



## CESSNA 172 S/R MANEUVER GUIDE

**\*Disclaimer: This guide is to be used as reference only and does not preclude checklist usage, pilot operating handbook or flight instruction\***

### Normal Takeoff:

1. Takeoff Checklist
2. Perform Radio Communications
3. Line-Up on Runway
4. Full Power (Right rudder as needed)
5. Rotate at **55 KIAS**
6. Pitch for  $V_y$  (**74 KIAS**, approximately  $10^\circ$  pitch)
7. Perform Climb/Cruise checklist when appropriate

|                      |                        |
|----------------------|------------------------|
| Private Standards    | Airspeed: -5/+10 KIAS  |
| Commercial Standards | Airspeed: $\pm 5$ KIAS |

### Normal Landing

1. Complete an Descent Checklist prior to pattern entry
2. Before Landing Checklist
3. Downwind: **1900-2100RPM; 90 KIAS**
4. Abeam TD Point (or 3nm final): **1500RPM;  $10^\circ$  Flaps; 85 KIAS**
5. Base (or 2nm final):  **$20^\circ$  Flaps; 75 KIAS**
6. Final (or 1nm final):  **$30^\circ$ ; 65 KIAS** (\*note add  $\frac{1}{2}$  gust factor)
7. Close Throttle prior to touchdown, maintain positive pitch attitude

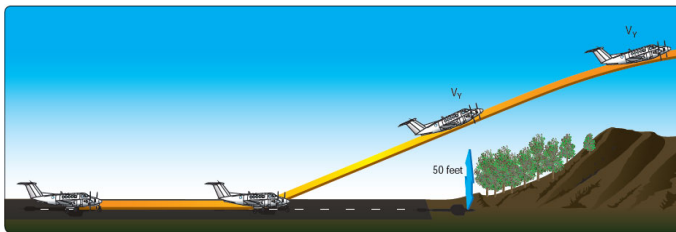
|                      |  |
|----------------------|--|
| Private Standards    | Airspeed: -5/+10 KIAS<br>TD Point: -0/+400 FT  |
| Commercial Standards | Airspeed: $\pm 5$ KIAS<br>TD Point: -0/+200 FT |



Revision 10/10/2022  
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## Short Field Takeoff

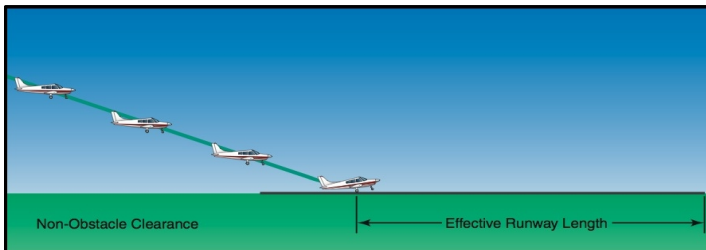
1. **Flaps 10°**
2. Takeoff Checklist
3. Perform Radio Communications
4. Line-Up on Runway using **max available runway**
5. **Hold Brakes**, Apply **Full Power** (Right rudder as needed); **release brakes**
6. Elevator slightly tail low, lift off at **51 KIAS** allow airplane to fly off runway
7. Pitch for **56 KIAS** until over **50' obstacle**
8. Pitch for **V<sub>y</sub> 74KIAS** when **clear of obstacles**
9. Above 200ft, Raise flaps
10. Perform Climb/Cruise checklist when appropriate



|                      |                       |
|----------------------|-----------------------|
| Private Standards    | Airspeed: -5/+10 KIAS |
| Commercial Standards | Airspeed: ±5 KIAS     |

