

HIGH ALTITUDE MANEUVERS

3000 AGL

PTS – No lower than 1500 AGL

Normally performed at 3000 – 3500 MSL

Power on stall- Takeoff configuration

- 1 Clearing Turn Carb heat on and power back to 1700 rpm
- 2 Raise nose to maintain altitude
- 3 Reduce airspeed to about Vx
- 4 Carb heat off and power to about 2200 RPM (1/2 into the green arc)
- 5 Add 5-10 degrees bank for turning stalls (PTS says up to 20 degrees)
- 6 Raise nose to stall horn/buffet

RECOVER

- 1 Lower nose slightly below horizon
- 2 Apply full power and carb heat off
- 3 Accelerate to normal cruise speed
- 4 Straight and level
- 5 Power back to cruise

Power off stall- Landing configuration

- 1 Clearing Turn
- 2 Carb heat on and power back to 1700 rpm
- 3 10 degrees flaps and stabilize
- 4 20 degrees flaps and stabilize
- 5 30 degrees flaps
- 6 Reduce power to idle
- 7 Add 10 degrees bank if turning stall
- 8 Raise nose to stall horn/buffet

RECOVER

- 1 Lower nose slightly below horizon
- 2 Apply full power and carb heat off
- 3 20 degrees flaps and stabilize
- 4 10 degrees flaps and stabilize
- 5 Flaps up
- 6 Accelerate to normal cruise speed
- 7 Straight and level
- 8 Power back to cruise

Slow Flight/Minimum Controllable Airspeed (MCA)

- 1 Clearing Turn
- 2 Carb heat on and power back to 1700 rpm
- 3 10 degrees flaps and stabilize
- 4 20 degrees flaps and stabilize
- 5 30 degrees flaps
- 6 Wait for stall horn
- 7 Add power as needed to maintain altitude
- 8 Change pitch as needed to control airspeed

RECOVER

- 1 Lower nose, full power and carb heat off
- 2 20 degrees flaps and stabilize
- 3 10 degrees flaps and stabilize
- 4 Flaps up
- 5 Accelerate to normal cruise speed
- 6 Straight and level
- 7 Power back to cruise

Steep Turns

- 1 Clearing Turn
- 2 Set power to high cruise
- 3 45 degrees of bank plus or minus 5 degrees
- 4 Add backpressure as you roll through the 30 degree bank mark
- 5 Adjust back pressure and/or adjust bank to maintain altitude.
- 6 Roll out on the same heading you entered (360 degrees of turn)

Forward Slip

- 1 Clearing turn
- 2 Choose a long road with a direct head or tail wind
- 3 Apply rudder till nose is 30-45 degrees right/left of centerline.
- 4 Apply opposite aileron as needed to maintain straight flight/ground path.

Side Slip

- 1 Clearing turn
- 2 Choose a long road with a direct crosswind
- 3 Turn ailerons into wind and use opposite rudder as needed to keep the longitudinal axis parallel with the road (runway).

Notes: Add more or less aileron to slip the airplane sideways while using the rudders to keep the longitudinal axis parallel with the road (runway).

Simulated Engine Out

- 1 Clear area
- 2 Pitch for best glide speed
- 3 Check fuel selector valve and/or switch tanks
- 4 Check mixture control
- 5 Prime in and locked
- 6 Ignition on both
- 7 Radio to 121.5 call Mayday with tail # and location
- 8 Transponder 7700
- 9 Find area to land (land with rows in planted fields).

Unusual Attitude Recovery (Nose High – Airspeed Low)

- 1 Add Power
- 2 Lower Nose
- 3 Level wings
- 4 Then add power and change pitch as necessary to establish cruise flight.

Unusual Attitude Recovery (Nose Low)

- 1 Reduce POWER
- 2 Level wings
- 3 Raise NOSE
- 4 Then add power and change pitch as necessary to establish cruise flight.

GROUND REFERENCE MANEUVERS

600-1000 AGL

S-Turns Along a Road

- 1 Locate a long road that is perpendicular to the winds at altitude.
- 2 Clearing turn.
- 3 Enter maneuver perpendicular to the road at 800' AGL.
- 4 As soon as your wings cross the road, begin a coordinated turn to the right or left. You should complete a 180 degree turn or half circle (about 1/4 to 1/2 mile radius), rolling your wings level at the exact point you cross over the road. Your wings will exactly parallel the road. Once your wings have crossed over the road, immediately begin a turn in the opposite direction. You will again complete a half circle, rolling your wings level as you cross the road.

