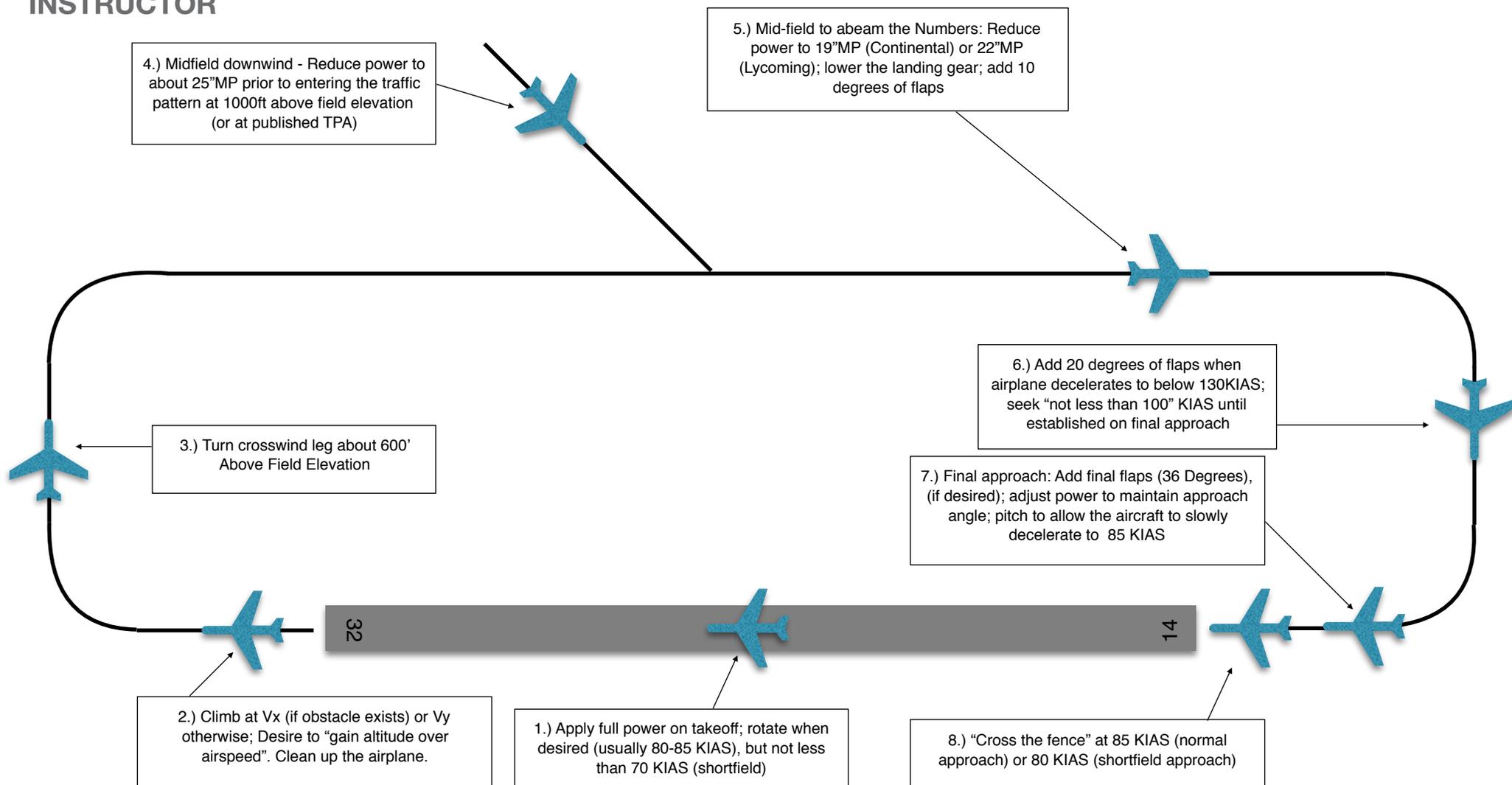


Piston PA-46 (Malibu, Mirage, Matrix, M350)

Traffic Pattern Operational Practices (OPs)



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Operating Practices (OP's) are recommended because they have proven to be successful under most circumstances with a normally operating PA46. OP's provide a repeatable flow for a pilot in a critical phase of flight, creating a repeatable "normal observation". Thus, when a deviation from "normal" occurs, the deviation becomes obvious and the pilot can make corrections. Certain situations could exist that would make it prudent for a pilot to deviate from the OP's detailed below. Some of those circumstances are: icing conditions present or icing on the airframe, strong crosswinds, turbulence, excessively short or excessively long runways, a glide slope that is significantly different than 3 degrees, strong headwinds on approach, and an emergency/abnormal situation. Good pilot decision-making is required in any flight regime to ensure the safety of the flight. In all scenarios, adherence to the FAR's (Federal Aviation Regulations) is mandatory and information in the POH (Pilot Operating handbook) supersedes any practices illustrated below.

