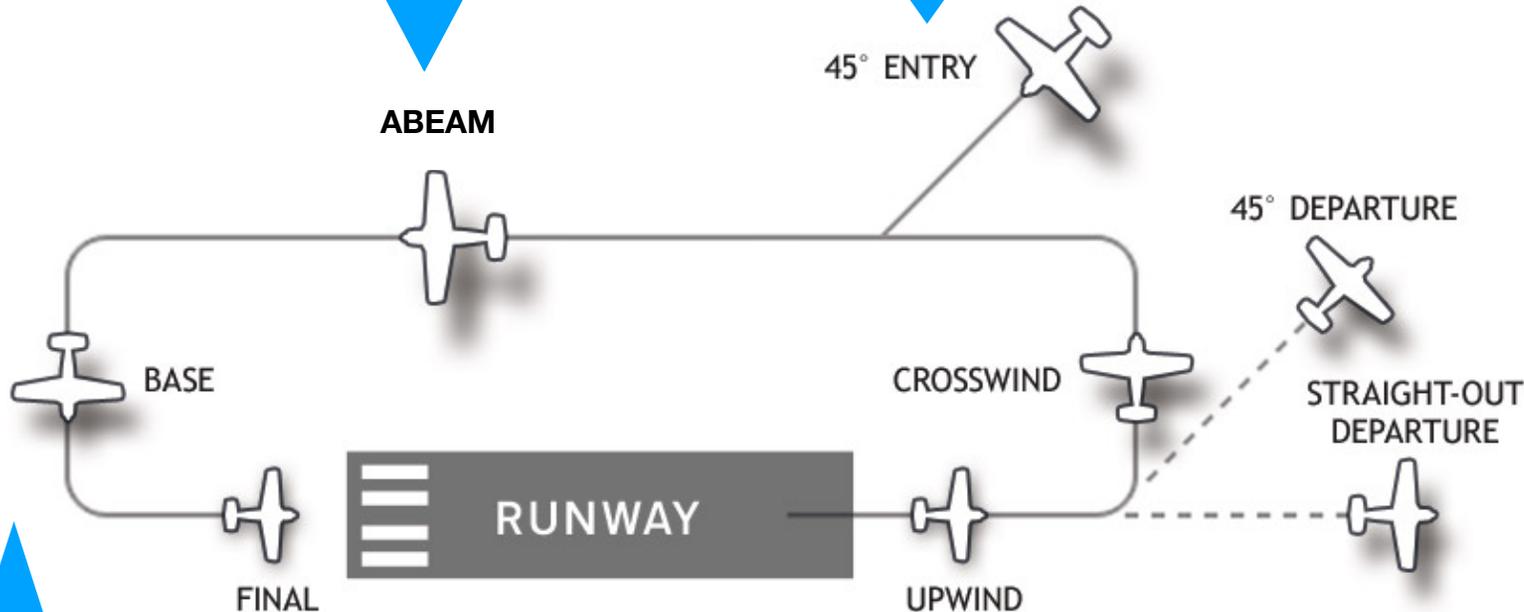


172N Pattern Profile

ABEAM POINT
Lights: Landing ON
Carb Heat: ON
Power: 1800 RPM
Mixture: Enrich
Flaps: 10* below 110 KTS
Trim: 1-2 swipes nose down
Airspeed: 85 KIAS
Vertical Speed: 300-500 FPM
"Recheck throttle for 1800 RPM"

45* & DOWNWIND
Power: 2300 RPM
Pitch: Level @ pattern alt
Trim: Level Flight
Airspeed: 90-95 KIAS
Vertical Speed: 0 FPM



BASE
Power: 1800 RPM
Flaps: 20* below 85 KTS
Trim: AS NEEDED
Airspeed: 75 KIAS
Vertical Speed: 300-500 FPM
"Recheck throttle for 1800 RPM"

FINAL
Power: 1500-1800 RPM
Flaps: 30-40* below 85 KTS
Trim: AS NEEDED
Airspeed: 65 KIAS
Vertical Speed: 300-500 FPM
"Recheck throttle as needed"

