIL LOW.
7. Climb Speed-- 56 KIAS (until all obstacles are cleared).
8. Wing Flaps -- RETRACT slowly after reaching 60 KIAS.

ENROUTE CLIMB

1. Airspeed -- 70-85 KIAS.
2. Throttle -- FULL OPEN.
3. Mixture -- RICH (above 3000 feet, LEAN to obtain maximum 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 operation (full rich for idle power).
3. Altimeter-- SET.
4. NAV/GPS Switch-- SET.
5. Fuel Selector Valve -- BOTH.
6. Wing Flaps -- AS DESIRED (0° - 10° below 110 KIAS, 10°-30° below 85 KIAS).

BEFORE LANDING

1. Pilot and Passenger Seat Backs -- MOST UPRIGHT POSITION.
2. Seats and Seat Belts -- SECURED and LOCKED.
3. Fuel Selector Valve -- BOTH.
4. Mixture -- RICH.

4.1 Mixture set for altitude

5. Landing/Taxi Lights -- ON.
6. Autopilot (if installed)-- OFF.

LANDING

NORMAL LANDING

1. Airspeed-- 65-75 KIAS (flaps UP).
2. Wing Flaps -- AS DESIRED (0°-10° below 110 KIAS, 10°-30° below 85 KIAS).
3. Airspeed-- 60-70 KIAS (flaps DOWN).
4. Touchdown-- MAIN WHEELS FIRST.
5. Landing Roll -- LOWER NOSE WHEEL GENTLY.
6. Braking-- MINIMUM REQUIRED.

SHORT FIELD LANDING

1. Airspeed-- 65-75 KIAS (flaps UP).
2. Wing Flaps -- FULL DOWN (30°).
3. Airspeed-- 61 KIAS (until flare).
4. Power-- REDUCE to idle after clearing obstacle.
5. Touchdown -- MAIN WHEELS FIRST.
6. Brakes-- APPLY HEAVILY.

6.1 Caution! Excessive brake application may

cause tire damage.

7. Wing Flaps -- RETRACT.

BALKED LANDING

1. Throttle -- FULL OPEN.
2. Wing Flaps-- RETRACT TO 20°.
3. Climb Speed -- 60 KIAS.
4. Wing Flaps-- 10° (until obstacles are cleared).
RETRACT (after reaching a safe altitude and 65 KIAS).

AFTER LANDING

1. Wing Flaps-- UP.

1.1 Throttle -- 1200

1.2 Mixture – Lean for max RPM

1.3 Throttle – As needed for taxi

SECURING AIRPLANE

1. Parking Brake -- SET.
2. Electrical Equipment, Autopilot (if installed)-- OFF.
3. Avionics Master Switch-- OFF.
4. Mixture -- IDLE CUTOFF (pulled full out).
5. Ignition Switch-- OFF.
6. Master Switch-- OFF.
7. Control Lock-- INSTALL.
8. Fuel Selector Valve -- LEFT or RIGHT to prevent cross feeding.