THRUST FLIGHT
Elevate Your Experience

CESSNA 172S MANEUVER GUIDE

Disclaimer: This guide is to be used as reference only and does not preclude checklist usage, pilot operating handbook or flight instruction
**Verbal callouts will be indicated through italicized text. Ex: *"Gauges Green, Airspeed Alive"*

Normal Takeoff:	Callouts
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	*"Runway 17L"* *"Gauges green, airspeed alive"* *"Rotate"*

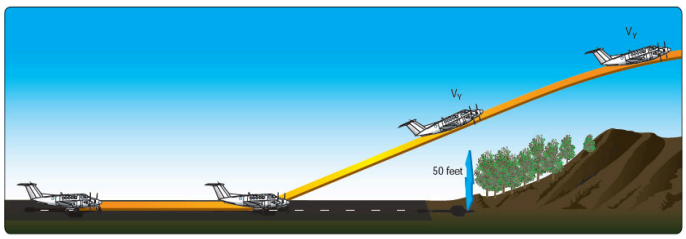
Private Standards	Airspeed: -5/+10 KIAS
Commercial Standards	Airspeed: ±5 KIAS

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

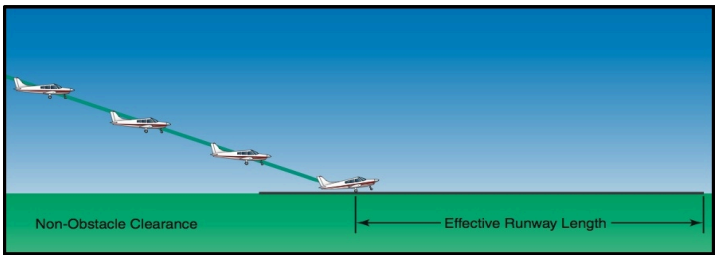
Short Field Takeoff	Callouts
1. **Flaps 10°**	
2. Takeoff Checklist	
3. Perform Radio Communications	
4. Line-Up on Runway using **max available runway**	*"Runway 17L"*
5. **Hold Brakes**, Apply **Full Power** (Right rudder as needed); **release brakes**	*"Gauges green"* *"Airspeed alive"*
6. Elevator slightly tail low, lift off at **51 KIAS** allow airplane to fly off runway	*"Rotate"*
7. Pitch for **56 KIAS** until over **50' obstacle**	*"50, Vx, flaps 10"*
8. Pitch for **Vy 74KIAS** when **clear of obstacles**	*"200, Vy, flaps 0"*
9. Above 200ft, Raise flaps	
10. Perform Climb/Cruise checklist when appropriate	



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

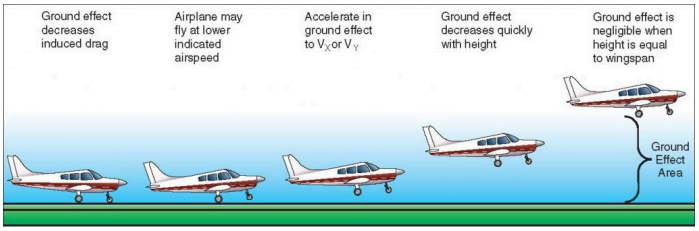
Short Field Landing

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; 61 KIAS** (to prevent floating add ½ gust factor)
7. Close Throttle ~200ft prior to desired TD Point to minimize float, **land on TD Point**
8. Slowly bring the 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

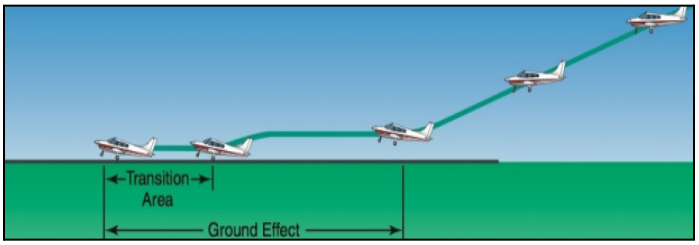
Soft Field Takeoff	Callouts
1. **Flaps 10°**	
2. Takeoff Checklist	
3. Perform Radio Communications	
4. Line-Up on Runway with **FULL Aft Elevator**	*“Runway 17L”*
5. Apply **Full Power** (Right rudder and **relief of some back pressure** may be needed to prevent tail strike)	*“Gauges green, Airspeed alive”*
6. **Lift off** at **lowest** possible **airspeed**	
7. Promptly reduce pitch to **maintain** within **1/2 wingspan** of the ground (**Ground Effect**)	
8. **Accelerate** to **Vx 62 KIAS**	
9. Initiate climb at Vx 62 KIAS while accelerating to Vy 74 KIAS	*“Vx, climb”*
10. Above 200ft, Raise flaps	*“200, Vy, flaps 0”*
11. Perform Climb/Cruise checklist when appropriate	