## Short Field Landing

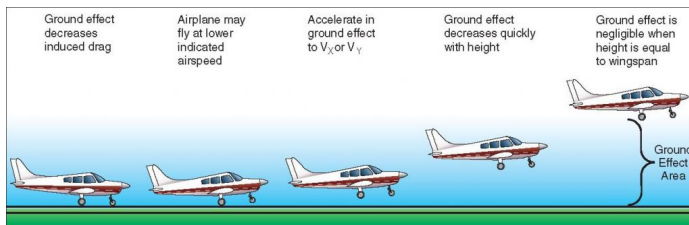
1. Complete an descent Checklist prior to pattern entry
2. Before Landing Checklist
3. Downwind **1900-2100RPM; 90 KIAS**
4. Abeam TD Point (or 3nm final): **1500RPM; 10° Flaps; 85 KIAS**
5. Base (or 2nm final): **20° Flaps; 75 KIAS**
6. Final (or 1nm final): **30° Flaps; 65 KIAS**
7. Short Final **61 KIAS** (to prevent floating \*note add ½ gust factor)
8. Close Throttle ~200ft prior to desired TD Point to minimize float, **land on TD Point**
9. Slowly bring nose to the runway, apply **maximum braking**.



|                      |   |
|----------------------|---|
| Private Standards    | Airspeed: -5/+10 KIAS<br>TD Point: -0/+200 FT |
| Commercial Standards | Airspeed: ±5 KIAS<br>TD Point: -0/+100 FT     |

## Soft Field Takeoff

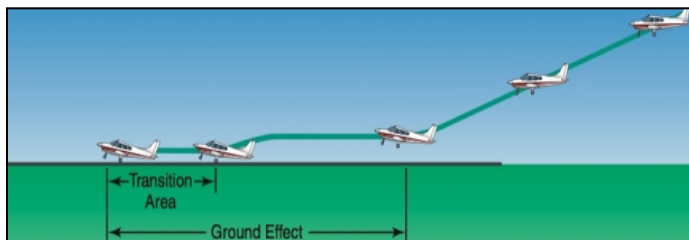
1. **Flaps 10°**
2. Takeoff Checklist
3. Perform Radio Communications
4. Line-Up on Runway with **FULL Aft Elevator**
5. Apply **Full Power** (Right rudder and **relief of some back pressure** may be needed to prevent tail strike)
6. **Lift off** at **lowest** possible **airspeed**
7. Promptly reduce pitch to **maintain** within 1 wingspan of the ground (**Ground Effect**)
8. **Accelerate** to **V<sub>x</sub> 62 KIAS**
9. Climb at V<sub>x</sub> 62 KIAS till 50ft, then Lower nose to climb at V<sub>y</sub> 74KIAS
10. Above 200ft, Raise flaps
11. Perform Climb/Cruise checklist when appropriate



|                      |                       |
|----------------------|-----------------------|
| Private Standards    | Airspeed: -5/+10 KIAS |
| Commercial Standards | Airspeed: ±5 KIAS     |

## Soft Field Landing

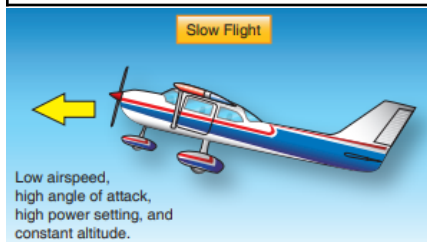
1. Complete an Approach Checklist prior to pattern entry
2. Before Landing Checklist
3. Downwind **1900-2100RPM; 90 KIAS**
4. Abeam Touch down Point (or 3nm final): **1500RPM; 10° Flaps; 85 KIAS**
5. Base (or 2nm final): **20° Flaps; 75 KIAS**
6. Final (or 1nm final): **30° Flaps; 65 KIAS**
7. Transition the airplane attitude to ensure a **soft touchdown**, throttle at or near idle
8. Slowly **increase back pressure** to full elevator authority (**DO NOT tail strike**)
9. **Maintain** back pressure until off “soft” surface



|                      |                       |
|----------------------|-----------------------|
| Private Standards    | Airspeed: -5/+10 KIAS |
| Commercial Standards | Airspeed: ±5 KIAS     |

