

Cessna 172

Expanded Checklist

(For training purposes only. Not to be used in the aircraft)
(Revision: Rev 1, 1 November 2017)

Note: The following information can be considered the "gouge," meaning good information but not necessarily the final word. Note that this Expanded Checklist is for a generic Cessna 172, always use the checklist appropriate to the specific aircraft. Your individual instructor pilots are the main source of accurate information on this topic.

For the most part, the cockpits of AMS fleet of Cessna 172s are configured in the same way, however there are a few differences between the individual aircraft. During your preflight inspection it is a good idea to take a moment and find these differences. While the fuel selector lever, the mixture, throttle, and carb heat knobs, the ignition and master switches and the primer, are all standard across the fleet, other items like the suction gauge, the tachometer and the oil temperature and pressure gauges may be in different locations. The idea is to avoid spending too much time hunting around the instrument panel for a gauge or indicator.

BEFORE STARTING ENGINE

- 1) PREFLIGHT INSPECTION - COMPLETE
- 2) PASSENGER BRIEFING COMPLETE
- 3) FUEL SELECTOR - BOTH

Note: If the FUEL SELECTOR is in the BOTH position (it should already be there) there is no need to move it out of this position.

- 4) SEAT/SEAT BELTS - ADJUST & LOCK

Note: When you get in the aircraft (prior to commencing the BEFORE STARTING ENGINE checklist) you should adjust your seat and put on and adjust the seat belt and shoulder harness (or shoulder strap).

Note: During your preflight inspection check the seat for appropriate fore/aft position, as well as vertical adjustment. Use an extra cushion if required. Also, during your preflight, loosen belts and shoulder harness, if required. Basically, now is not the time to be fiddling with your seatbelt and shoulder harness.

- 5) SHOULDER HARNESS - ADJUST & LOCK

6) BRAKES - TEST & SET

Note: At AMS we do not set the parking brake. For this step simply test the brake pedals, checking for firm pedals.

7) ELECTRICAL EQUIPMENT - OFF

Note: Check the MASTER SWITCH in the OFF position.

8) CIRCUIT BREAKERS - CHECK IN

Note: The CIRCUIT BREAKERS should be flush. A "popped" CIRCUIT BREAKER will be out, and will display a white or red band around the breaker.

Note: During preflight determine the location of circuit breakers.

9) ROTATING BEACON - ON

Note: There are different light switches on different aircraft. During preflight determine the type and location of all light switches.

10) AVIONICS - OFF

Note: With the AVIONICS SWITCH (RADIO MASTER SWITCH) in the OFF position, it is not necessary to turn each individual radio OFF.

Note: During your preflight determine the location and type of AVIONICS SWITCH.

11) PRIMARY FLIGHT CONTROLS - FREE & CORRECT

Note: You are looking for free - i.e. smooth movement, with no binding - and correct movement of the control surfaces. First, turn the yolk to the left (left turn) - note the left aileron moves up and the right aileron moves down. Then turn the yolk full right (right turn) - note the right aileron moves up and the left aileron moves down. Next, look over your right shoulder and pull the yolk full aft (nose pitch up) - note elevator moves up, and then push the yolk full forward (nose pitch down) - note elevator moves down. Continue looking over your right shoulder and move the rudder pedals full left (yaw left) - note rudder moves left, and then full right (yaw right) - note the rudder moves right.

STARTING ENGINE

1) PRIME - AS REQUIRED

Note: Turn the primer knob while gently pulling it out. When the pin on the shaft aligns with the notch on the mounting, the primer will come out. Use two strokes for a cold engine (first flight of the day), or one stroke for a warm engine. To seat the primer, align the pin on the shaft with the notch in the fitting, push the primer knob in and turn to secure.

2) CARBURETOR HEAT - COLD

Note: Ensure CARBURETOR HEAT knob is full COLD.

Note: Carb heat is COLD or OFF when the knob is pushed full in towards the panel. Carb heat is HOT or ON when the knob is pulled fully out.

3) THROTTLE - OPEN 1/8 INCH

Note: Pull THROTTLE knob fully out, then position your finger tip 1/8 of an inch from the throttle fitting, then push the THROTTLE knob forward until your finger tip touches the fitting.

4) MIXTURE - FULL RICH

Note: Push the MIXTURE knob full forward, toward the panel.

