* **Airport and Seaplane Base Operations**
  + Communications & Light Signals
    - Do good
  + Traffic Patterns
    - Altitude +-100 feet
    - Airspeed +-10 knots
* **Takeoffs, Landings, and Go-Arounds**
  + Normal Takeoff and Climb
    - Vy +-5 knots
  + Normal Approach and Landing
    - 1.3 Vso +-5 knots
    - Touch down -0/+200 feet from specified point
  + Soft-Field Takeoff and Climb
    - Vx or Vy +-5 knots
  + Soft-Field Approach and Landing
    - 1.3 Vso +-5 knots
  + Short-Field Takeoff and Max Performance Climb
    - Vx then Vy +-5 knots
  + Short-Field Approach and Landing
    - 1.3 Vso +-5 knots
    - Touch down -0/+100 feet from point
  + Power-Off 180° Accuracy Approach
    - Touch down -0/+200 feet from specified point
  + Go Around
    - Vx or Vy +-5 knots
* **Performance and Ground Reference Maneuvers**
  + Steep Turns
    - Altitude +-100 feet
    - Airspeed +-10 knots
    - 50°Bank +-5°
    - Roll out on heading +-10°
  + Steep Spiral
    - Not to exceed 60° bank
    - Airspeed +-10 knots
    - Roll out of heading +- 10°
    - No lower than 1500 feet AGL
  + Chandelles
    - Roll out at 180° point +-10°
  + Lazy Eights
    - 30° Bank at steepest
    - At 180° Point
      * Altitude +-100 feet
      * Airspeed +- 10 knots
      * Heading +-10°
  + Eights on Pylons
    - Maintain pylon position
    - Not to exceed 40° bank
* **Navigation**
  + Pilotage and Dead Reckoning / Diversion
    - Arrive at checkpoint +- 3 min
    - Altitude +-100 feet
    - Heading +-10°
* **Slow Flight and Stalls**
  + Slow Flight
    - Altitude +-50 feet
    - Heading +-10°
    - Airspeed +5/-0 knots
    - Bank +-5°
  + Power-Off Stalls
    - Heading +-10° or Bank <20° +-5°
  + Power-On Stalls
    - Heading +-10° or Bank <20° +-10°
  + Accelerated Stalls
    - No lower than 3000 feet AGL
    - 45° Bank
    - Recover at first indication
* **Emergency Operations**
  + Emergency Descent
    - Bank Angle between 30° and 45°
    - Airspeed +0/-10 knots
    - Level off +- 100 feet
  + Emergency Approach and Landing
    - Best Glide airspeed +-10 knots

**Slow Flight**

* Pre Maneuver Checklist
* Select visual reference
* Select altitude
* Power 1700 RPM
* Slowly add flaps to 40°
* Adjust power to hold altitude
* Adjust pitch to maintain desired speed
* Slow to stall warning horn – note speed
* Lower pitch to increase speed to turn off horn – note speed.
* Left turn to new heading reference
* Right turn back to original reference
* Climb 100’ – Descend 100’
* Return to cruise
  + Full power
  + Hold altitude and heading
  + Slowly retract flaps, 1 notch at a time

**Power Off Stall**

* Pre Maneuver Checklist
* Select visual reference
* Select altitude to begin
* Power 1700 RPM
* Slowly add flaps to 40°
* Upon reaching 75 MPH, pitch for 75 MPH
* Only now do you not hold altitude
* Select runway altitude (200-300 feet below present)
* 50 feet above target
  + Power to idle
  + Pitch for flare
* Hold flare attiude
* Announce stall warning horn
* Announce actual stall
* Recover
  + Pitch down & full power
  + Raise nose to Vy attitude
  + Slowly retract flaps, 1 notch at a time

**Power On Stall**

* Pre Maneuver Checklist
* Select visual reference
* Select altitude to begin
* Power 1700 RPM
* Upon reaching 65MPH
  + Full power
  + Pitch for nose high attitude
* Hold attitude as airspeed decreases
* Announce stall warning horn
* Announce actual stall
* Recover
  + Pitch down
  + Raise nose to Vy attitude

**Accelerated Stall**

* Pre Maneuver Checklist
* Select altitude ≥ 3000’ AGL
* Power 2000 RPM
* Coordinated turn at 45° bank
* Increase back pressure until stall
* Execute recovery

**Steep Turns**

* Pre Maneuver Checklist
* Select visual reference
* Select altitude
* Select airspeed (suggest 100 MPH)
* Bank 50°
* Add approximately 200 RPM
* Suggest nose up trim – 2 full motions
* Roll out on original heading
* Immediately begin turn in opposite direction
* There should be no pause at wings level
* When rolling from one direction to the other
  + Remember you have lots of trim
  + Push yolk forward to hold altitude
  + You also have extra RPM
    - Reduce RPM in transition
    - Return RPM once established in new direction
* When rolling out after both directions
  + Trim for cruise
  + Adjust power to maintain desired airspeed.

**Steep Spiral**

* Pre Maneuver Checklist
* Select ground reference – Begin upwind
* Select altitude to finish ≥ 1500’ AGL
* Abeam point – power to idle
* Pitch for L/D Max – 85 MPH
* Bank relative to groundspeed
* Bank not to exceed 60°
* At upwind position – normal cruise power for 1 second – then back to idle
  + Adjust pitch to maintain L/D Max
* Return to cruise after third 360° turn

**Chandelle**

* Pre Maneuver Checklist
* Select entry airspeed – suggest 100 MPH
* Select references – 90° & 180°
* Select initial altitude
* Roll into 30° bank
* Full power
* Continuous increasing pitch to 90° point
* Maintain pitch established at 90° point
* Continuously decrease bank until 180° point
* Roll out on 180° point – w/ stall warning
* Return to cruise while maintaining altitude

**Lazy Eights**

* Pre Maneuver Checklist
* Select references – 45° 90° 135° 180°
* Select initial altitude
* Select initial airspeed – suggest 100 MPH
* @45° - Max pitch up – approx 15° bank
* @90° - Level pitch – approx 30° bank
* @135° - Max pitch down – approx 15° bank
* @180° - Level pitch – Roll out on heading
  + Also airspeed & altitude same as entry
* Start immediately in opposite direction

**Eights on Pylons**

* Pre Maneuver Checklist
* Establish wind direction
* Select pylons – perpendicular to wind
* Calculate pivotal altitude – approx 850 AGL
* Select initial airspeed – suggest 100 MPH
* Enter 45° downwind between pylons
* Turn around 1st pylon to maintain visual reference line
* Entry is highest groundspeed = highest pivotal altitude
* Into wind is lowest groundspeed = lowest pivotal altitude
* Stay on pivotal altitude with groundspeed
  + If pylon appears to move behind – you are below pivotal altitude
  + If pylon appears to move ahead – you are above pivotal altitude
* Roll out between pylons
* Roll out is back to highest groundspeed
* Turn in opposite direction around 2nd pylon to maintain visual reference line
* Stay on pivotal altitude with groundspeed