## Slow Flight

1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **1700 RPM** (maintain altitude)
3. Incrementally add flaps; verify **landing configuration**
4. Slow to just above stall horn (~**50 KIAS** depending on weight)
5. **Pitch for Speed, Power for Altitude** (significant power increase may be necessary)
6. Perform level flight, turns, climbs and descents as required (apply necessary rudder)
7. Recovery: **Reduce AoA** and apply **Full Power, Flaps 20°**
8. **Level and accelerate** to Vx 62 or Vy 74, Flaps 10°
9. At Vy 74 KIAS and Positive Rate, Flaps 0°
10. Return to starting altitude
11. Perform Cruise checklist when appropriate



|                      |   |
|----------------------|---|
| Private Standards    | Airspeed: -0/+10 KIAS<br>Heading: ±10°<br>Altitude: ±100 FT<br>Specified Bank: ±10° |
| Commercial Standards | Airspeed: -0/+5 KIAS<br>Heading: ±10°<br>Altitude: ±50 FT<br>Specified Bank: ±5°    |

## Power-Off Stall (Stall can be to first indication or full)

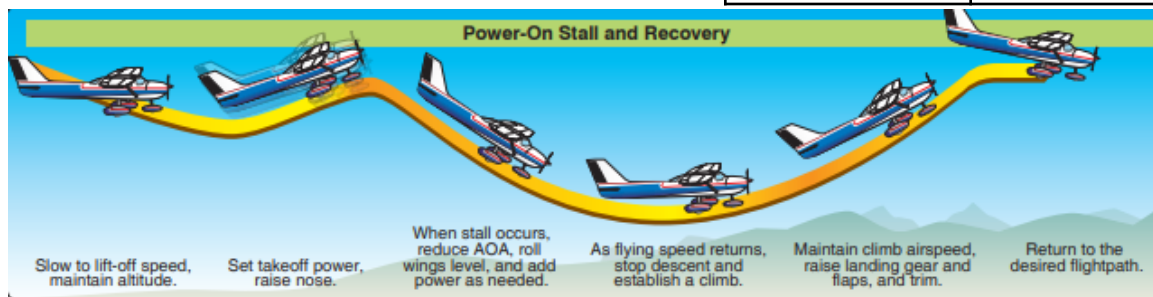
1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **1500 RPM** (maintain altitude)
3. Incrementally add flaps; verify **landing configuration**
4. Initiate **stabilized descent @ 60 KIAS**
5. Throttle **idle**, increase **pitch to maintain altitude** (apply necessary rudder)
6. At stall/buffet/horn: **Reduce AoA** and apply **Full Power, Flaps 20°**
7. **Level and accelerate** to Vx 62 or Vy 74, Flaps 10°
8. At Vy 74 KIAS and Positive Rate, Flaps 0°
9. Return to starting altitude
10. Perform Cruise Checklist when appropriate

|                      |  |
|----------------------|--|
| Private Standards    | Heading: ±10°<br>Specified Bank( if any): ±10° |
| Commercial Standards | Heading: ±10°<br>Specified Bank( if any): ±5°  |

## Power On Stall (Stall can be to first indication or full)

1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **1500RPM** (maintain altitude) to slow to Vr 55KIAS
3. Verify **Takeoff Configuration**
4. **Increase Pitch (20-25°) & Power** simultaneously (apply necessary rudder)
5. At stall/buffet/horn: **Reduce AoA** to horizon
6. **Accelerate** to Vx 62 KIAS or Vy 74KIAS (as necessary)
7. climb to starting altitude or momentarily if above
8. Perform Climb/Cruise Checklist when appropriate

|                      |  |
|----------------------|--|
| Private Standards    | Heading: $\pm 10^\circ$<br>Specified Bank( if any): $\pm 10^\circ$ |
| Commercial Standards | Heading: $\pm 10^\circ$<br>Specified Bank( if any): $\pm 5^\circ$  |



