THRUST FLIGHT
Elevate Your Experience

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 Vy (**74 KIAS**, approximately 10° pitch)
7. Perform Climb/Cruise checklist when appropriate

Private Standards	Airspeed: -5/+10 KIAS
Commercial Standards	Airspeed: ±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° Flaps; 85 KIAS**
5. Base (or 2nm final): **20° Flaps; 75 KIAS**
6. Final (or 1nm final): **30°; 65 KIAS** (*note add ½ gust factor)
7. Close Throttle prior to touchdown, maintain positive pitch attitude

Private Standards	Airspeed: -5/+10 KIAS TD Point: -0/+400 FT
Commercial Standards	Airspeed: ±5 KIAS TD Point: -0/+200 FT

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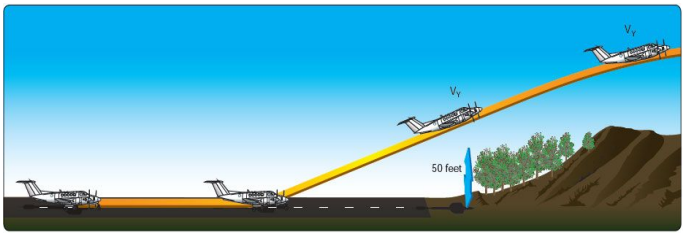
Revision 1/6/2021
4700 Airport Parkway
Addison, Texas 75001
972.735.9099

Short Field Takeoff

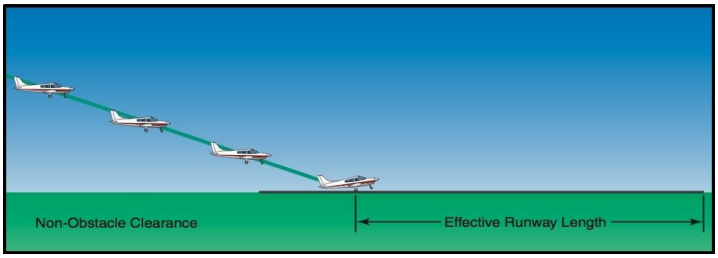
1. **Flaps 10°**
2. Takeoff Checklist
3. Perform Radio Communications
4. Line-Up on Runway using **max available runway**
5. **Hold Brakes**, Apply **Full Power** (Right rudder as needed); **release brakes**
6. Elevator slightly tail low, lift off at **51 KIAS** allow airplane to fly off runway
7. Pitch for **56 KIAS** until over **50' obstacle**
8. Pitch for **Vy 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

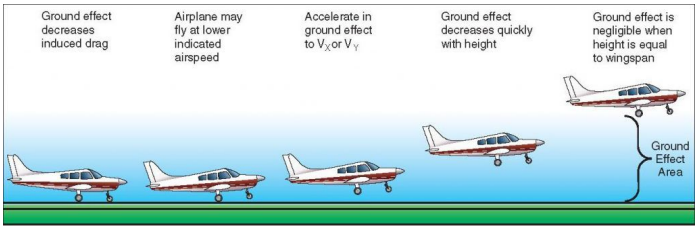
1. Complete an descent Checklist prior to pattern entry
2. Before Landing Checklist
3. Downwind **1900-2100RPM; 90 KIAS**
4. Abeam TD Point (or 3nm final): **1500RPM; 10° Flaps; 85 KIAS**
5. Base (or 2nm final): **20° Flaps; 75 KIAS**
6. Final (or 1nm final): **30° Flaps; 65 KIAS**
7. Short Final **61 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 TD Point: -0/+200 FT
Commercial Standards	Airspeed: ±5 KIAS TD Point: -0/+100 FT

Soft Field Takeoff

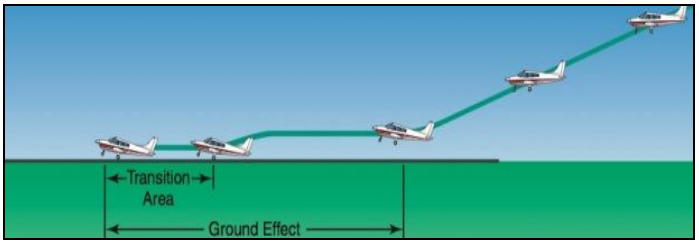
1. **Flaps 10°**
2. Takeoff Checklist
3. Perform Radio Communications
4. Line-Up on Runway with **FULL Aft Elevato**r
5. Apply **Full Power** (Right rudder and **relief of some back pressure** may be needed to prevent tail strike)
6. **Lift off** at **lowest** possible **airspeed**
7. Promptly reduce pitch to **maintain** within 1 wingspan of the ground (**Ground Effect**)
8. **Accelerate** to **Vx 62 KIAS**
9. Climb at Vx 62 KIAS till 50ft, then Lower nose to climb at Vy 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

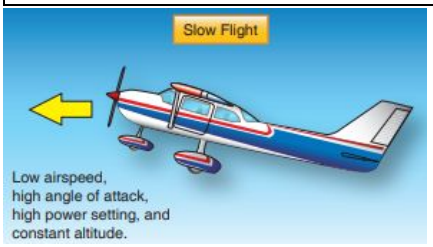
1. Complete an Approach Checklist prior to pattern entry
2. Before Landing Checklist
3. Downwind **1900-2100RPM; 90 KIAS**
4. Abeam Touch down Point (or 3nm final): **1500RPM; 10° Flaps; 85 KIAS**
5. Base (or 2nm final): **20° Flaps; 75 KIAS**
6. Final (or 1nm final): **30° Flaps; 65 KIAS**
7. Transition 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 Heading: ±10° Altitude: ±100 FT Specified Bank: ±10°
Commercial Standards	Airspeed: -0/+5 KIAS Heading: ±10° Altitude: ±50 FT Specified Bank: ±5°

