



INDEPENDENT

AVIATION SOLUTIONS

SPORTCRUISER 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 needed)
5. Rotate at **45 KIAS**
6. Pitch for V_y (**62 KIAS**, approximately 10° pitch) until traffic pattern altitude
7. At traffic pattern altitude, lower pitch for 70 KIAS for better cooling and visibility.
8. Perform Climb/Cruise checklist when appropriate

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

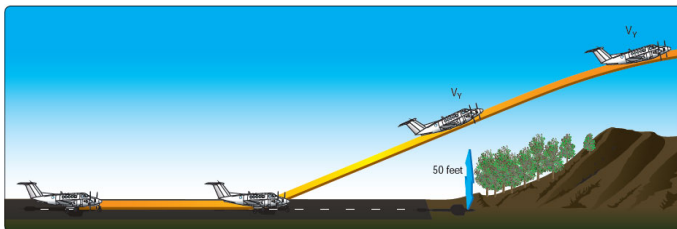
Normal Landing

1. Complete an Approach Checklist prior to pattern entry
2. Before Landing Checklist
3. Downwind: **4500 RPM; 85 KIAS**
4. Abeam TD Point (or 3nm final): **3000 RPM; 75 KIAS**
5. Base (or 2nm final): **12° Flaps; 70 KIAS**
6. Final (or 1nm final): **30° ; 65 KIAS** (*note add $\frac{1}{2}$ gust factor to airspeed)
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

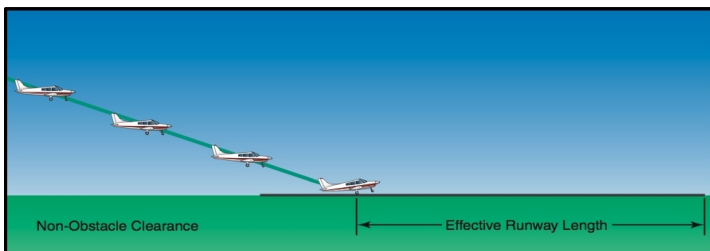
1. **Flaps 12°**
2. Takeoff Checklist
3. Perform Radio Communications
4. Line-Up on Runway using **max available runway**
5. **Hold Brakes**, Apply **Full Power** (Right rudder may be needed); **release brakes**
6. Rotate at **45 KIAS**
7. Pitch for **Vx 56 KIAS** (as specified) until over **50' obstacle**
8. Pitch for **Vy 62 KIAS** when **clear of obstacle**
9. Above 200ft AGL, Raise flaps
10. Perform Climb/Cruise checklist when appropriate



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

Short Field Landing

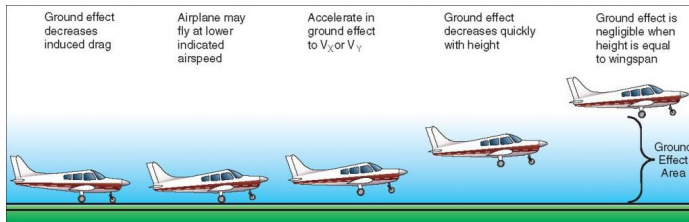
1. Complete an Approach Checklist prior to pattern entry
2. Before Landing Checklist
3. Downwind **4500 RPM; 85 KIAS**
4. Abeam TD Point (or 3nm final): **3000 RPM; 75 KIAS**
5. Base (or 2nm final): **12° Flaps; 70 KIAS**
6. Final (or 1nm final): **30° Flaps; 65 KIAS**
7. Short Final **55 KIAS** (to prevent floating *note add ½ gust factor to airspeed)
8. Close Throttle ~200ft prior to desired TD Point to minimize float, **land on TD Point**
9. Slowly bring nose to the runway, flaps up, “**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

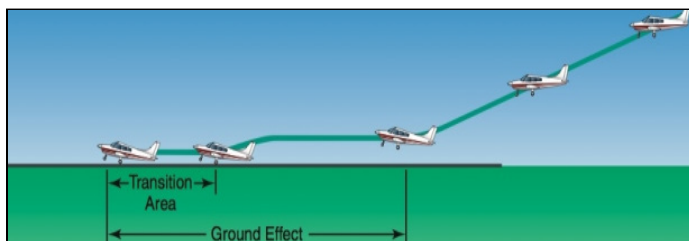
1. **Flaps 12°**
2. Takeoff Checklist
3. Perform Radio Communications
4. Line-Up on Runway with **FULL Aft Elevator**
5. Apply **Full Power** and Right rudder
6. As nose comes up relieve some backpressure, maintain nose high attitude
7. **Lift off at lowest possible airspeed**
8. Promptly reduce pitch to **maintain** <1 wingspan of ground (**Ground Effect**)
9. **Accelerate** to **V_y 62 KIAS**
10. Climb at V_y (approximately 10° pitch)
11. Above 200 ft AGL, Raise Flaps
12. 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 **4500 RPM; 85 KIAS**
4. Abeam TD Point (or 3nm final): **3000 RPM; 75 KIAS**
5. Base (or 2nm final): **12° Flaps; 70 KIAS**
6. Final (or 1nm final): **30° Flaps; 65 KIAS**
7. Short Final: **60 KIAS**
8. Transition the airplane attitude to ensure a **soft, nose high, touchdown**, throttle to or near idle
9. Slowly **increase back pressure** to full elevator authority
10. **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 **3400 RPM** (Pitch nose to maintain altitude)
3. Verify below **V_{FE} (75 KIAS)**; add Flaps 12°, add approximately **200 RPM**
4. Add Flaps 30°, Slow to just above stall horn **40 KIAS** Increase power to **4000 RPM**
5. **Pitch for Speed, Power for Altitude**
6. Perform level flight, turns, climbs and descents (may require significant power changes) (apply necessary rudder)
7. Recovery: Full power, flaps 12°
8. **Level and accelerate** to V_x **56 KIAS** or V_y **62 KIAS**
9. At V_y, Flaps 0°
10. Perform Climb/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