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

Soft Field Landing

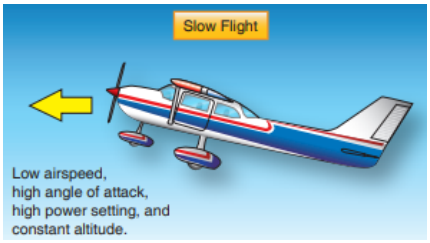
1. Complete an Approach Checklist prior to pattern entry
2. Before Landing Checklist
3. Downwind **1900-2100RPM; 90 KIAS**
4. Abeam Touch down Point (or 3nm final): **1500RPM; 10° Flaps; 85 KIAS**
5. Base (or 2nm final): **20° Flaps; 75 KIAS**
6. Final (or 1nm final): **30° Flaps; 65 KIAS**
7. Transition 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 10°**
8. **Level and accelerate** to Vx 62 or Vy 74 Positive Rate, **Flaps 0°**
9. Return to starting altitude
10. 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)

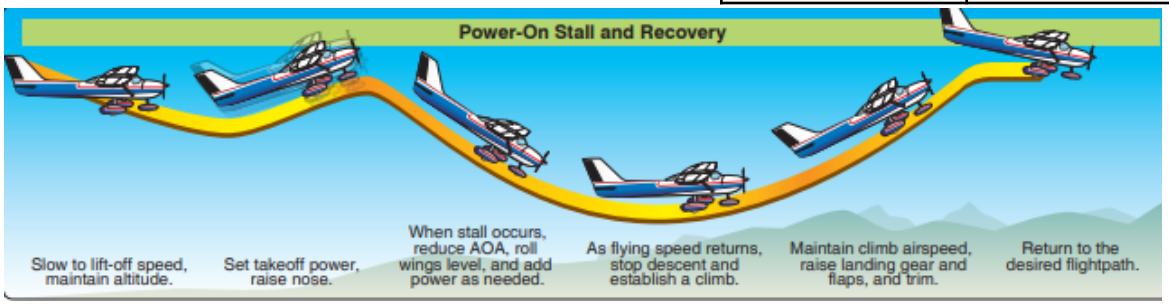
1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **1500 RPM** (maintain altitude)
3. Incrementally add flaps; verify **landing configuration**
4. Initiate **stabilized descent @ 60 KIAS**
5. Throttle **idle**, increase **pitch to maintain altitude** (apply necessary rudder)
6. At stall/buffet/horn: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



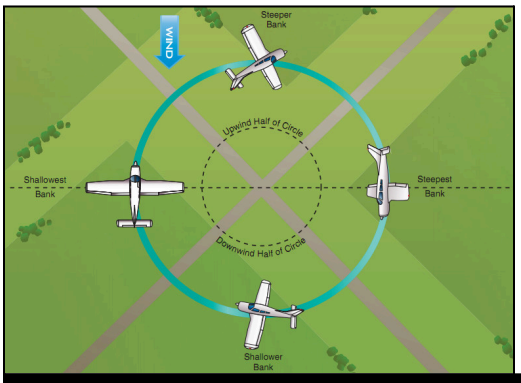
Steep Turns

1. Perform **Pre-Maneuver Checklist**
2. Throttle set to RPM required to maintain **level flight and 95 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 the opposite direction**.** (smoothly and immediately for commercial)
8. **Roll out 15-20° ahead** of entry heading
9. Cruise checklist when appropriate

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

Turns Around a Point (Private only)

