

## Maneuvers

### Slow Flight (Clean)

1. Cruise flight above 1500ft AGL
2. Clearing turns (Clear traffic and find an emergency landing area)
3. Power to 2500-3000rpm
4. Keep nose up to reduce speed and maintain altitude
5. Adjust pitch to maintain airspeed around 55-60 knots (About 5 knots above stall warning)
6. Adjust power to maintain altitude
7. Proceed to make turns, climbs, and descents using minor power adjustments
8. Recover by increasing power to full and simultaneously lowering the nose to build speed
9. Resume cruise flight (cruise checklist)

### Slow Flight (Dirty)

1. Cruise flight above 1500ft AGL
2. Clearing turns (Clear traffic and find an emergency landing area)
3. Power to 2500-3000rpm
4. Keep nose up to reduce speed and maintain altitude
5. Below 82 knots, lower flaps 1<sup>st</sup> notch, then 2<sup>nd</sup> notch
6. Increase power to ~3500rpm
7. Adjust pitch to maintain airspeed around 50-55 knots (About 5 knots above stall warning)
8. Adjust power to maintain altitude (Corrections of 500rpm are good)
9. Proceed to make turns, climbs, and descents using minor power adjustments
10. Recover by increasing power to full and simultaneously lowering the nose to build speed
11. Retract flaps incrementally.
12. Resume cruise flight (cruise checklist)

## Maneuvers

### Power-Off Stall (Landing stall)

1. Cruise flight above 1500ft AGL
2. Clearing turns (Clear traffic and find an emergency landing area)
3. Power to 2500-3000rpm
4. Keep nose up to reduce speed and maintain altitude
5. Below 82 knots, lower flaps 1<sup>st</sup> notch, then 2<sup>nd</sup> notch
6. Descend at 60 knots
7. Once an altitude of 150-200ft is lost, reduce power completely
8. Maintain slightly nose high angle of attack until stall (About 10° nose up)
9. Upon stall, lower nose, increase power to full
10. Once stall is broken, raise nose to begin a climb and incrementally reduce flaps when positive rate of climb is assured
11. Resume cruise flight (cruise checklist)

### Power-On Stall (Takeoff stall)

1. Cruise flight above 1500ft AGL
2. Clearing turns (Clear traffic and find an emergency landing area)
3. Power to 3000rpm
4. Keep nose up to reduce speed and maintain altitude
5. When airspeed reaches 55 knots increase power to full
6. Raise nose to an angle of around 25° to reduce speed
7. Upon stall, lower the nose and initiate a climb once stall is broken
8. Resume cruise flight (cruise checklist)

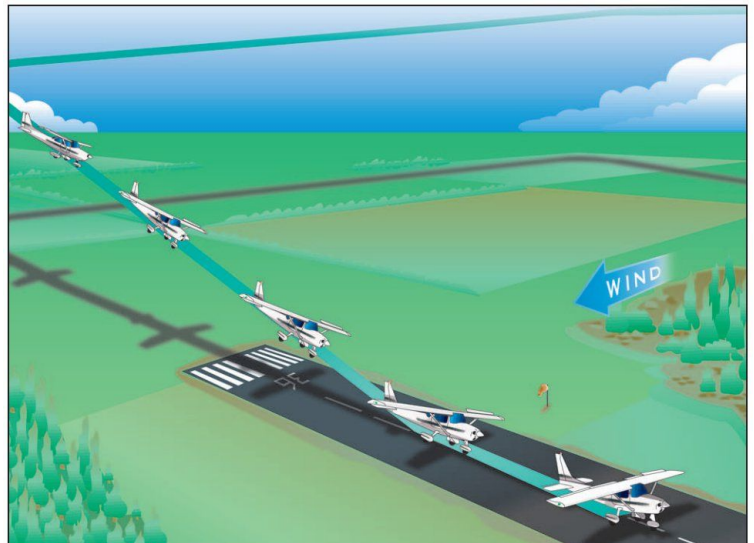
## Maneuvers

### Steep Turns

1. Cruise flight above 1500ft AGL
2. Clearing turns (Clear traffic and find an emergency landing area)
3. Airspeed to 85-95 (4300-4600rpm)
4. Verify altitude, airspeed, and heading (Reference point)
5. Roll into a 45° bank increasing power slightly when rolling through 30°.
6. Increase elevator back pressure to account for loss of vertical lift component.
7. When approaching initial heading (reference point) roll wings level
8. Roll directly into the opposite direction turn and repeat process.
9. Resume cruise flight (cruise checklist)