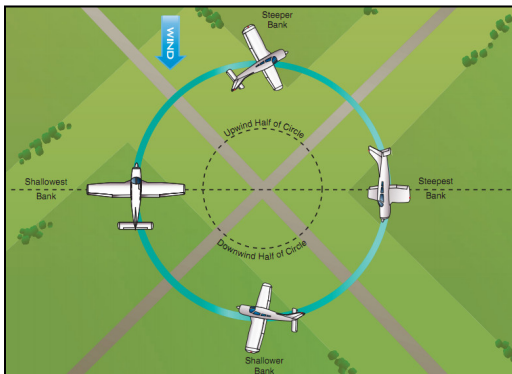
## Steep Turns

1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **2200 RPM**, Slow to **98 KIAS**
3. Choose visual waypoint
4. Roll into Bank **45°** Private, **50°** Commercial with Aileron **AND** Rudder, Maintain Altitude and Airspeed (add **elevator/trim** as necessary)
5. Increase to **2400 RPM**
6. **Roll out 20-25° ahead** of entry heading with Aileron **AND** Rudder
7. Verify clear of traffic and roll into **opposite direction turn**. (smoothly and immediately for commercial)
8. **Roll out 15-20° ahead** of entry heading
9. Cruise checklist when appropriate

|                                  |   |
|----------------------------------|---|
| Private and Commercial Standards | Airspeed: $\pm 10$ KIAS<br>Heading: $\pm 10^\circ$<br>Altitude: $\pm 100$ FT<br>Bank: $\pm 5^\circ$ |
|----------------------------------|---|

## Turns Around a Point (Private only)

1. Perform **Pre-Maneuver Checklist**
2. Select **appropriate ground reference** and emergency field(s)
3. Descend to 800ft AGL (ACS says 600-1000ft)
4. Throttle to **2200RPM**, Airspeed to **98 KIAS**
5. Enter maneuver on **downwind**, use bank to correct for wind  
(High Ground Speed = Steep, Low Ground Speed = Shallow)
6. Exit upon returning to entry heading
7. Cruise checklist when appropriate

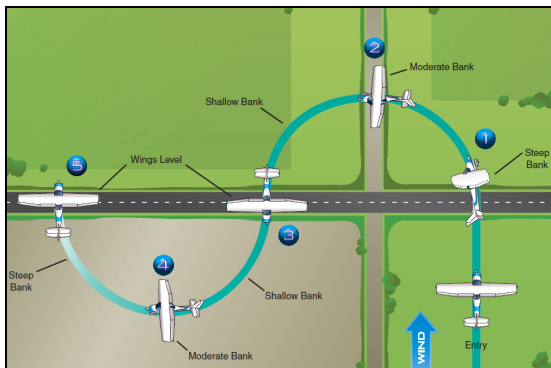


Private Standards

Airspeed:  $\pm 10$  KIAS  
Altitude:  $\pm 100$  FT

## S-Turns (Private only)

1. Perform **Pre-Maneuver Checklist**
2. Select **ground reference 90° to the wind** and emergency field(s)
3. Descend to 800ft AGL (ACS says 600-1000ft)
4. Throttle to **2200RPM**, Airspeed to **98 KIAS**
5. Enter maneuver on **downwind**, use bank to correct for wind  
(High Ground Speed = Steep, Low Ground Speed = Shallow)
6. Exit upon returning to entry heading
7. Cruise checklist when appropriate



Private Standards

Airspeed:  $\pm 10$  KIAS  
Altitude:  $\pm 100$  FT

## Power Off 180 (Commercial Only)

1. Complete an Approach Checklist prior to pattern entry
2. Before Landing Checklist - Select Touch down Point
3. Abeam Touch down Point, throttle smoothly to idle, slow to Vg 68 KIAS
4. Configure aircraft and manage airspeed as necessary:  
Anticipate earlier turn if in windy conditions  
Flaps may be increased on approach to steepen descent  
Forward slip may be used to steepen descent
5. Aim 100-200ft prior to Touch down point (go around may be initiated if necessary)
6. Land with no sideload and proper pitch attitude (crosswind correction as necessary)

Commercial Standards

TD Point: -0/+200 FT

## Accelerated Stall (Commercial Only)

1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **1500RPM**
3. Slow to **80 KIAS** (Use pitch to hold Altitude)
4. Power idle, Bank to **45°** and add extensive back pressure
5. At first indication: **Reduce AoA**, apply **Full Power** and **Level Wings**
6. Perform Cruise Checklist when appropriate