TAKEOFF
Lights: Landing ON
Carb Heat: OFF
Power: FULL
Mixture: SET FOR CLIMB
Flaps: UP
Trim: 1-2 swipes nose UP
Airspeed: 70-75 KIAS
Vertical Speed: BEST RATE
"Recheck throttle for FULL"

172N Pattern Profile

NOTES:

What follows is my own technique and is generally not set in stone nor similar to other's methods, but I find it useful on a number of levels including:

- Minimum physical checklists required in critical phase of flight (i.e. 1000 ft AGL and below) and in and on the vicinity of runways and taxiways
- Minimum configuration changes after abeam point resulting in a highly consistent and stable approach profile
- Maintains safe airspeeds at all phases and configurations with an acceptable margin of safety (i.e. 75 KTS w 0 or 10* of flaps on downwind at 1500 RPM isn't, IMO, ideal).

For takeoff checks, abeam (before landing) checks, and after landing checks in the 172N, I use the flow "Lights, Carb Heat, Throttle, Mixture, Flaps". This sets me up nicely and accomplishes everything on the checklist for the respective phase of flight. For instance, abeam my touchdown point, "Lights on (landing and strobes), Carb heat ON or HOT, Throttle back to 1800 RPM, Mixture enriched, flaps 10* below 110 KIAS". Off the runway after landing, "Landing lights and strobes off, carb heat cold or OFF, throttle to 800-1000 RPM, mixture leaned for taxi, flaps up".

An alternative to this flow that covers the appropriate items that is generally used for complex aircraft, an acronym called "CGUMPS" for carbureted engines or just "GUMPS" for injected engines. It stands for "Carb heat on, Gas (fullest tank with boost pump on in low wing aircraft. fuel selector to both in the cessa), Undercarriage (gear and flaps), Mixture (enriched for landing), Prop (FULL RPM for constant speed props), and Seatbelts secure".

The procedures outlined in the diagram above are constructed as a starting point for any approach profile. It ensures minimum pitch/power/trim changes after the airplane has been configured at the abeam point, and usually only requires small power adjustments (50-200 RPM) on final to allow for wind and imperfect base and final turns (i.e. turning downwind to base too close or too far from the runway resulting in aircraft being high or low on final approach). The downwind base turn ideally is executed AFTER the 20* flap setting is selected, at the 45* point to the touchdown point, approximately 200 ft below pattern altitude. The Base to Final turn should be executed to avoid overshooting the final approach path at approximately 500-600 ft AGL, after selection of 30* flaps which will help (flaps + turn) the aircraft slow from 75 to 65 KIAS, resulting in a configured, stable descent profile on the completion of the base to final turn (approximately 400-500 FT AGL). If the aircraft is NOT configured and stable (on airspeed, on centerline, on glidepath w/ < 800 FPM descent rate) by 300ft AGL, a go-around should be executed. *When executing a short or soft field approach, full flaps (40*) should be used with a 60 KIAS approach speed. 1900-2000 RPM will be generally be required to maintain a desired glide-path on final approach.

When on short final it is good practice as one is learning crosswind technique to get from a crab to a slip early (before ground effect) to give one the opportunity to gauge crosswind speed and avoid excessive maneuvering in ground effect. Remember, always keep the nose pointed down to your visual aiming point until reaching ground effect, at which point the round-out can commence.

When reaching ground effect, I teach "Power out, round out, eyes out". Once in ground effect, smoothly bring the power to idle and the nose to level (power out, round out) and transition your eyes out towards the end of the runway. This allows us to pick up slight sink rate changes in our peripheral vision, which is better than our central vision for detecting movement. The round-out gives an opportunity to remain level and bleed off excess airspeed before commencing our flare. Once a gentle sink rate is established and perceived outside the windscreen, we can add ever-increasing and smooth application of nose-up pitch to ensure a soft touchdown on the main wheels with minimum airspeed.

Fly safe,

Jeremy Mitchell
Flight Instructor