

PRIVATE PILOT GROUND SCHOOL

MODULE 3-8 — MANEUVER BRIEFS: AREAS IV AND V TO ACS STANDARDS

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FACTS TO REMEMBER

KNOW THESE COLD

- Every checkride maneuver gets a standing brief before the flight that flies it: purpose, setup and configuration, target speeds, the ACS standard, and the common errors.

Source: NA (module convention; standards themselves are 4-R.p48-p59)

- Normal takeoff configuration is the POH's — flap setting, trim, and controls positioned for the wind — set and checked before taking the runway, not after full power.

Source: POH/AFM sect. 4 (pin-needed); AFH ch. 5 (pin-needed)

- The short-field takeoff starts at the very beginning of the usable runway in the POH's short-field configuration — runway behind you is distance the chart assumed you had.

Source: AFH ch. 5 (pin-needed); POH/AFM sect. 4 (pin-needed)

- Short-field technique: hold the brakes, set full power, check the engine instruments, then release — the roll begins with the engine already proven.

Source: AFH ch. 5 (pin-needed)

- Rotate at the POH speed and climb at the obstacle-clearance speed until the obstacle is cleared, then lower the nose to VY — pulling off early or climbing steep and slow trades away the margin the chart assumed.

Source: AFH ch. 5 (pin-needed); POH/AFM sect. 4/5 (pin-needed)

- Soft-field takeoff configuration: the POH flap setting with full aft yoke before the roll begins — the elevator lifts the nosewheel out of the drag as soon as it can fly.

Source: AFH ch. 5 (pin-needed)

- The soft-field takeoff is a weight transfer: from wheels to wings as early as possible, because a wheel in soft surface is drag and a wing in clean air is lift.

Source: AFH ch. 5 (pin-needed)

- Lift off in ground effect below normal climb speed, then level to accelerate within ground effect — climbing out before reaching climb speed settles the airplane back onto the surface.

Source: AFH ch. 5 (pin-needed)

- Soft-field landing: touch down at the minimum controllable speed, hold the nosewheel off with elevator, and keep the airplane rolling — an airplane stopped on a soft surface may be an airplane staying there.

Source: AFH ch. 8 (pin-needed)

- The short-field approach is flown to a chosen touchdown point at the POH speed — extra knots become float, and float is touchdown distance you cannot get back.

Source: AFH ch. 8 (pin-needed)

- A forward slip exists to steepen the descent without gaining airspeed — used when high on final, against an obstacle, or when flaps are unavailable or unwise.

Source: AFH ch. 8 (pin-needed)

- In a slip the fuselage's side does the work: altitude is spent as drag while pitch holds the approach speed — energy management by geometry, not by airspeed.

Source: AFH ch. 8 (pin-needed)

- Wind correction in a forward slip: slip toward the crosswind — low wing into the wind, opposite rudder — so that removing the slip leaves the crosswind correction already in place.

Source: AFH ch. 8 (pin-needed)

- The slip comes out before touchdown with the longitudinal axis aligned to the runway — touching down misaligned side-loads the landing gear.

Source: AFH ch. 8 (pin-needed)

- The go-around begins with immediate, smooth, full power and pitch to arrest the descent — everything else waits.

Source: AFH ch. 8 (pin-needed)

- Go-around configuration is cleaned up in stages per the POH — flaps come up incrementally, after the descent is stopped and the speed is safe; dumping all flap at once settles the airplane. (The trim-force trap is 1-5.p24.)

Source: AFH ch. 8 (pin-needed); POH/AFM sect. 4 (pin-needed)

- Steep-turn entry: clear the area, then roll to 45 degrees, adding power and back pressure as the bank passes about 30 — the doubled load factor demands more lift and more thrust.

Source: AFH ch. 9 (pin-needed)

- Lead the steep-turn rollout by about half the bank angle — begin rolling out roughly 20 degrees before the entry heading.

Source: AFH ch. 9 (pin-needed)

- Altitude loss in a steep turn is corrected bank-first: shallow the bank, raise the nose, then re-establish — pulling harder at 45 degrees only tightens the descending spiral. (Overbanking mechanism: 1-5.p43.)

Source: AFH ch. 9 (pin-needed)

- Ground reference maneuvers exist to teach wind-drift correction — holding a chosen ground track while the wind works on the airplane, the skill the traffic pattern is made of.

Source: AFH ch. 6 (pin-needed)

- The bank in a ground-reference turn tracks groundspeed: steepest turning downwind, where groundspeed is highest, and shallowest turning upwind.

Source: AFH ch. 6 (pin-needed)

- Straight segments of a ground-reference maneuver are held with a crab into the wind, and the maneuver is entered downwind — the steepest bank comes first, while attention is freshest.

Source: AFH ch. 6 (pin-needed)

- Division of attention is the graded risk of the maneuvering Tasks: track the reference with brief glances while flying the airplane by attitude — fixation on the point, at low altitude, is the built-in trap.

Source: AFH ch. 6 (pin-needed); FAA-S-ACS-6C V

GOING DEEPER

- A sustained slip can unport a fuel-tank outlet and interrupt fuel flow — know the POH's slip limitations and which tank is feeding before holding one.

Source: POH/AFM (pin-needed); AFH ch. 8 (pin-needed)

- Slips with flaps extended are restricted or cautioned against in some types — disturbed airflow over the tail can bring pitch oscillation or a tail stall; the POH's word governs.

Source: POH/AFM (pin-needed); AFH ch. 8 (pin-needed)

- In a slip the airspeed indicator may misread from disturbed static and pitot flow — hold the known pitch attitude and carry margin rather than chasing the needle.

Source: AFH ch. 8 (pin-needed); POH/AFM (pin-needed)