Note: Pushing the MIXTURE knob full forward sets FULL RICH, while pulling the knob full aft sets IDLE CUTOFF.

5) PROPELLER AREA - CLEAR

Note: Visually clear the area around the front of the aircraft.

6) MASTER SWITCH - ON

Note: Prior to actually turning on the MASTER SWITCH, locate the proper key and insert it into the IGNITION SWITCH.

7) PRIME - AS REQUIRED

Note: This step has already been completed.

8) PROPELLER AREA - CALL CLEAR

Note: Stick your face out the window and yell CLEAR.

9) BRAKES - SET

Note: As mentioned, we do not use the parking brake, so for this step simply press and hold the brakes.

10) IGNITION SWITCH - START (release when engine starts)

Note: Place your left hand on the key, and your right hand on the throttle.

Note: Turn the IGNITION SWITCH key through the LEFT ("L") and RIGHT ("R") and BOTH magneto positions to the START position. The engine will then begin to crank over. After the engine starts, release the key, which will automatically return to the BOTH position. With the engine running, set the tachometer to 850-1000 RPM.

Note: During your preflight determine the location of the tachometer.

Note: The IGNITION SWITCH is also referred to as the MAGNETO SWITCH, as used during the MAGNETOS test.

11) THROTTLE - ADJUST 850-1000 RPM

12) OIL PRESSURE - GREEN ARC

Note: During your preflight determine the location of these gauges. The OIL PRESSURE should be in the GREEN ARC. The TEMPERATURE may be low for a cold engine, but it will rise.

13) FLAPS - RETRACT

Note: During your preflight determine the type of flap switch installed. Some are momentary action switches that are spring loaded to the OFF position. Others are switches that will remain in their selected position, i.e. RETRACT, OFF, or LOWER

Note: Visually check flaps are fully retracted.

14) AVIONICS - ON/STANDY

Note: Turn AVIONICS master switch to the ON position, and observe communications (COMM) and navigation (NAV) radio come on. It may be necessary to turn on each individual radio.

Note: Turn the transponder to the STANDBY (STY or SBY) position, and set the VFR squawk - 1200.

BEFORE TAXI

1) AVIONICS - SET

Note: Ensure at least COMM 1 is set to the local CTAF frequency (Milton CTAF - 122.97). Ensure you are set up to transmit and receive on COMM 1. For the COMM 2, NAV 1 and NAV 2 radios - set as required by your instructor.

Note: During your preflight take a moment to determine the type of radios and the mixer panel installed in you aircraft.

2) WEATHER/RADIO CHECK - AS REQUIRED

Note: With the COMM 1 set to Milton CTAF, click the mike button three times, and listen for a prerecorded weather report. This report will usually consist of the winds, temp and dew point, and the altimeter setting. If you cannot remember what is being said, be prepared to write it down. Set the altimeter setting as soon as you hear it.

Note: With the COMM 1 set to Milton CTAF, conduct a radio check. Example: Key the mike button and say, "*Milton traffic, Cessna 73504, radio check, over.*" Another aircraft in the area should respond with: "*Cessna 73504, I have you loud and clear.*" You then respond by saying: "*I have you the same.*"

Note: At times there may be no other aircraft in the area, so completion of this radio check will not be possible. However, if you received the prerecorded weather report, it is a good indication your radio is operational

3) FLIGHT INSTRUMENTS - CHECK SET

Note: This is the Six-Pak, and includes: 1. airspeed - should read zero, 2. attitude indicator - wings level, set the nose on the horizon, 3. altimeter - set to current setting, then check altitude indication versus ramp elevation (AMS ramp is 85' msl), tolerance is +/- 75', 4. vertical speed indicator (VSI) - should

read about zero, 5. heading indicator (gyro compass) - check heading on magnetic (wet) compass on top of the panel, then set the heading indicator to this heading, 6. turn coordinator - no turn indicated and the ball in the center.

4) TAXI CLEARANCE - CALL

Note: Make a call over Milton CTAF (122.97) stating your intention to begin to taxi. Example: "*Milton traffic, Cessna 73504, on the AMS ramp, taxi to the run-up area for runway 36.*" This is called a transmission 'in the blind' as there is no one actually controlling whether or not you may begin to taxi. You are simply telling everyone on the frequency your intention to taxi. Most of the time no one will answer you, however you do need to listen up for other aircraft calling you with a potential conflict.