### Forward Slip to Landing

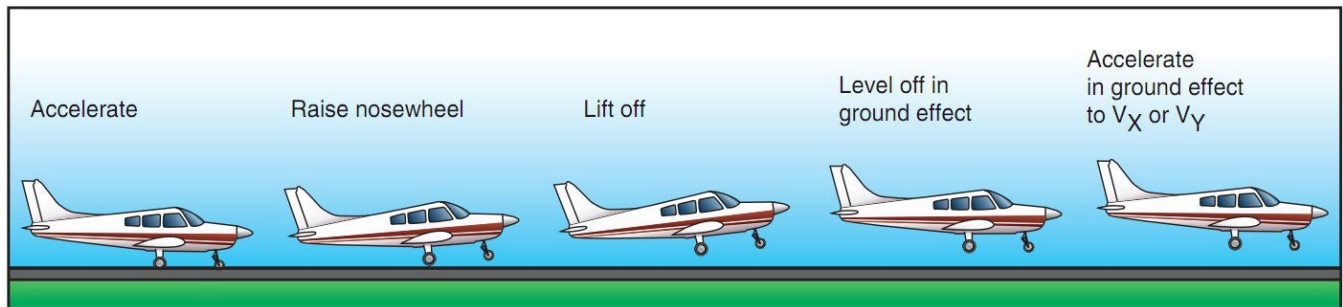
1. Complete pre-landing checklist
2. Once aligned with the runway reduce power to idle and smoothly apply full rudder in the direction opposite of the wind
3. Counteract rolling tendency with opposite aileron (wing down into the wind).
4. Maintain 60-65kts in descent
5. Use ailerons to maintain centerline of the runway
6. When approaching flaring point, smoothly reduce rudder input and maintain control over the runway
7. Proceed with planned landing
8. Complete after landing checklist



## Maneuvers

### Soft-Field Takeoff

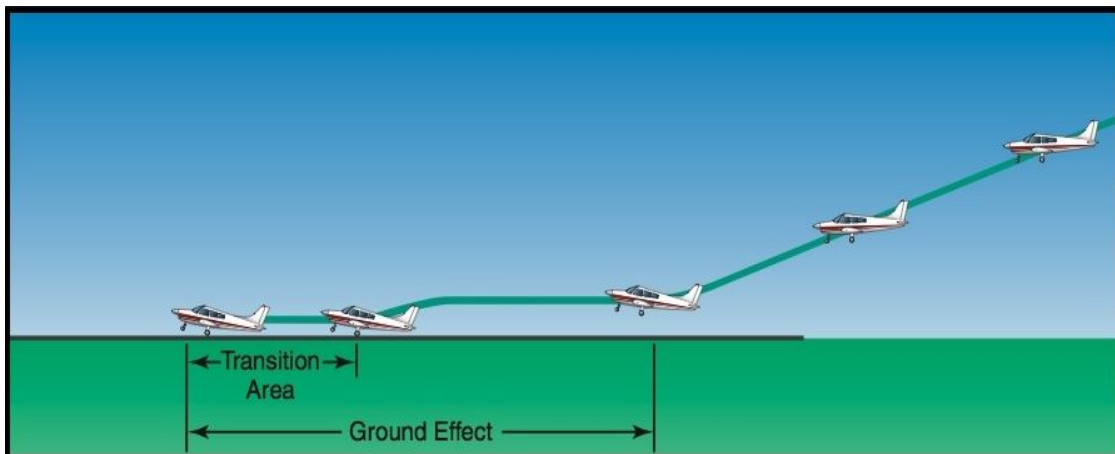
1. Complete before takeoff checklist with first notch of flaps
2. Hold stick full back taxiing onto the runway and apply crosswind correction as necessary
3. Increase throttle to full as aircraft is aligned with center of the runway (Check engine indications)
4. Adjust nose pitch to maintain an attitude in which the nose wheel is off the ground but tail is not scraping
5. When the aircraft lifts off (Will be prior to  $V_r$ ) lower nose slightly to maintain ground effect and accelerate to  $V_x$  or  $V_y$
6. Establish a climb at  $V_x$  if clearing an obstacle or  $V_y$  if no obstacles are ahead
7. Once clear of obstacles pitch for  $V_y$  and retract flaps
8. Complete climb checklist



