

CESSNA 172N SKYHAWK PRE-FLIGHT INSPECTION SUPPLEMENT

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LongIslandFlying.com

This visual inspection guide was created to supplement the Cessna 172N Pre-flight Inspection Checklist with additional information and photographs pertaining to the parts and systems of the aircraft which must be inspected for safety prior to flight. This supplement is most helpful when referenced in conjunction with the Cessna 172N Pre-Flight Checklist. Copies of the checklist can be obtained from your flight instructor or downloaded from the “Student Pilot Tools” section of the LongIslandFlying.com website. A high resolution image of the instrument panel can be found on the website, and on the last page of this document.

*In the event that any problems are encountered or suspected during a pre-flight inspection, report your findings immediately to any Long Island Flying instructor and do not accept that aircraft for flight until it is cleared by the instructor or one of our mechanics. This supplement does not include de-icing procedures. Do not fly any aircraft with snow, ice, or frost on its surfaces. Ask your flight instructor for more information on winter operations and ice removal.

INSTRUMENT PANEL



PRE-FLIGHT SAFETY

As you walk out to your aircraft, stay aware of your surroundings. Use extra caution if the ramp is wet or icy. The ramp area is a busy place with heavy airplane and helicopter traffic.

Before you cross a lane where aircraft normally taxi, visually check for aircraft moving in your vicinity. Due to the noise produced by aircraft engines and the echo effect caused by hangars and buildings, it can sometimes be difficult to determine the direction from which an unseen aircraft is approaching.

If you are near or within the path of an oncoming aircraft, be sure to move far enough out of the way so that it will not have to maneuver around you. If you need to pass by a helicopter on the ground that is running, try to walk in front or to the side of the helicopter so the pilot can see you, and keep well clear of the blade radius.

As you get closer to your aircraft, look at any aircraft parked next to it to see if they are occupied and getting ready to start. Indications of a ready-to-start aircraft are lit tail beacons, flashing strobe lights, and an audible “Clear” call from the pilots.

If you need to pass in front of a starting or stationary and running aircraft, make eye contact with the pilot and walk well clear of its propeller.

Once you arrive at your aircraft, be mindful of the struts, wing edges, probes, and antennas which you could accidentally walk into or hit your head against. Keep your body and limbs clear of the propeller arc at all times, and avoid unnecessarily moving the propeller. Avoid touching the muffler or engine, as the metal surfaces can get very hot and cause burns.

Place the ignition key on the top of the dashboard to show people on the ramp that it is not in the ignition keyhole.



INSIDE THE AIRCRAFT

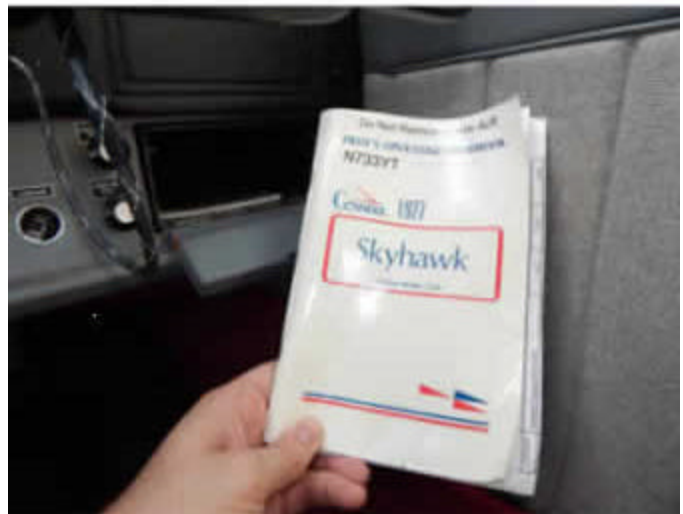
Once you have arrived at your aircraft, begin following the **Pre-Flight Checklist**.

Open the door, and verify that the **Airworthiness Certificate**, **Registration**, and **Operating Handbook** are onboard.

The Airworthiness and Registration documents can usually be found in a small pouch to the left of the pilot's side rudder pedals.



The Operating Handbook contains the **Weight & Balance** and **Equipment List** documents, and can be found either in the glove box or in the pockets behind the front seats.



INSIDE (continued)

Locate and verify the time indicated on the **Hobbs Meter**. This is the meter which tracks the flight time of your lesson. It can usually be found in the upper right corner of the instrument panel. Reference the indicated number to the last recorded number on the clipboard.

If there is a disparity between the numbers, inform your flight instructor so the necessary adjustment can be made.



Remove the yoke **control lock** by pulling the metal pin upwards and out of the column.

Be careful not to bump or snag any knobs or buttons. Secure it in the seatback pouch.



