



Private Pilot maneuvers study guide for C-172

This study guide is meant to be used for “arm-chair flying”. This will help students practice the steps of the maneuvers at home when unable to fly.

Pre Maneuvers checklist:

1. Clearing turns – must total 180*
2. Fuel selector – Both
3. Mixture – Rich
4. Throttle – As needed
5. Carb Heat – Cold/in
6. Primer – Locked

Slow Flight:

1. Altitude – above 1500ft AGL
2. Carb heat – on/out (hot)
3. Throttle – 1700rpm
4. Airspeed – pitch to reduce airspeed to within the white arc, approx 85 KIAS
5. Flaps – Add one notch at a time
6. Slow to 55 KIAS OR as instructed
7. Pitch to maintain Airspeed
8. Power to maintain Altitude

Recovery:

1. Carb Heat – off/in (cold)
2. Throttle – FULL
3. Pitch to increase airspeed
4. Flaps – 20* (or reduce one notch at a time)
5. Flaps – 0* once at 65 KIAS
6. Return to cruise flight

Ground Reference Maneuvers:

1. Airspeed – below V_a of 95 KIAS
2. Altitude – 600 to 1000 ft AGL
3. Enter on the downwind
4. Exit on the downwind

Power Off Stall

1. Altitude – Above 1500ft AGL
2. Carb heat – On (hot/out)
3. Throttle – 1700RPM
4. Airspeed – Pitch to reduce airspeed inside white arc, approx 85 KIAS
5. Flaps – Add one notch at a time until full flaps are applied
6. Throttle – Idle
7. Establish stabilized decent
8. Increase pitch (pull back on yoke)
9. Maintain coordination with rudder
10. -Stall-

Recovery:

1. Carb heat – off (cold)
2. Throttle – FULL
3. Pitch for level flight to increase airspeed (AIRSPEED IS LIFE)
4. Flaps – 20*
5. Ailerons – Neutral
6. Rudder – coordinated
7. Flaps – 0* once at least 65 KIAS
8. Return to cruise flight

Power On Stall:

1. Altitude – Above 1500ft AGL
2. Carb heat – On (hot)
3. Throttle – 1700RPM
4. Use pitch to slow down to rotation speed aprox 55 KIAS
5. Apply power (at least 65%) and pitch up
6. Carb heat – off (cold/in)
7. Maintain coordination and heading (RIGHT RUDDER)
8. -Stall-

Recovery:

1. Reduce back pressure and drop the nose to the horizon to increase airspeed (AIRSPEED IS LIFE)
2. Throttle – Full
3. Airspeed – Increase to Vx or Vy
4. Return to cruise flight
5. Be careful to not let nose pitch back up too aggressively as to induce a secondary stall

Steep turns:

1. Throttle – 2200 rpm
2. Airspeed – below Va, 95 KIAS
3. Line up on a cardinal heading (N,S,E,W)
4. Establish 45* bank, Use outside sight picture to maintain proper bank angle
5. Back pressure and rudder – As needed to maintain coordinated bank and altitude
6. Turn 360*
7. Begin roll out to wings level approx 20* early

Short field Takeoff:

1. Flaps – 10*(or as directed by the POH)
2. Runway – Use all available (pull as close to the grass as possible)
3. Brakes – Hold
4. Throttle – FULL
5. Verify – RPMs at Max and engine instruments are green
6. Brakes – release
7. Rotate – at 55 KIAS
8. Climb airspeed – 65 KIAS Vx
9. Above the obstacle – retract flaps and pitch for 75 KIAS Vy

Short field landing (once established on Final)

1. Flaps – Full
2. Airspeed – pitch for 60 KIAS
3. Power – as needed to set proper decent rate
4. Touchdown within 200 feet of aiming point (aim nose in front of touchdown point)
5. Apply full brakes (Say out loud, “Simulated Maximum braking”)

Soft field Take off:

1. Flaps – 10*(or as directed by the POH)
2. Yoke – full aft (protects the nose gear)
3. Line up centerline, DO NOT STOP
4. Throttle – full
5. Yoke – Release a little back pressure to avoid a tail strike, but still maintain some backpressure
6. Lift off the ground ASAP and push nose down to accelerate in ground affect
7. Accelerate to 65 KIAS
8. Climb out
9. 100 feet AGL retract flaps and pitch for 75 KIAS Vy

Soft Field landing: (once established on Final)

1. Flaps – Full
2. Airspeed – Pitch for 60 KIAS
3. Power – as needed for proper decent rate
4. Add 100-200 RPMs briefly while in ground affect
5. Flare and Touchdown very gently on the main gear
6. Backpressure on yoke at all times to protect the nose
7. Little to no braking needed as soft field will naturally slow down the AC

Approaching an airport to land & normal landing:

1. Ten miles out, listen to WX on ATIS/ASOS
2. Announce yourself to the area(Call tower if entering controlled airspace)
3. Determine the landing runway
4. Enter the traffic pattern a 45* angle for the left downwind. (Or right if nonstandard traffic)
5. Abeam the touchdown point
6. Apply Carb heat, reduce power to 1700 RPMs, pitch for 85 KIAS, 10* flaps(ASI in the white arch)
7. Turn base, pitch for 75 KIAS, flaps and power as needed
8. Turn final, pitch for 65 KIAS, flaps and power as needed
9. Apply cross wind correction if needed
10. Begin flare in ground affect, hold as needed until touchdown.
11. Exit onto taxiway once Aircraft has slowed to Taxi speed(or as directed by Tower)
12. After landing checklist once clear of the runway

Emergency Decent – Simulated Engine Failure

1. Apply Carb Heat and Pull throttle to Idle
2. A-B-C-C
 - a. **A** – Airspeed, pitch for 65 KIAS
 - b. **B** – find Best place to land and turn towards it
 - c. **C** – Checklists, attempt to restart or troubleshoot the engine
 - d. **C** – Communicate, 121.5 “Mayday...” Squawk 7700
3. Continue to maneuver to land at the best possibly location (field, road, grass strip etc...)
4. Once instructed - Level off and climb back up to a safe altitude