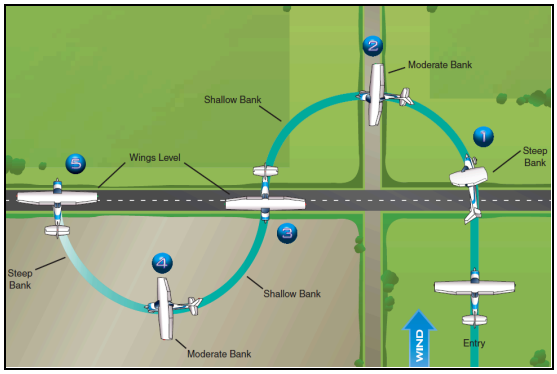
1. Perform **Pre-Maneuver Checklist**
2. Select **appropriate ground reference** and emergency field(s)
3. Descend to 800ft AGL (ACS says 600-1000ft)
4. Throttle set to RPM required to maintain **level flight and 98 KIAS**
5. Enter maneuver on **downwind**, use bank to correct for wind
   (High Ground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



Private Standards	Airspeed: ±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 set to RPM required to maintain **level flight and 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



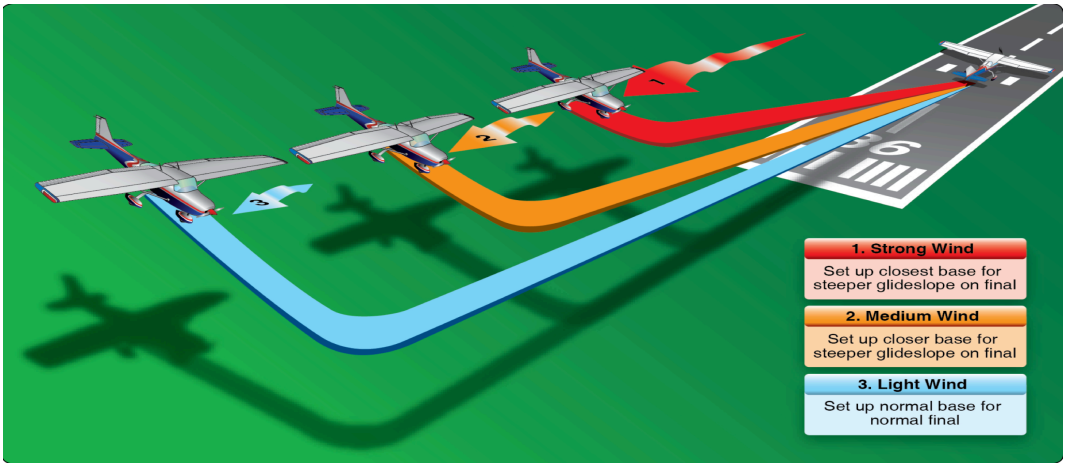
Private Standards	Airspeed: ±10 KIAS Altitude: ±100 FT

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. Go around may be initiated if necessary*
6. Land with no sideload and proper pitch attitude (crosswind correction as necessary)

*Go around will result in a failure per ACS standards

Commercial Standards	TD Point: -0/+200 FT



Accelerated Stall (Commercial Only)