5) LIGHTS - AS REQUIRED

Note: Turn on taxi/landing light.

Note: As mentioned, during your preflight determine the location and type of lights installed in the aircraft.

6) BRAKES - TEST

Note: It is now time to start to taxi. Look left and right to ensure the area is clear to taxi. Release the brakes, and if required, add a bit of power by pushing the throttle forward. Allow the aircraft to roll straight ahead, and then just tap the brakes to see if they are working properly. Do not come to a complete stop. If the brakes are working, continue to roll forward, intercept the yellow taxi line and depart the ramp. Once the aircraft is rolling reset 850-1000 RPM.

ENGINE RUN-UP

1) NOSE WHEEL - STRAIGHT

Note: As you complete the turn into the run-up area, allow the aircraft to roll straight ahead for a few feet to ensure the nose wheel is centered. If you stopped with the NOSE WHEEL - STRAIGHT, there is no need to do this step again.

2) BRAKES - SET

Note: Hold the brakes, and be aware that the aircraft may begin to move when the throttle is advanced, and if the brakes are not firmly held.

3) FLIGHT CONTROLS - FREE & CORRECT

Note: Complete this step as it was done previously.

4) FUEL SELECTOR - BOTH

5) ENGINE INSTRUMENTS - GREEN ARC

Note: OIL PRESSURE should be in the GREEN ARC, and OIL TEMPERATURE should have risen into the GREEN ARC.

Note: As mentioned, during your preflight locate these gauges on the instrument panel.

6) MIXTURE - FULL RICH

Note: Ensure MIXTURE knob is set to FULL RICH (full forward)

7) THROTTLE - 1700 RPM

Note: Push the throttle forward and set 1700 RPM on the tachometer.

8) MAGNETOS - MAX DROP 125 RPM/MAX DIFFERENCE 50 RPM

Note: Place your hand on the IGNITION (MAGNETO) SWITCH. While observing the tachometer, turn the key one click counter-clockwise to the "R" position (this will turn off the left ("L") magneto), note the RPM drop. After the RPM has stabilized turn the key back to BOTH, and allow the engine RPM to stabilize. Next, turn the key two clicks counter-clockwise to the "L" position (this will turn off the right ("R") magneto), note the RPM drop. After the RPM has stabilized turn the key back to BOTH, and allow the engine RPM to stabilize. Compare the two RPM drops and ensure they are within tolerances.

Note: Be very careful not to turn the key all the way to the OFF position, which will shut off both magnetos and kill the engine. If this happens, allow the engine to run down to a stop and then restart the engine.

9) SUCTION - 5 INCHES

Note: The range of this reading can be from 4.6 to 5.4 inches.

Note: During your preflight locate the position of the suction gauge.

10) CARBURETOR HEAT - CHECK (for RPM drop)

Note: Pull the CARBURETOR HEAT knob out to the full HOT (ON) position and note a slight drop of RPM on the tachometer. Immediately after seeing this drop, push the knob back in to the COLD (OFF) position.

11) AMMETER - CHECK

Note: Select the left side of the MASTER SWITCH to the OFF position and note the ammeter needle moves to the negative (or discharge) half of the gauge. Reselect the left MASTER SWITCH to the ON position and note the needle moves back to at least the middle or to the positive (charge) half of the gauge.

Note: This test disconnects and reconnects the alternator to the aircraft electrical system, and ensures the following: the alternator is working, it is charging the battery, and the battery has enough of a charge to power the aircraft electrical system in the event of an alternator failure.

Note: During your preflight locate the position of the ammeter gauge, and the type of MASTER SWITCH installed.

12) THROTTLE - RETARD

Note: Reset (pull) the throttle back to set 850-1000 RPM on the tachometer

BEFORE TAKE-OFF

1) DOORS/WINDOWS - CLOSED/LATCHED

Note: During your preflight become familiar with how the door handle works, particularly how they lock.

2) SEATBELT/HARNESS - ADJUST AND LOCKED

Note: Ensure your seatbelt is snug, and that your shoulder harness is secure but will not prevent you from reaching any of the controls. On our aircraft there is not a shoulder harness locking mechanism.