## Maneuvers

### Soft-Field Landing

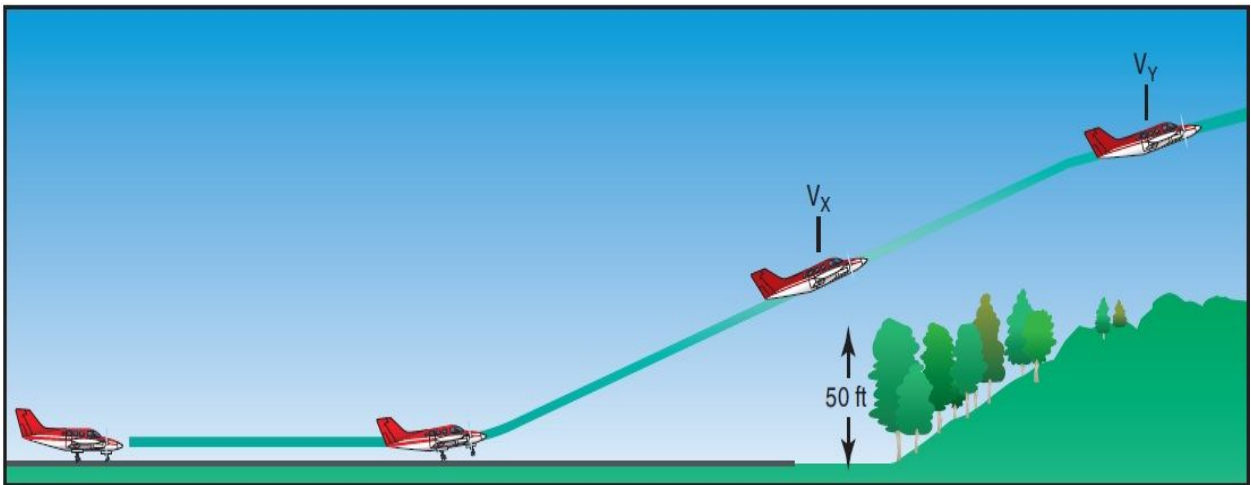
1. Complete Pre-Landing checklist
2. Abeam touch down point at pattern altitude, set power below 3000rpm and adjust as needed for glide
3. Below 82kts lower flaps to first notch
4. Establish a descent at 70-75kts until touch down point is 45° over your shoulder then turn base
5. Once base turn is complete, set flaps to second notch and establish 65-70kts descent
6. Begin final turn when approaching runway extended centerline and establish 60kt descent
7. Approaching runway (final), slow approach speed to 55kts
8. Once in ground effect raise the nose to continue to lose speed so the aircraft touches down at the slowest possible speed with the nose high off the ground (you'll hear the stall warning)
9. After touchdown, gradually apply full stick back to keep weight off the nosewheel as long as possible
10. Use minimal brakes to slow to taxiing speed
11. Once clear of the runway, complete after landing checklist



## Maneuvers

### Short- Field Takeoff

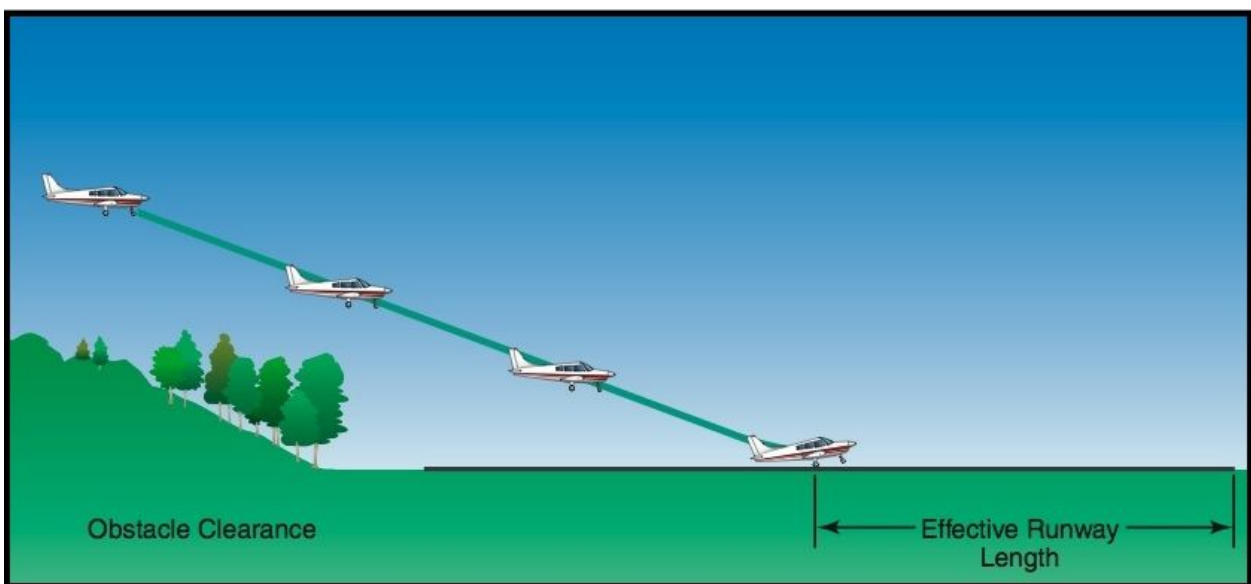
1. Complete before takeoff checklist with first notch of flaps
2. Align aircraft on the runway utilizing all available runway
3. Once aligned, hold brakes firmly and apply full power (check engine instruments)
4. Release the brakes
5. Rotate at 50 knots and continue pitch up to maintain a  $V_x$  climb
6. Once obstacles are clear lower the nose for  $V_y$  and retract flaps
7. Complete climb checklist