Commercial Standards

Complete no lower than  
**3000 AGL**

## Steep Spiral (Commercial Only)

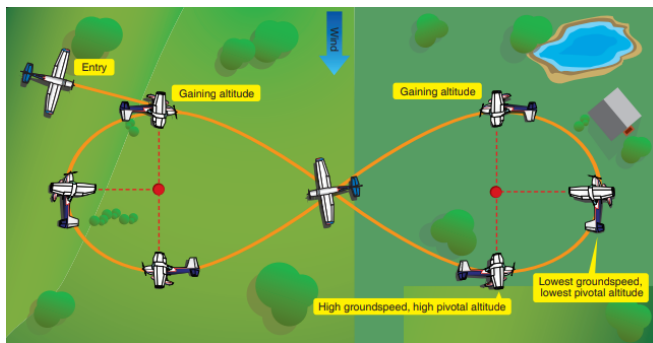
1. Perform **Pre-Maneuver Checklist**
2. Establish flight path into **Upwind**
3. Select ground **reference point**
4. When directly over the point, reduce **power to idle** and slow to **85 KIAS**
5. Adjust bank as necessary to keep **point at a fixed distance** up to 60° Bank
6. After completion of **each 360°** turn **Clear Engine** (power to 2000rpms momentarily)
7. Exit maneuver on specified heading, resume normal cruise
8. Perform Cruise Checklist when appropriate

Commercial  
Standards

Bank: not to exceed 60°  
Airspeed: ±10 KIAS  
Specified Heading: ±10°  
Complete no lower than 1500 AGL

## 8's on Pylon (Commercial Only)

1. Perform **Pre-Maneuver Checklist**
2. Establish flight path **45° left of downwind** (bug entry heading)
3. Throttle to **2300RPM**, Airspeed to **105 KIAS**
4. Establish **Pivotal Altitude**
5. Select ground **reference point** (road, barn, small pond)
6. Begin **bank** when point is abeam wing (no more than 40°)
7. Use **pitch to maintain point** on reference line (pitch smoothly)
8. After completion of a **left 270°** turn maintain straight and level flight
9. After **5-7 seconds**, perform steps 4-7 to the **right**
10. Roll out on bugged heading
11. Perform Climb/Cruise Checklist when appropriate



Commercial Standards

Bank: Not to exceed 40°  
Avoid Slips and Skids

## Chandelle (Commercial Only)

1. Perform **Pre-Maneuver Checklist**
2. Throttle to **2300RPM**, Airspeed to **105 KIAS**
3. Select **90° Reference**
4. **Bank 30°** then apply **Full Power**
5. Slowly increase **pitch** to **15-17°** (should reach max pitch and hold at 90° point)
6. **Maintain pitch** and slowly **reduce bank** angle to be at 0° at 180° point
7. Slowly **reduce pitch** to maintain level flight and accelerate to cruise
8. Repeat steps 3-6 to the **right** (If asked to demonstrate to right)
9. Perform Cruise Checklist when appropriate

Commercial Standards

Heading: 180° ±10  
Airspeed: Just above stall;  
Maintain momentarily while  
avoiding stall

