

Private Pilot Maneuvers

- For all maneuvers including climbs and descents, **fuel selector** is on **BOTH** and **mixture** is **FULL RICH**
- If a maneuver requires carb heat on a certain day (20-70 degrees F at altitude, low power setting) bring the power to 100 RPM **ABOVE** specified RPM, then add the carb heat. Carb heat reduces RPM.
 - **Example:** Power required for slow flight set up is 1800 RPM, bring the power back to 1900 RPM, then add carb heat
 - Applying the carb heat will then drop the RPM the final 100 needed to reach 1800 RPM
 - If carb heat is **not** needed, simply pull the power to the desired RPM setting for the maneuver

● Climbs

- Full power
- Pitch for 85 mph (Vy)
- Check and ensure that carb heat is cold (not pulled out)
- Maintain coordination with rudder

● Descents

- Check to see if carb heat is needed
- Power back to 1900 RPM
- Pitch for 100 mph
- This *should* give a 500 FPM descent

● Slow Flight

- Check to see if carb heat is needed
- Power back to 1800 RPM
- Maintain altitude while speed reduces
- Once within the white arc - flaps 10, 20, 30
- Maintain altitude while speed reduces to 65 mph
- Apply power back to 2000~ RPM
- Use pitch and power to maintain altitude and 65 mph
- **Recovery:** Full power, carb heat cold (if used), take out 10 degrees of flaps, once above 80 mph take out the last 20 degrees of flaps

● Power Off Stall

- Check to see if carb heat is needed
- Power back to 1800 RPM
- Maintain altitude while speed reduces
- Once within the white arc - flaps 10, 20, 30
- Maintain altitude while speed reduces to 70 mph
- Allow nose to drop slightly and create a 70 mph descent
- Gently pull power to IDLE
- Gently bring the nose up to the horizon and hold it on the horizon
- Use rudders to stay coordinated and do not allow the airplane to yaw left or right
- Hold the nose on horizon until the stall
- **Recovery:** Lower nose and full power, carb heat cold (if used) and take out the first 10 degrees of flaps, once at 80 mph gently bring nose up to a climb attitude and take out the last 20 degrees of flaps in increments, climb out at 85 mph (V_y)

● Power On Stall

- Check to see if carb heat is needed
- Power back to 1500 RPM
- Maintain altitude while speed reduces to 65 mph
- Full power, carb heat cold (if used)
- Pull the nose to 20 degrees pitch up
- Use rudders to stay coordinated and do not allow the airplane to yaw left or right
- Hold nose at or slightly above 20 degrees pitch up until the stall
- **Recovery:** lower the nose below the horizon, once at 80 mph gently bring the nose up to a climb attitude, climb out at 85 mph (V_y)

● Steep Turns

- 110 mph
- 2300 RPM
- 3500 ft MSL
- Be on a cardinal heading (360, 090, 180, 270)
- Choose an easily identifiable reference in front to help roll out of turns on

- **Short Field Takeoff**

- No flaps
- All available runway
- Hold brakes
- Full power
- Verify engine instruments in the green and max RPM (~2300)
- Release brakes
- Verify airspeed alive
- Rotate at 60 mph (V_r)
- Climb at 65 mph (V_x)
- Once clear of obstacle climb at 85 mph (V_y)

- **Short Field Landing**

- 40 degrees of flaps
- 65 mph on final
- Aiming point is the beginning of the runway
- After touchdown, reduce the flaps to 0 and gently apply full brakes

- **Soft Field Takeoff**

- 10 degrees of flaps
- Back pressure on the yoke
- Full power
- Verify engine instruments in the green
- Verify airspeed alive
- Back pressure should be enough to where nose wheel is off the ground
- Allow the plane to lift off when it is ready
- Lower nose gently to remain in ground effect until 75 mph
- Leave ground effect and climb at 85 mph (V_y)
- Once positive rate of climb is established reduce flaps to 0

- **Soft Field Landing**

- 40 degrees of flaps
- 70 mph on final
- Ensure nose wheel is protected by landing on main wheels first and holding the back pressure until nose wheel gently falls on its own (this should be the goal on all landings, not just soft field)

- **S Turns and Turns Around a Point**

- 1800 ft MSL (800-1000 ft AGL), and set up on a downwind
- 100 mph
- 2100 RPM

- **Engine Failure**

- **A** - Airspeed Vg (75 mph)
- **B** - Best place to land
- **C** - Checklist
- **D** - Declare (7700, 121.5)

- **Engine Fire**

- Mixture - IDLE CUT OFF (simulated)
- Fuel Selector - OFF (simulated)
- Pitch for 120 mph
- Once fire is out, run ABCD

- **Emergency Descent**

- Power - IDLE
- Carb Heat - ON
- Pitch for 100 mph
- 30 degree bank turn and look for best place to land
- Declare (7700, 121.5)

- **Normal Takeoff**

- No flaps
- Full power
- Verify engine instruments in the green
- Verify airspeed alive
- Rotate at 60 mph (Vr)
- Climb at 85 mph (Vy)

- **Normal Landing**

- 30 degrees of flaps
- 75 mph on final
- Aiming point is the runway numbers