INSIDE (CONTINUED)

Confirm that the key is not in the ignition and that it is in the OFF position.



Confirm that the **Avionics Master** Switch is in the **OFF** position. If your aircraft does not have an Avionics Master Switch, make sure that all the radio and transponder knobs are individually in the **OFF** position.



Check that all **external light switches** are **OFF**. Turn the **Beacon (BCN)** switch **ON**. This ensures that the beacon light will be lit when you turn on the battery. This is done for safety reasons. It indicates to people on the ramp that your electrical system is active and as such, your engine starter could potentially receive power.



INSIDE (CONTINUED)

Confirm that all **circuit breakers** are in and not popped out. A popped breaker will protrude out and display two different colors, such as white and red or black and white. Notify your flight instructor if you find any popped out breakers.



Ensure that nobody is close to the propeller, then turn the Master Switch ON. Any time the **Master Switch** is turned on, the starter could engage and possibly start the engine if certain (though rare) wiring faults existed. For this reason, it is important to exercise additional caution around the propeller any time the switch is turned on.



Check the **fuel gauges** and ensure that you have an adequate amount of fuel for your flight. These gauges are usually located on the left side of the instrument panel. The accuracy of the gauges is not guaranteed, so a physical check of the fuel tanks will be performed later. Use the gauge indications as a general reference for the approximate fuel in your aircraft's fuel tanks.



INSIDE (CONTINUED)

Visually check that nobody is underneath the wings, and fully **lower the flaps** by pushing the handle all the way down. The flaps should fully extend within several seconds. If they stop prematurely, deploy asymmetrically, or seize up momentarily as they lower, notify your flight instructor.



Turn on the **landing lights** and **strobe lights** and visually confirm their operation. For early morning or evening/night flights, check the **navigation lights** and the internal **cabin lights** as well. The landing lights are located on the nose below the propeller. The strobe lights are located either on the wingtips or under the fuselage to the rear of the aircraft. The navigation lights are located on the wingtips and on the tail. The beacon light should be lit and actively pulsing on the top of the tail.



INSIDE (CONTINUED)

After checking the lights, turn all light switches except for the beacon to the **OFF** position and turn the **Master Switch OFF**. Report any burnt out lights.



LEFT MAIN GEAR

Inspect the **landing gear strut** for damage. Visually check the **tire inflation**. If the tire is sagging, your instructor can use a pressure gauge to verify if the pressure is adequate. Check the **tire tread** for wear. If the inner layer of cord is showing through the rubber (it looks like white threads), do not accept that aircraft for flight.



Confirm that the **gear bolts** are secure and none are missing. A cotter pin should be securing the wheel to the axle. The **brake pads** should be decently thick and not cracked.



If **fluid** is detected under the tire, verify that the brake line and fitting are not leaking. Brake fluid is usually red in color. Your flight instructor can explain these inspections in greater detail during your lessons.

Remove the **front chock** from the tire, and place it to the side of the tire facing parallel to the wheel. This will aid you and your instructor when parking the aircraft after you return from your flight.



LEFT WING

Take a **fuel sample** using the **sample cup**. The cup can usually be found in the pouches behind the front seats. Locate the fuel tank **drain point**, which is found under the wing by the rear of the door.



Push the rod on the top of the cup upward into the drain point hole. This will open the valve and start fuel flowing down into the cup. Fill the cup to the extent that you can **visually inspect** the cleanliness of the fuel.



The fuel should be **light blue** in color. You can put the cup next a white painted part of the aircraft to verify the color.

Look at the bottom of the cup for **water bubbles** and **foreign matter**. If contamination is found, continue to take samples until it is cleared out, and alert your instructor.

Keep the fuel in the cup for now; you will pour it back into the tank later.



LEFT WING (CONTINUED)

Place a **ladder** by the wing root (ladders are kept near the aircraft for your convenience).

Be careful that the ladder does not touch the aircraft and take your time going up and down.

In colder months, ensure jacket zippers are not scratching the leading edge of the wing.

Obtain the **fuel dipstick** from the cockpit. It is a wooden stick that can usually be found in the pouches behind the front seats. Climb up the ladder, twist off the red **fuel tank cap** and take a measurement with the fuel dipstick.

Pour the contents of the fuel cup through its filter sieve back into the tank. Secure the fuel tank cap so that its tabs are lined up front to back. Be sure to inform your instructor about the current fuel level.

This is also a good time to check the **antennas** on top of the fuselage.



LEFT WING (CONTINUED)

Check the diagonal **wing strut** for damage, giving emphasis to where the strut connects to the wing and the fuselage.



Confirm that the **cabin vents** on the leading (front) edge of the wing are clear and unobstructed



Continue down the leading edge, checking for dents and damage. Verify that the **stall warning inlet** is clear.