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

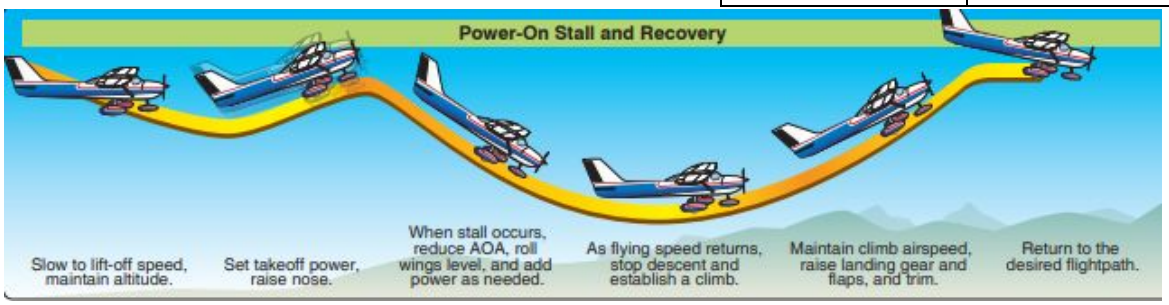
1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **1500 RPM** (maintain altitude)
3. Incrementally add flaps; verify **landing configuration**
4. Initiate **stabilized descent @ 60 KIAS**
5. Throttle **idle**, increase **pitch to maintain altitude** (apply necessary rudder)
6. At stall/buffet/horn: **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° Specified Bank(if any): ±10°
Commercial Standards	Heading: ±10° 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: ±10° Specified Bank(if any): ±10°
Commercial Standards	Heading: ±10° Specified Bank(if any): ±5°



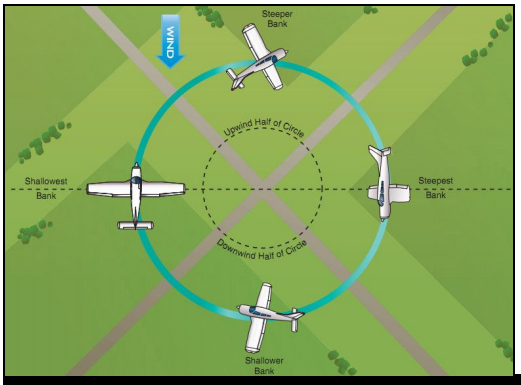
Steep Turns

1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **2200 RPM,** Slow to **95 KIAS**
3. Bank **45°** Private, **50°** Commercial, Maintain Altitude and Airspeed (add **elevator/trim** as necessary)
4. Increase to **2400 RPM**
5. **Roll out 20-25° ahead** of entry heading
6. Verify clear of traffic and roll into **opposite direction turn.** (smoothly and immediately for commercial)
7. **Roll out 15-20° ahead** of entry heading
8. Cruise checklist when appropriate

Private and Commercial Standards	Airspeed: ±10 KIAS Heading: ±10° Altitude: ±100 FT Bank: ±5°

Turns Around a Point (Private only)

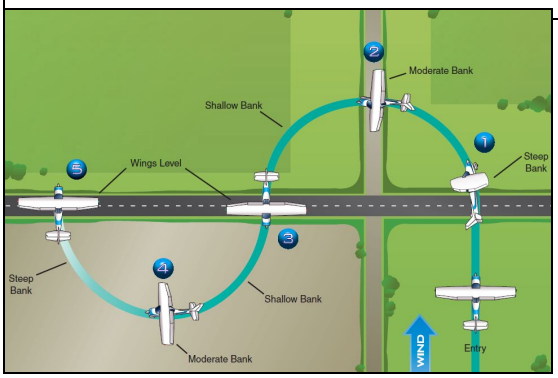
1. Perform **Pre-Maneuver Checklist**
2. Select **appropriate ground reference** and emergency field(s)
3. Descend to 800ft AGL (ACS says 600-1000ft)
4. Throttle to **2200RPM,** Airspeed to **95 KIAS**
5. Enter maneuver on **downwind**, use bank to correct for wind
   (High Ground Speed = Steep, Low Ground Speed = Shallow)
6. Exit upon returning to entry heading
7. Cruise checklist when appropriate



Private Standards	Airspeed: ±10 KIAS Altitude: ±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 **95 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: ±10 KIAS Altitude: ±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. 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**

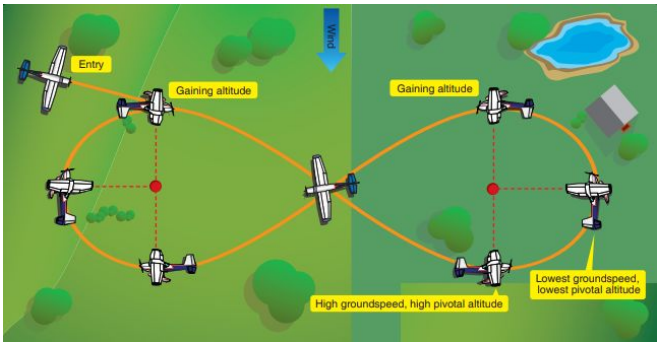
Steep Spiral (Commercial Only)

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 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, **95KIAS** 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