## Maneuvers

### Short-Field Landing

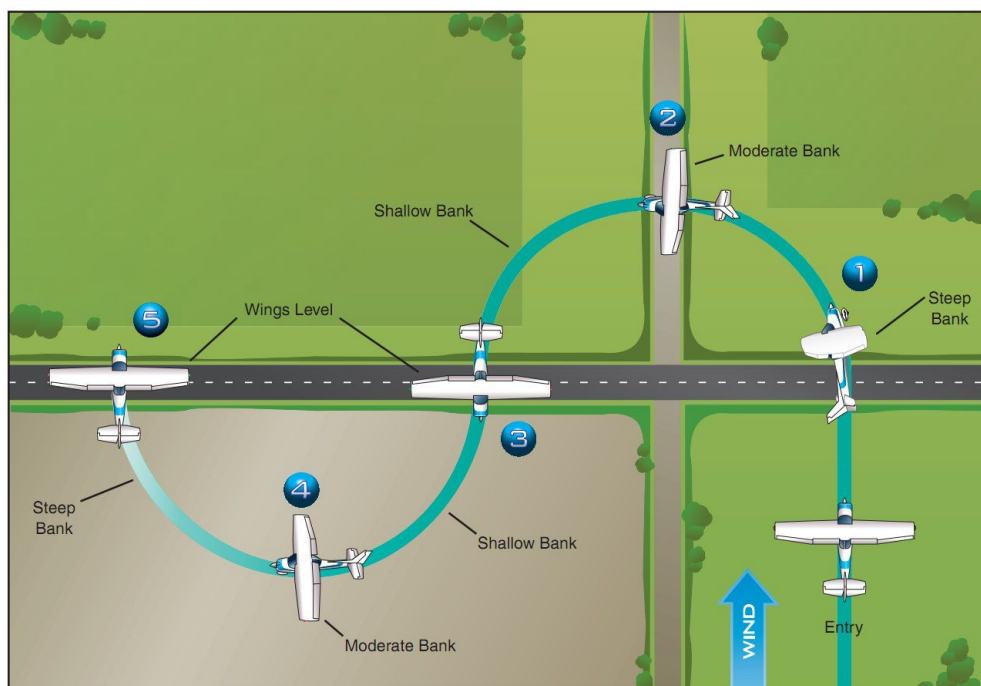
1. Complete Pre-Landing checklist
2. Select a touch down point
3. Abeam touch down point at pattern altitude, set power below 3000rpm and adjust as needed for glide
4. Below 82kts lower flaps to first notch
5. Establish a descent at 70-75kts until touch down point is 45° over your shoulder then turn base
6. Once base turn is complete flaps to second notch and establish 60-65kts descent
7. Begin final turn when approaching runway extended centerline and establish 55kt descent
8. When touch down point is achieved and obstacles cleared, power to idle and lower nose to maintain 55kts
9. Begin flaring to achieve a touch down at or around stall speed
10. Once wheels are down, smoothly increase braking intensity, retract flaps, then add full stick back for aerodynamic braking
11. Once clear of the runway complete after landing checklist



## Maneuvers

### S-turns Across A Road

1. Complete cruise checklist
2. Select a road that is 90° to wind direction
3. Establish an altitude between 500 and 1000ft AGL (Depends on landing area and obstacles)
4. Clear the area by overflying the road and selecting an emergency landing area
5. Set up to enter the maneuver on the downwind at 90kts
6. Upon crossing the road, enter the steepest bank of the maneuver (cannot exceed 40° of bank)
7. As the aircraft changes direction relative to wind groundspeed changes and less bank is required to ensure equal distance to the road
8. Cross the road perpendicular with wings level
9. Begin opposite turn with shallowest bank of the maneuver
10. As the aircraft changes direction relative to the wind ground changes and more bank is required to ensure equal distance to the road
11. Cross the road perpendicular with wings level
12. Once complete, resume more turns or exit on the downwind and resume cruise flight





## Maneuvers

### Turns Around A Point

1. Complete cruise checklist
2. Select a point in open space to maneuver around
3. Establish an altitude between 500 and 1000ft AGL (Depends on landing area and obstacles)
4. Clear the area by overflying the point and selecting an emergency landing area
5. Set up to enter the maneuver on the downwind at 90kts
6. Upon passing the point enter the steepest bank of the maneuver (cannot exceed 40° of bank)
7. As the aircraft changes direction relative to wind, groundspeed changes and less bank is required to ensure equal distance to the point
8. Adjust bank as necessary to maintain equidistant from the selected point
9. Complete a full 360° around the point
10. Once complete, resume more turns or exit on the downwind and resume cruise flight