Notes

- 1 When flying downwind, the aircraft should be at its steepest bank in the turn.
- 2 When flying upwind, the aircraft should be at its shallowest bank in the turn.
- 3 The half circles should be symmetrical on each side of the road.

Turns Around a Point

- 1 Clear the area.
- 2 Enter the maneuver downwind at 800' AGL.
- 3 Pick a visible point away from towns or towers.
- 4 Maintain a constant radius of the object of 1/4-1/2 mile (about the same distance as on downwind).
- 5 Circle the point and roll out on your entry heading.

Notes

- 1 When flying downwind, the aircraft should be at its steepest bank in the turn.
- 2 When flying upwind, the aircraft should be at its shallowest bank in the turn.

TAKEOFFS AND LANDINGS

X-Wind Takeoff

- 1 place yoke fully into the wind
- 2 full power
- 3 as speed increases release some of the aileron deflection as needed for x-wind
- 4 ease back on yoke and as a/c flies itself off level wings and crab into the wind

X-Wind Landing

- 1 carburetor heat on (if applicable)
- 2 reduce power opposite spot of intended landing
- 3 set up glide of _____ KIAS, 1 notch of flaps
- 4 when 45° key position is reached, turn on to base, second notch of flaps, airspeed _____ KIAS
- 5 be aware of wind direction and velocity
- 6 turn to final and add last notch of flaps, airspeed _____ KIAS (use min flaps in strong x-wind)
- 7 set up slip with yoke into the wind
- 8 hold directional control with opposite rudder
- 9 maintain _____ KIAS until flare
- 10 as airspeed decreases during the flare, you will have to use more yoke pressure into the wind
- 11 after touchdown gradually place the yoke all the way into the wind and hold it there, with full back pressure

Soft Field Take-Off

- 1 apply desired flap setting
- 2 add full backpressure and full power
- 3 keep nose wheel just clear of the ground by releasing some backpressure after nose wheel lifts off
- 4 lift off at lowest possible airspeed
- 5 parallel the ground in ground effect until Vx is attained
- 6 retract flaps, when positive rate of climb (VSI and Altimeter) is achieved or when at least 100 feet AGL and clear of all obstructions and terrain. Once flaps are retracted climb at Vy

Soft Field Landing

- 1 carburetor heat on (if applicable)
- 2 reduce power opposite spot of intended landing
- 3 set up glide of _____ KIAS, 1 notch of flaps
- 4 when 45° key position is reached, turn on to base, second notch of flaps, airspeed _____ KIAS
- 5 turn to final and add last notch of flaps, reduce airspeed to _____ KIAS
- 6 touchdown should be made slightly above stall speed so that the nose wheel does not slam into runway surface (you may need to add some power just prior to touchdown to ease the airplane onto the runway)
- 7 the touchdown MUST be with the selected area at minimum rate of descent and minimum airspeed

Short Field Takeoff

- 1 consult performance chart to determine appropriate lift-off and climb speeds and distance required
- 2 use all available runway
- 3 apply flaps as per the POH
- 4 add full power & hold brakes
- 5 lift off and climb at Vx then retract flaps when positive rate of climb (VSI and Altimeter) is achieved or when at least 100 feet AGL and clear of all obstructions and terrain. Once flaps are retracted climb at Vy

Short Field Landing

- 1 carburetor heat on (if applicable)
- 2 reduce power opposite spot of intended landing
- 3 set up glide of _____ KIAS, 1 notch of flaps
- 4 when 45° key position is reached, turn on to base, second notch of flaps, airspeed _____ KIAS
- 5 turn to final and add last notch of flaps, reduce airspeed to _____ KIAS
- 6 reduce airspeed to _____ KIAS on final with full flaps
- 7 close the throttle during the flare so there is little or no floating before touchdown
- 8 apply brakes, if needed, with control yoke full aft. Keep flaps down if runway is wet or icy, otherwise retract flaps after touchdown
- 9 the touchdown MUST be made beyond and within 200 feet of a specified point

Full Flap Go Around

- 1 carb heat off & apply full power
- 2 flaps 2nd notch and maintain Vx until 100' agl or obstacle clearance
- 3 gradually retract flaps and accelerate to Vy level off at pattern altitude at cruise airspeed.