

Private Pilot Flash Cards C-172

Minimum controllable airspeed

- 1500 feet above ground level (AGL)
- Strait and level flight
- Select a heading
- Carb heat on
- 1500 rpm
- Air speed in white arch
- 10 degrees of flaps
- Slow to stall buzzer (control speed with pitch, altitude with power)
- Maintain altitude
- Maintain coordination
- Shallow banked turns to avoid excessive load factor
- Lead roll out turns by $\frac{1}{2}$ bank angle

Recovery

- Carb heat in
- Full power
- Maintain altitude, selected heading
- Flaps up and maintain airspeed above 60 with pitch
- Check heading and altitude

Power Off Stall (simulates stalling when landing)

- 1500 feet above ground level (AGL)
- Strait and level flight
- Select a heading
- Carb heat on
- 1500 rpm
- Air speed in white arch
- 10 degrees of flaps (below 85 KIAS)
- Slow the airplane down while maintaining altitude and heading
- Flaps 20 degrees below 75 KIAS
- Flaps 30 degrees below 65 KIAS
- Flaps 40 degrees below 55 KIAS
- Power to idle, continue to slow to buzzer, yoke back (maintain altitude and heading)
- STALL

Recovery

- Swoop to level flight
- Carb heat in
- Full power
- Flaps up incrementally above 50 KIAS, positive VSI
- Check heading and altitude

Power on stall

- 1500 feet above ground level (AGL)
- Strait and level flight
- Select a heading
- 1500 rpm
- Slow to 55 KIAS, no flaps (maintain altitude and heading)
- Full power (carb heat in), 2 count
- Pitch up 20 degrees
- **Add up to 10 degrees of bank if demonstrating a turning power on stall**
- Slow to stall buzzer (maintain coordination)
- At buzzer pull yoke full back
- STALL

Recovery

- Let nose gently fall to horizon
- Use rudder (feet) to level wings if needed
- **DO NOT USE AILERON TO LEVEL WINGS**
- No secondary stall
- Check heading and altitude

Steep Turns

- 1500 feet above ground level (AGL)
- Strait and level flight at or below Va – 97 KIAS
- Select a heading
- 45 degrees of bank (maintain altitude)
- Use horizon line to maintain bank, cross check instruments
- **if decent – relax bank angle, add back pressure, re-establish bank
- **if climb – reduce power, increase bank
- Lead roll out by ½ bank angle, 360 degree turn (primarily use outside reference)
- Slight forward pressure at level to prevent balloon
- Check heading and altitude

Go Around

- Execute when landing not 100% or when told
- Carb Heat in

- Full Power
- Level flight (stop decent)
- Flaps up incrementally, maintain above 60 KIAS
- **Any speed above 60 KIAS should be traded for altitude until at desired altitude

Forward Slip to Landing

- Carb heat on
- Power idle
- Bank into wind
- Full opposite rudder
- Forward pressure on yoke to maintain airspeed 60 KIAS or greater
- Use aileron to control ground track, pitch to control airspeed
- **BE CAUTIOUS OF STALL WHEN CROSS-CONTROLLED - DO NOT STALL!
- When desired altitude is lost gently release rudder and bank (maintain airspeed)
- Land as normal, remembering you are landing without flaps (higher groundspeed)

Crosswind Take Off and Landing

- 15 knot crosswind component MAX
- Maintain 65 KIAS final, and max flaps 20 degrees
- Ailerons control ground track
- Rudder points nose down the runway
- When on ground increase aileron input to full into the wind
- When on ground steer with feet!

S-Turns (across a road)

- **Maintain situational awareness: altitude and speed within: +/- 100 feet and altitude 10 knot KIAS
- 1000 feet AGL, clear area
- Establish the airplane on a downwind heading (tailwind) and note the heading
- Select a road or prominent straight line that runs crosswind
- As the airplane crosses the reference line, enter a steep bank (right or left)
- Gradually reduce bank angle as necessary to establish a perfect half circle
- **You want to time the turn so that as the roll out is completed, the airplane is crossing the road perpendicular to it
- The airplane is on the upwind side of the maneuver; a SHALLOW bank should be started in the opposite direction to begin the second half of the "S"
- Gradually increased bank as necessary

Short Field Take Off

****Use all available runway**

- 10 degrees of flaps
- Line up on centerline
- Hold brakes
- Full power
- Check engine
- Release brakes
- Vr-55
- Climb out at 58 KIAS until 50' AGL
- Vx- 60 KIAS
- Flaps Up incrementally

Short Field Landing

****Goal – land on a specific spot on the runway, and stop as quickly as possible.**

- Normal approach to landing
- Get into ground effect before your landing point
- Float in ground effect, hold airplane off ground until all energy is out (nose high altitude)
- Ideally the airplane stops flying right above your landing point
- If short, add a little power, then cut power above point to land
- If long, go around
- Upon touchdown, flaps up and stiff braking (without skidding tires)

Soft Field Take Off

****Goal – get off soft ground as soon as possible and accelerate in ground effect**

- 10 degrees flaps, roll onto runway with no brakes, no stopping, yoke back
- Full power, back pressure on yoke
- Wheelie down runway, DON'T DRAG THE TAIL
- When plane leaves ground, relax back pressure to stay in ground effect (15 feet off runway)
- Accelerate to 60 in ground effect
- Rotate out of ground effect
- Flaps up incrementally

Soft Field Landing

****Goal** – gently set the airplane onto a soft runway, protect nose gear

- Normal approach to landing
- When a few feet above the runway, add approximately 150 rpm to ease contact with earth
- Land nose high
- Power to idle
- Hold back pressure to keep nose off the ground as long as possible

Engine Failure in Flight

- FLY THE PLANE, Vg- 65 KIAS, Trim, you get 1 mile glide for every 1000' of altitude
- Find a place to land, start heading for it
- Sacred 7: primer in, master on, ignition both, throttle quadrant OUT MIDDLE IN, fuel selector both
- Hit starter if prop is not windmilling, if no start continue
- Fly to center of landing zone if possible, circle down
- Your goal is to be 1000' AGL downwind abeam your landing point
- Radio calls, transponder 7700
- Secure cabin:
 - Passenger seats back
 - Seat belts on
 - Protection in front of faces
 - Doors open
 - Mixture off
 - Fuel off
 - Ignition off
- Set up for best soft field landing (nose high)
- Full flaps when landing is assured
- Master off
- Land and exit

PARE (spin recovery)

- P- Power off
- A- Ailerons Neutral
- R- Rudder opposite of spin to break spin, then neutral
- E- Elevator forward to get airspeed/break stall, then swoop to level flight