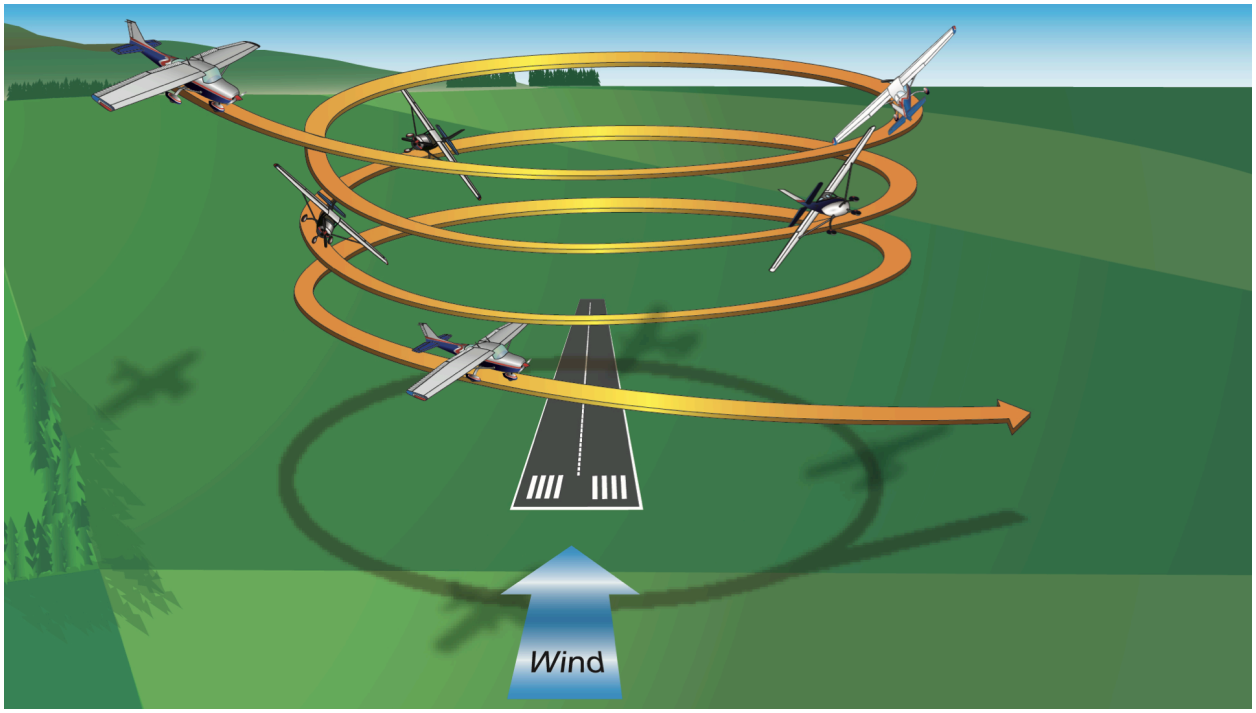
1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **1500RPM**
3. Slow to **90 KIAS** (Use pitch to hold Altitude)
4. Power idle, Bank to **45°** and add extensive back pressure
5. At first indication: **Reduce AoA**, apply **Full Power** and **Level Wings**
6. Perform Cruise Checklist when appropriate

Commercial Standards	Complete no lower than **3000 AGL**

Steep Spiral (Commercial Only)

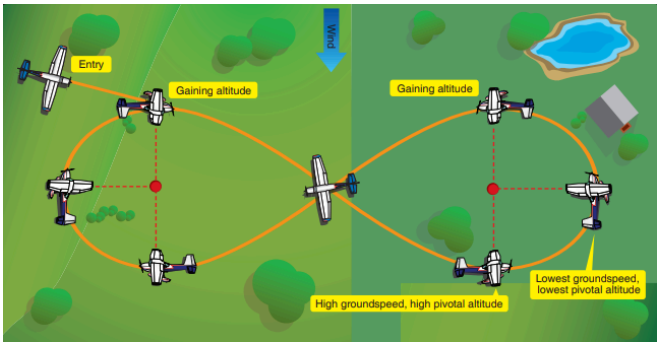
1. Perform **Pre-Maneuver Checklist**
2. Establish flight path into **Upwind**
3. Select ground **reference point**
4. When directly over the point, reduce **power to idle** and slow to **85 KIAS**
5. Adjust bank as necessary to keep **point at a fixed distance** up to 60° Bank
6. After completion of **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° of downwind** (bug entry heading)
3. Throttle set to RPM required to maintain **level flight and 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 **~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

*Pivotal altitude should be calculated before the flight.

Chandelle (Commercial Only)

