

Preflight Inspection **(Note: When dealing with the flaps, ailerons, & elevators, instructor explains how they work)**

PA28-140

(1) Cabin

- Check for documentation, including Airworthiness and Aircraft Registration certificates, Owners Manual (Pilot Operating Handbook) with weight & balance and equipment list.
- Turn master switch ON, check fuel quantity in each tank. Turn master switch OFF.
- Move fuel valve to 'left' or 'right' tank so any water in fuel line can drain into fuel strainer.
- Check instrument panel for irregularities (e.g. instruments removed or cracked glass).
- Magneto switch, master switch, mixture, and throttle should be in OFF position.
- Check windshield and windows for cleanliness. Clean if necessary, but NOT with a dry rag or with a wet or dry paper towel. Paper scratches! Use window cleaner and cloth only.

(2) Right Aileron and Wing Flap

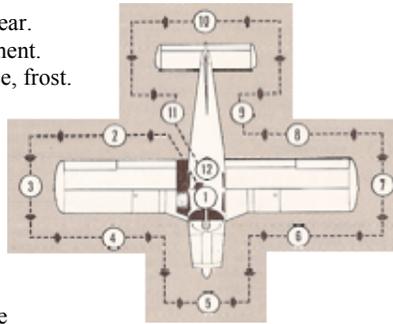
- Remove control surface locks if any are installed.
- Check flap, flap hinges & push rod for security & wear.
- Check aileron & push rod for security & free movement.
- Ensure wings & control surfaces are free of snow, ice, frost.

(3) Right Wingtip

- Check for damage and secure attachment.
- Navigation light is inspected for damage.

(4) Right Wing

- Remove tie-down rope or chain.
- Check wing leading edge for dents and condition, and wing skin and for wrinkles which would indicate internal damage. Wings should be free of mud, frost, or snow that might disturb air flow.
- Fuel quantity is checked visually by looking into the tank and should agree with fuel gauge reading. Replace and tighten filler cap.
- Fuel tank drain is checked for security and leakage. Drain a few ounces of fuel to check for water. If water is found, drain until all the water is eliminated.
- Fuel tank vent opening is checked for obstruction.
- Main landing gear: Tire is inspected for wear, cuts, bruises, and inflation. Shock strut is checked for hydraulic fluid leaks and proper inflation (c. 4.5 inches). Wheel fairings, if installed, are checked for cracks, dents, and general security. Hydraulic brake and brake lines are visually inspected for leaks. Brake blocks and disc checked for wear and damage.



(5) Engine and Propeller Area

- Look inside engine cowl for loose wires or clamps, and for oil or fuel leaks.
- Check oil quantity with dipstick (6 quarts minimum). Add oil if needed. Secure dipstick.
- Inspect nose gear for strut inflation (c. 3.25 inches), and tire for wear, cuts, and inflation.
- The front cowl openings are checked for obstructions.
- Check propeller & spinner for security, and propeller blades and tips for nicks & scratches. Propeller nicks > 1/8th inch in depth should be filed prior to flight by an A&P.
- In cold weather the propeller should be "pulled through" 2 or 3 revolutions to loosen congealed oil and make starting easier.
- Landing light is checked for security, cleanliness, and damage.
- Fuel strainer is drained for several seconds to eliminate any water that may have collected in the fuel strainer.

(6) Left Wing

- Procedures detailed in #4 are repeated for the left wing.
- Inspect pitot-static mast and its openings (front & back) for obstructions.
- Stall warning vane on the leading edge of the wing is checked for freedom of movement. It is good practice to turn the master switch ON prior to this inspection so that the stall warning signal can be checked when the vane is deflected upward.

(7) Left Wingtip

- The procedures outlined in #3 are repeated here.

(8) Left wing Flap and Aileron

- The inspections specified in #2 are performed here.

(9) Fuselage

- The fuselage is checked for skin wrinkles, dents, and loose rivets. The underside of the fuselage is especially susceptible to rock damage and should also be examined for dents, cleanliness, and evidence of excessive engine oil leakage.
- Side windows are checked for cleanliness.

(10) Tail

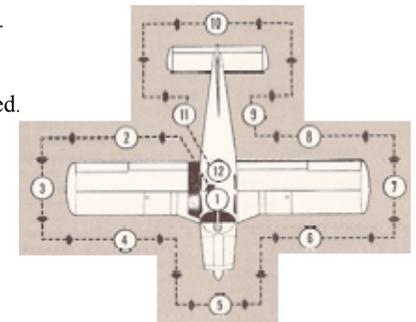
- Control surface lock, if installed, is removed prior to checking the tail assembly.
- Tiedown chain or rope is disengaged.
- Tail surfaces are checked for condition, such as dents, skin wrinkles, and loose rivets.
- Check movable tail surfaces for loose hinge bolts and freedom of movement. Inspect control surface stops for damage and the surface skin for dents, cracks, and wrinkles.
- The trim tab is inspected for security and general condition.
- The tail and beacon lights are checked for damage.
- The navigation antenna is checked for damage and security.

(11) Fuselage

- The checks listed in #9 are repeated in this position.
- The ELT and communications antennas are checked for general condition and security.
- Stow the tow bar and locks, if used.

(12) Cabin

- When entering aircraft, the pilot should slide the passenger seat full aft to permit easy entry. Next, he should adjust his seat to the most comfortable position and check that all primary controls operate properly.
- The cabin door should be closed and locked.
- Seat belts and shoulder harnesses should be hooked up and adjusted for comfort. Function of the inertia reel should be checked.



Advantages & Disadvantages of Different Wing Configurations

Personal preferences & how planes are used dictate which plane is best

**Piper Cherokee
PA28-140**



Low c.g.; Wide wheel base; 1 door

**Cessna
C-172**



High c.g.; Narrow wheel base; 2 Doors

"c.g." = Center of Gravity
"Wheel base" = Distance between main wheels



**Easy
Pre-flight
Inspections**



You get on your knees to check fuel level in a low wing aircraft. High wings require a ladder or acrobatic skills. Which is always available, your knees or a ladder?



**Landing
Visibility**



On turns to BASE leg and FINAL, a high wing blocks your view of the runway (deer? traffic? Birds?). This is not a problem with a low wing Cherokee.



**Crosswind
Landing**



Because of its high c.g., high wings, and narrow wheel base, landing a Cessna in a strong crosswind is like jumping onto a bar stool. A Cherokee is more like jumping onto a couch.



**Aerial
Photography**



Cherokee's low wing gets in the way for a photographer, and you must focus through the window ; A Cessna's side window can be opened and the wing is not between you and the ground.



**Easy
Entry**



You have to climb on the wing to enter a Cherokee's only door. Unlike a Cherokee, a Cessna has doors on both sides. On the other hand, Cessna pilots often bash their foreheads on the trailing edge of the wing



**Hangar
Cost**



Unlike a low wing Cherokee, you can park a car and a boat under a Cessna's wings. Therefore, you can put more things into a hangar with a Cessna.



**Emergency
Landings**



The high c.g. means that a Cessna with wheels down always flips over in a water landing; This is much less likely in a Cherokee, and you can step out onto a wing.

**Other uses &
attributes ?**

While every pilot has his/her own personal preferences regarding safety, an aircraft's mission* (i.e. how it is to be used) will be the key decision point for purchase.

*Examples: Cargo, air-taxi, fire fighting, search & rescue, aerobatics, pipe-line patrol, bush flying, sport flying, traffic control, water or amphibious landings, bush flying, short-field take-off & landing, mountain flying, etc.