LEFT WING (CONTINUED)

Verify that the **pitot tube** is secure.
Confirm that the ram air inlet (front) and
the water drain hole (bottom) are clear.



Verify that the **fuel vent** tube is secure and
unobstructed



Remove the wing **tie-down** strap. If gusty
wind conditions prevail, wait to remove
the strap until just before you are ready to
board the aircraft.



LEFT WING (CONTINUED)

Follow the leading edge to the **wing tip**. Verify that the navigation and strobe light housings are secure.



Inspect the **aileron** surface above and below for damage. Check the aileron for freedom of movement. Verify that the three sets of four bolts are secure, and that the pushrod is attached.



Inspect the **flap** surface above and below for damage. Push gently upwards on the flap to verify that it is being held in place. Inspect the roller bearings and tracks, and the actuator arm. Your instructor can show you these parts in more detail.



FUSELAGE & EMPENNAGE

Inspect the **fuselage** (body) and **empennage** (tail) of the aircraft for damage, including missing screws and rivets. Verify that the **antennas** on the top and bottom of the aircraft are secure and undamaged.



Verify that the **baggage door** is closed and secure



Remove the tail **tie-down** strap. If gusty wind conditions prevail, wait to remove the strap until just before you are ready to board the aircraft.



FUSELAGE & EMPENNAGE

(CONTINUED)

Inspect the **elevator** surfaces, including the hinges, the **trim tab** and trim tab actuator (below the tab).



Check the elevator and **rudder cables**. Your instructor can show you these cables in more detail.



Remove the **rudder gust lock** and place it on the ground behind the aircraft. Your instructor will demonstrate the proper procedure for removing and applying the gust lock. Inspect the rudder surface and hinges. Verify that the **VOR antenna** (v-shaped) at the top of the rudder is secure.



RIGHT MAIN GEAR

Follow the same steps used for the Left Main Gear

RIGHT WING

Follow the same steps used for the Left Wing, with the exception of the pitot tube, stall warning, and fuel vent inspections.

NOSE

Check the **windscreen** for cracks and damage.

Check for missing rivets around the bottom of the windshield.

If the windscreen is excessively smeared, your instructor can properly clean it. Do not wipe down the screen without the proper cleaning products.

Check the right side of the **cowling** (engine cover) for missing rivets, loose or missing screws and damage. Look for signs of oil leaks around the seams.



NOSE (CONTINUED)

Remove the **bird plugs** from the cowling air intakes. Be careful as you do this, as the fiberglass is thin around that area and could crack if you removed them forcefully.



Check inside the **air intakes** for foreign matter such as bird's nests, forgotten tools, and dirt. Any found matter must be thoroughly removed before flight, as they could damage the engine or cause a fire.



Inspect the condition of the **alternator** and **alternator belt**. Do not fly if the belt is missing, badly cracked, or excessively loose.



NOSE (CONTINUED)

Inspect the **propeller** surface, edges and tips for cracks and damage.

Double check that the Master Switch is **OFF** and the keys are out of the ignition before touching the propeller.



Verify that the **spinner** (nose cone) is secure and all screws are secure.



Ensure that the **carburetor air filter** is clean and unobstructed. Check for tears and clean off any foreign matter.



NOSE (CONTINUED)

Check the inflation and tread of the **nose wheel** tire.

Verify that the oleo (oil-air) strut is pressurized so that around three inches of shiny metal is showing.

The fork should be undamaged, and the axle assembly should have a cotter pin installed.

Inspect the steering linkages and shimmy dampener. Your instructor can give you more detail on these parts.

Remove any chocks and either place them behind the aircraft or secure them in the baggage compartment.

Verify that the **muffler** is secure and check for cracks and damage.

DO NOT touch the metal, as it can potentially be very hot and burn you. If the muffler has an extension, verify that the support bracket is secure.



NOSE (CONTINUED)

Open the **oil hatch** on the top of the cowling, unscrew the oil dipstick, and take a reading.

If the dipstick is smeared badly, use a paper towel or rag to clean off the stick, then take another reading. Replace the stick, and gently tighten.

Do not over tighten the dipstick.

Do not fly the aircraft with less than 4 quarts of oil.

Your instructor can add oil if necessary.

Do not put oily towels or rags in the aircraft; dispose of them properly.

Pull the **fuel strainer knob** (white square) for two seconds.

This will drain fuel from the bottom of the fuel system to clean out any possible contaminants.



NOSE (CONTINUED)

Check the left side of the cowling the same way as you did the right side. Locate the **static port**.



Verify that the **static port** opening is unblocked and free of water. Sometimes people put tape over the opening when cleaning or painting the aircraft.



**PRE-FLIGHT INSPECTION
COMPLETE**