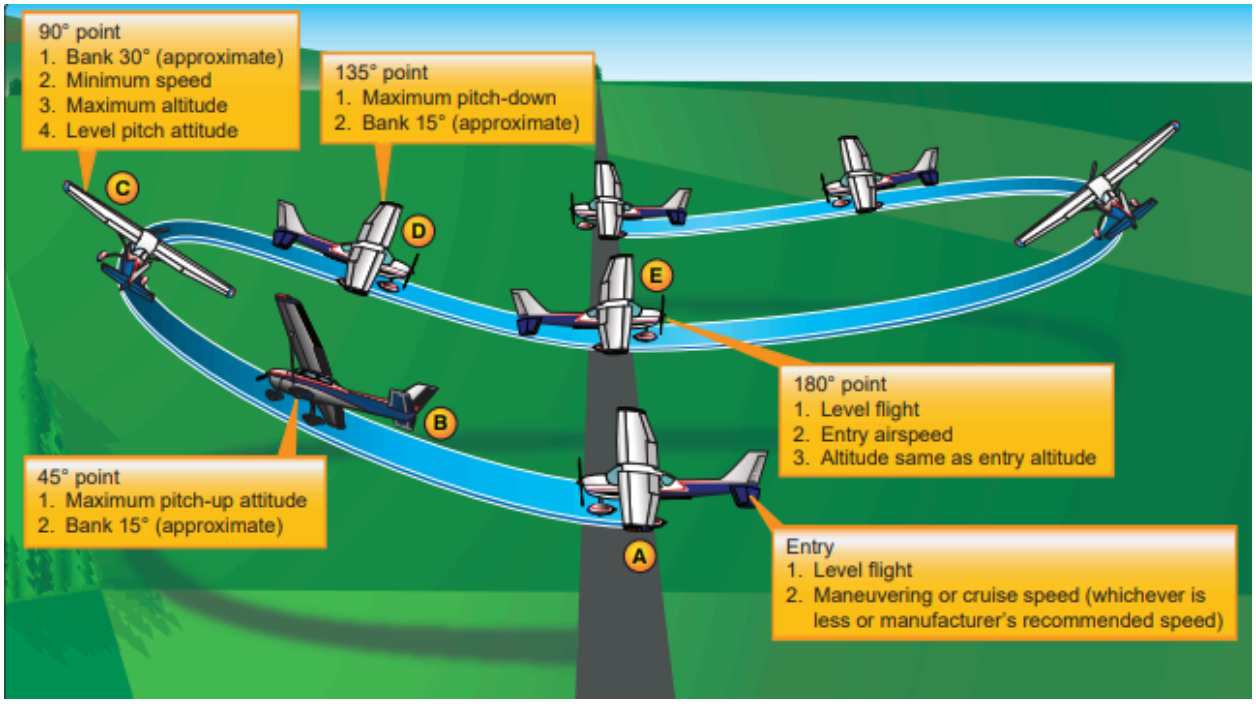
1. Perform **Pre-Maneuver Checklist**
2. Throttle set to RPM required to maintain **level flight and 105 KIAS**
3. Select **90° Reference**
4. **Bank 30°** then apply **Full Power**
5. Slowly increase **pitch** to **15-17°** (should reach max pitch and hold at 90° point)
6. **Maintain pitch** and slowly **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 (Throttle set to RPM required to maintain **level flight and 98 KIAS**)
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

Secondary Stall (CFI Only)

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 first indication of stall: **Reduce AoA**
7. Once initial Stall indication stops, increase **pitch to maintain altitude**
8. At first indication of stall: **Reduce AoA** and apply **Full Power**, **Flaps 20°**
9. **Level and accelerate** to Vx 62 or Vy 74, Flaps 10°
10. At Vy 74 KIAS and Positive Rate, Flaps 0°
11. Return to starting altitude
12. Perform Cruise Checklist when appropriate

Standards	Exhibits instructional knowledge in demonstration of stall

Elevator Trim Stall (CFI Only)

1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **1500 RPM** (maintain altitude)
3. Incrementally add flaps; verify **landing configuration**
4. Trim aircraft for a **stabilized descent @ 60 KIAS**
5. Simulate Go-around by adding full power and allow AOA to increase (apply necessary rudder).
6. At first indication of stall: **Reduce AoA and apply forward trim, 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

Standards	Exhibits instructional knowledge in demonstration of stall

Cross Controlled Stall (CFI Only)

1. Perform **Pre-Maneuver Checklist**
2. Select **visual reference** to simulate a runway
3. Reduce throttle to **1500 RPM** (maintain altitude)
4. Incrementally add **Flaps 20°**
5. Initiate descent and simulate overshooting final
6. Begin coordinated left turn back to runway while adding backpressure
7. As plane begins to overbank, maintain left rudder and back pressure while adding right aileron
8. At first indication of stall: **Reduce AoA, apply Full Power, Flaps 10°**
9. Perform Cruise Checklist when appropriate

Standards	Exhibits instructional knowledge in demonstration of stall