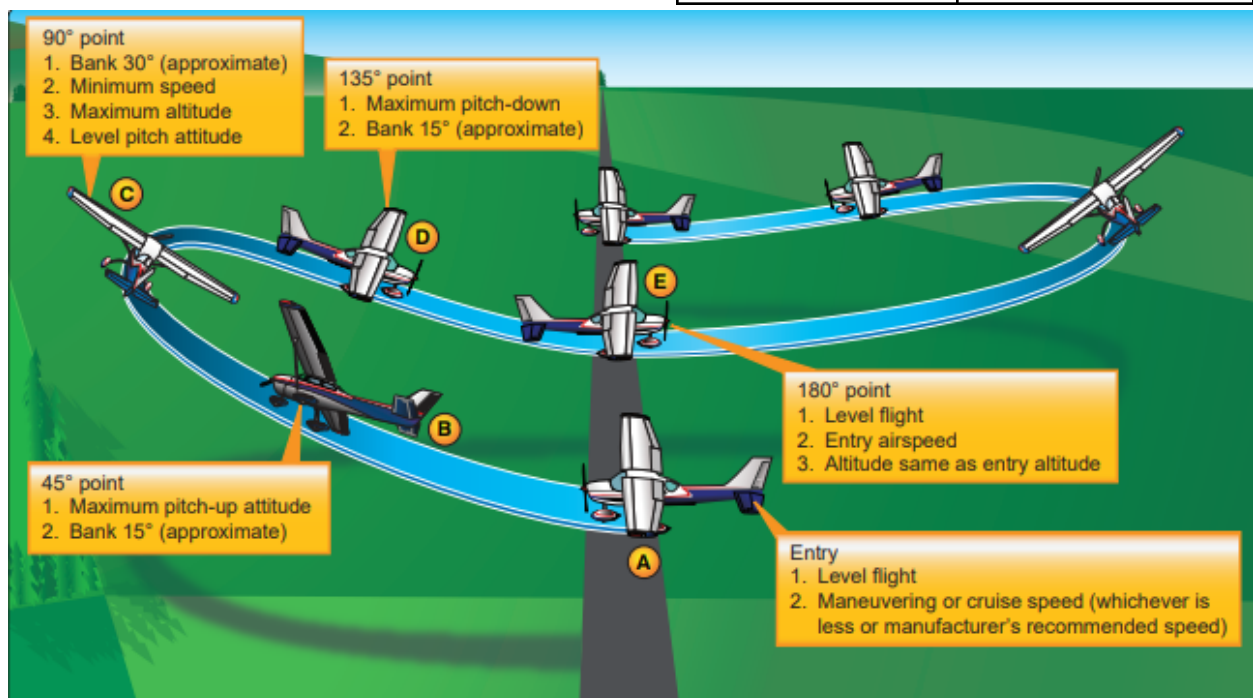


## Lazy Eight (Commercial Only)

1. Perform **Pre-Maneuver Checklist**
2. Select **45°, 90° and 135° References**
3. Verify configuration (maintain altitude, **98 KIAS** and power **2200RPM**)
4. **Increase pitch & bank 1-2° per second** (up to ~17° and speed should be near 60KIAS)  
**45°: 15° bank & max pitch up**
5. **Relieve back pressure, increase bank**  
**90°: 30° bank, level pitch**
6. **Increase back pressure slowly** (maintain nose low attitude), **reduce bank**  
**135°: 15° bank & max pitch down**
7. Level off @ 180° from start at entry altitude, airspeed and reciprocal heading
8. Repeat steps 4-7 to the **Other direction** smoothly and immediately
9. Perform Cruise Checklist when appropriate

Commercial Standards

Bank: Approx 30° at Steepest  
At 180° Point:  
 Airspeed: ±10 KIAS  
 Heading: ±10°  
 Altitude: ±100 FT



# Unusual Attitudes

1. **Use the attitude indicator to quickly determine whether the airplane is in a nose high or nose low attitude** (cross check with altimeter, airspeed, and vertical speed indicators)
2. **Recognizing a nose high attitude:** nose up pitch on attitude indicator, increasing altitude on altimeter, vertical speed indicator shows climb, decreasing airspeed (possibly approaching a stall)
3. **Nose High Recovery:** add full power, simultaneously lower the nose to the horizon, level the wings, trim
4. **Recognizing a nose low attitude:** nose down pitch on attitude indicator, decreasing altitude on altimeter, vertical speed indicator shows descent, increasing airspeed
5. **Nose Low Recovery:** bring power to idle, level the wings to avoid overstressing the airframe, smoothly bring the nose to the horizon, trim
6. Perform Cruise Checklist when appropriate

Standards

Recognize and perform the correct, coordinated and smooth flight control application to recover

