

Little things that make a better pilot©

Preflight:

- Opening both doors to the aircraft. Drain the left wing sump and put cup and oil rag on seat so that it will be available when you get to the other side. You don't need to carry them all around the aircraft.
- Don't pour the gasoline in one spot on the tarmac. By giving it a flip downwind it will evaporate in seconds.
- Note setting of trim wheel and then trim tab. Discuss the effect that the trim setting could have had on the resulting landing. For a C-172 the trim setting tells a great deal about the aircraft loading during the last landing.
- Avoid being all ready to start the airplane, only to find that the key cannot be retrieved from the front pocket without getting out of the plane. Put key on floor in front of seat.
- Preset seat and block into position to protect against unexpected seat movement.
- Carry your pre-flight checklist hanging from the bottom on a necklace. It allows you to have both hand free
- and is readily available just by looking down.
- Break oil cap loose with left hand but remove with your right. If you clean off oil between thumb and forefinger of the left hand you can wash oil off when you pull engine sump strainer. Propeller makes nice place to hang dip-stick while adding oil. Be careful.
- Discover the reality of P-factor by noting the horizontal propeller blade angles as tail is lowered to the ground. It makes clear the different control inputs required for left and right climbing turns.
- Rolling the tires 30-40 inches is a required procedure in preflight. Bald is beautiful only on flight instructors. At what point is a tire unsafe for flight? Get tires across cable, if any, to reduce initial rolling power required to taxi.
- Use overflow tube to demonstrate the wastefulness of having full fuel tanks in an airplane that is going to sit in the sun. Present real time airborne vs. POH figures.
- Starting and taxiing
- Verbalize all clearing as well as a swivel neck on the ground and in the air. The life you save may be your own.
- Make all yoke movements using one finger and the thumb. If you need more than two fingers you're doing something wrong. Remember, the yoke moves both back and up.
- Make learning to taxi a priority. Begin by explaining/knowing how rudder/nose gear geometry is configured. No brakes except for sharp turns and stopping. Make some 360s to headings then add yoke positions 90 degrees at a time. The first clue to a competent pilot is the way he taxis
- Control check uses 'thumbs up'. Thumb always points to up-aileron. Turn head to check that other aileron is down before reversing control.
- Teach/make throttle control movements with forefinger as a measure. From 800 rpm to 1700 rpm is one fingernail length. Practice until you can do it every time without looking. Learn the sound and feel of every power setting.

- It is not enough to clear final going from the runup area to the runway. Turn enough to protect yourself from an aircraft on close-in base.

Takeoff and Climb

- Except for x-winds, get the nose wheel off the ground and let the airplane fly itself off the runway. Don't force a takeoff. Note the nose attitude that gets you airborne at 60 knots. Pre-plan heading to be used for any x-wind runway alignment and options selected for engine failure on takeoff.
- Look back at runway above 300' to confirm that you are aligned and not drifting over adjacent runway. Make ten-degree cut away from adjacent runways at the departure end of the runway.
- Trim for hands-off climb, not within the range of speeds given in the POH, but on an exact V_a speed. Practice holding that speed while moving the trim through its full range of movement. Lock your elbow against the door panel to do this. If you ever fly with some out-of-trim yoke pressure a distraction will create a problem.
- Use climb-out as practice time for Dutch rolls. It helps you clear the flight path and gives x-wind skills you will need for landing.
- Always make your first airwork turn to the left. Any following traffic should be passing to your right. Fly at altitudes other than even thousands or five-hundreds when within 3000' of the ground. Select your area to be clear of common air routes and airways.
- Practice left/right climbing turns only at 30 degree bank. Take feet off rudder during entry and while in left climbing turns. Note that ball stays centered. P-factor. Practice using the right rudder to come out of a left turn with very little aileron. Practice making right climbing turns using right rudder for your entry. Note that at 30 degrees of right bank your yoke is held as though in a left turn. To level wings from a right climbing turn relax on the right rudder and use the aileron.

Level Flight

- While the initial standard may be lower, you should perform all maneuvers toward a student goal of 5-5-50. This means within five degrees of heading, five knots of airspeed and fifty feet of altitude. Pilots 2-2-20
- Level aircraft using wingtip and horizon then hold nose in position while trimming. Don't reduce power until you have reached level cruise speed. Let go of yoke and watch the nose. Any rise or fall of the nose is indicative of improper trim setting. Position nose again and re-trim until nose holds level flight. Put hands up by windshield. Nose should go down. Place hands overhead behind you. Nose should go up. Only way to fly.
- Put aircraft into 30 degree bank and trim nose-up half a turn. Let go yoke and use rudder to keep angle of bank. Aircraft should be able to maintain altitude and bank without your touching yoke. Left or right no difference. This ability is designed into the aircraft. Aircraft will attempt to level itself at less than 30 degrees of bank. Aircraft will attempt to roll on over at more than 30 degrees of bank. Knowing the how to use the inherent stability of the aircraft makes flying safer. Practice.

- Work on 30 degree banks with 90 degree turns continuously alternating from left to right. Always clear when the wing is above the horizon. Lead recovery by 15 degrees and try to get bank reversals to occur on selected headings.
- Work on leaning procedure every time you level off. It should be done at any level flight altitude. Make use of mixture as common as use of carburetor heat. Just don't get the two crossed up.
- Make going to slow-flight a matter of time. Learn to have the aircraft transition from level cruise to hands-off slow-flight in a matter of seconds. Any such transition can be done in half the normal time you usually take with practice. Time how long it takes you. Now, work to cut it in half. Works.
- Apply flaps without looking at flap indicator. Use 3-4 count for every ten degrees of extension. Air loads speed up retraction so use different count. Practice milking up flaps on ground before doing so in the air.
- At altitude, make opportunities to fly minimum controllable. The true test of flying skill is finding your own lower speed limits and knowing what it takes to maneuver when there.