- 1.) **Full Power:** On all piston PA46's, full power is required on takeoff. For a normal takeoff, allow the airspeed to increase to 85 KIAS before rotation. The minimum speed to allow the nose wheel to come off the ground is 70 KIAS as nose wheel contact with the ground is required in some situations to keep the nose from yawing left. Sufficient speed (70 KIAS) is required for the rudder to have enough authority to counter the left turning tendency provided by the engine. A "soft field takeoff" technique does not exist for the PA46 (do not "hold the nose wheel off the ground" on the takeoff roll).
- 2.) **Clean up and climb:** If an obstacle exists, climb at V_x until clear. Once clear of all obstacles, allow the airplane to accelerate to V_y . The objective is to "gain altitude" instead of "gaining airspeed" until the airplane is about 1000ft AGL. At 1000ft AGL, more options exist (possible return to the runway, find an alternate landing location nearby, etc) in case an emergency occurs that requires the pilot to "land as soon as possible" (engine failure, fire, etc). Once passing 1000ft AGL, accelerate to V_y (or above, if desired for engine cooling). The landing gear and flaps should be retracted when sufficient altitude and airspeed exist.
- 3.) **Turn Crosswind:** Turn crosswind at about 600ft AGL.
- 4.) **Enter the downwind:** Whether approaching from closed traffic or from a 45 degree approach to downwind, reduce the power to 25"MP before reaching mid-field downwind. Pattern altitude for the PA46 should be 1000ft AGL, or as published in flight publications.

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5.) **“Abeam the numbers”**: When “abeam the runway numbers” reduce power to about 22”MP (Lycoming) or 19”MP (Continental). Lower the landing gear and add 10 degrees of flaps. The hand should not be removed from the gear handle until the following are observed or completed:

- a.) Three green landing gear lights are observed
- b.) Brake pressure is tested
- c.) Move the balls of the feet to the bottom pad of the rudder pedal

After the gear is extended, 10 degrees of flaps should be added (and verified by the flap gauge)

6.) **Add 20 degrees of flaps**: For most PA46’s, Vfe (20 degrees) is above 130 KIAS. The airplane should have a power setting and drag setting sufficient to reduce the speed to well under 130 KIAS. A minimum 20 degree flap setting is preferred because if all three wheels of the landing gear are not safely locked in the down position, the flaps setting of 20 degrees will activate the Gear Warning (audible alert and GEAR WARN light). Do not allow the airspeed to fall below 100 KIAS until established on final approach.

7.) **Final approach**: Adjust power to maintain the desired approach angle, adjust pitch to maintain airspeed.

When a safe landing can be safely attempted, add flaps to 36 degrees. 36 degrees of flaps should not be added until:

- a.) The runway is in sight
- b.) A safe landing can be reasonably expected
- c.) The approach is stable

36 degrees of flaps makes a go-around or a bailed landing more difficult to perform due to the increased drag. The piston versions of the PA46 do not have an abundance of excess power, making a 36 degree flap go around more challenging. If strong crosswinds are present, or the pilot prefers to approach the runway with lesser flaps, a landing with less-than-full flaps can be performed.

The airspeed should be allowed to decelerate to 85 KIAS on final approach.

The RED button (autopilot disengage button) on the yoke should be pressed before landing to ensure that the yaw damper is OFF before touchdown.

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8.) **Cross the fence:** On short-final reduce the power gradually to idle, approach the runway at 85 KIAS for a normal landing, or at 80 KIAS for a short-field landing.

Go Around (if required): If the runway is not clear of obstacles, a stable approach is not present, or a safe landing cannot be made successfully, a go-around must be performed. A go-around always includes these actions:

- a.) Pitch up: to 7.5 degrees nose up
- b.) Power up: Throttle, prop control, and mixture full forward
- c.) Clean up: Gear, flaps, and other drag-producing devices should be retracted