3) FUEL SELELCTOR - BOTH

4) ELEVATOR TRIM - TAKEOFF

Note: The ELEVATOR TRIM is set via the trim wheel on the center console. Ensure the white internal indicator is set equal to the marking on the console.

5) PRIMER - IN & LOCKED

Note: Give the PRIMER handle a gentle pull to ensure it is IN & LOCKED.

6) MASTER SWITCH - ON

Note: Look at the switch to ensure both sides of the switch are ON.

7) MAGNETOS - BOTH

Note: Look at the switch to ensure it is in BOTH.

8) LIGHTS - AS REQUIRED

Note: Rotating beacon, landing/taxi lights all ON. Some aircraft have a strobe light, which can also be placed on.

9) CARBURETOR HEAT - OFF

Note: Ensure the CARBURETOR HEAT knob is OFF (off/cold - full forward).

10) MIXTURE - FULL RICH

Note: Ensure the MIXTURE knob is FULL RICH (full forward).

11) FLAPS - UP

Note: Ensure the FLAP handle is in the retract (UP or OFF) position, and visually check to make sure the flaps are up.

12) TRANSPONDER - SET & ALT

Note: Ensure the TRANSPONDER is set to the VFR squawk of 1200, and the mode control is set to ALT (altitude).

13) AVIONICS - CHECK & SET

Note: Ensure that COMM 1 is still set to Milton CTAF (122.97) and all other radios are set, as per your instructor.

14) INSTRUMENTS - CHECK & SET

Note: Again, this is the Six-Pak. Go through each of the six instruments as you did previously and ensure they are indicating properly.

A Few Notes on Radio Communications:

At this stage of your flight training much of your radio "comms" will be accomplished at an uncontrolled airport (Milton). There is no controlling agency (i.e. a control tower) telling you what to do nor approving what you want to do. Still, you must make your upcoming actions known to other aircraft in the area (on the ground, in the pattern, or in the arrival/departure routes), which is accomplished by making radio transmission over the CTAF frequency (122.97). There may or may not be a reply to your transmission, depending on whether or not another aircraft perceives a conflict with your intentions. Transmissions of this sort are often referred to as being made 'in the blind.' Basically, you make your transmission and if no other aircraft perceives a conflict, there will be no reply.

Sometimes a reply to another aircraft's transmission is not required, i.e. you are at the hold short line and waiting to take the active runway. Another aircraft transmits rolling onto final for your runway. There is no need for you to respond to this transmission, simply continue to hold short, and when the other aircraft lands you can then make your transmission that you are taking the active runway.

Other times a few radio transmissions between two aircraft can help in coordination and de-confliction. For example: Two aircraft are entering the pattern on the upwind leg at about the same time. Each aircraft has made their radio transmission stating their position and intention. Knowing that they are about to enter the upwind leg at about the same time, the two aircraft will coordinate with each other to determine who will enter the pattern first, and who will follow.

In any case, whether on the ground or in the air, and whether or not there are even any other aircraft in the area, a number of radio transmissions are required

to be made. Of course, safety is paramount, so when in doubt make a radio transmission to clear up any doubt or confusion.

At times these radio transmissions are made up of three basic elements:

- 1) Who are you talking to - *"Milton traffic."*
- 2) Who you are - *"Cessna 73504."*
- 3) What you are doing - *"Entering the pattern on the upwind for runway 36."*

"Milton traffic, Cessna 73504, entering the pattern on the upwind for runway 36."

Another example:

"South Alabama Regional traffic, Cessna 73504, clearing the active runway 11."

Other times these radio transmissions require four basic elements:

- 1) Who are you talking to - *"Milton traffic."*
- 2) Who you are - *"Cessna 73504."*
- 3) Where you are - *"On the AMS ramp."*
- 4) What you are doing - *"Taxiing to the run-up for runway 36."*

"Milton traffic, Cessna 73504, on the AMS ramp, taxiing to the run-up for runway 36."

Another example:

"Crestview traffic, Cessna 79475, ten miles to the east, inbound for runway 35, full stop."

Remember, we were all novice aviators at some time in our careers, and even the pros make some goofed up radio transmissions on occasion. Think of the elements required for each transmission, relax and quickly compose what you are going to say in you mind, then key the mike and start talking.

(Questions, Comments, Smart Remarks to Dave Powers:
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