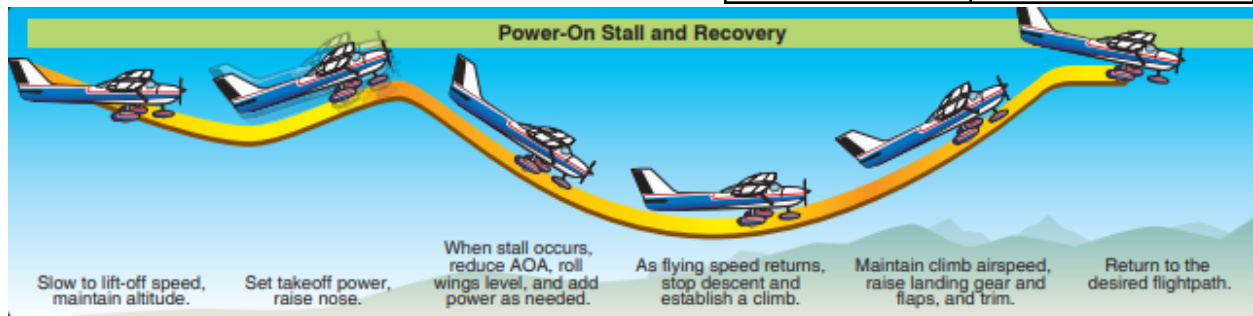
1. Perform **Pre-Maneuver Checklist**
2. Reduce throttle to **3400 RPM** (pitch nose maintain altitude)
3. Incrementally add flaps below **V_{FE} (75 KIAS)**; verify **landing configuration**
4. Initiate **stabilized descent @ 60 KIAS**
5. Throttle **idle**, increase **pitch to maintain altitude** (apply necessary rudder)
6. At stall/buffet/horn: **Reduce AoA** and apply **Full Power, Flaps 12°**
7. **Level and accelerate** to V_x **56 KIAS** or V_y **62 KIAS**
8. At V_y, Flaps 0°
9. Return to starting altitude
10. Perform Climb/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

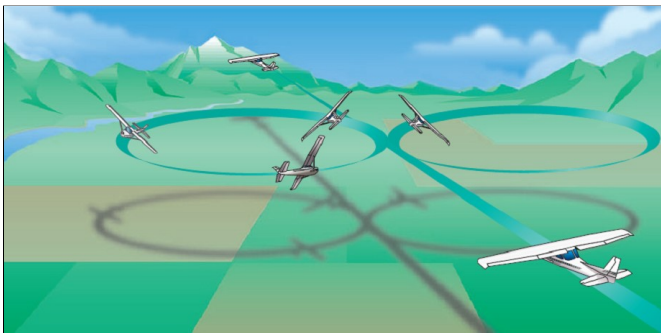
1. Perform **Pre-Maneuver Checklist**
2. **3400 RPM** (maintain altitude) to slow to just above Vr **50 KIAS**
3. **Increase Pitch (20-25°) & Full Power** simultaneously (apply right rudder)
4. At stall: **Reduce AoA**
5. **Accelerate** to Vx or Vy (as necessary)
6. Perform Climb/Cruise Checklist when appropriate

Private Standards	Heading: $\pm 10^\circ$ Specified Bank(if any): $\pm 10^\circ$
Commercial Standards	Heading: $\pm 10^\circ$ Specified Bank(if any): $\pm 5^\circ$



Steep Turns

1. Perform **Pre-Maneuver Checklist**
2. Configure **88 KIAS; 4700 RPM**
3. Pick a **visual** waypoint
4. Roll into Bank **45°** for Private, **50°** for Commercial with Aileron **AND** Rudder, Maintain Altitude and Airspeed, power to **5000 RPM**
5. **Roll out 15-20° ahead** of entry heading, with Aileron **AND** Rudder.
6. Verify clear of traffic and roll into opposite direction (smoothly and immediately for commercial)
7. **Roll out 15-20° ahead** of entry heading
8. Cruise checklist when appropriate



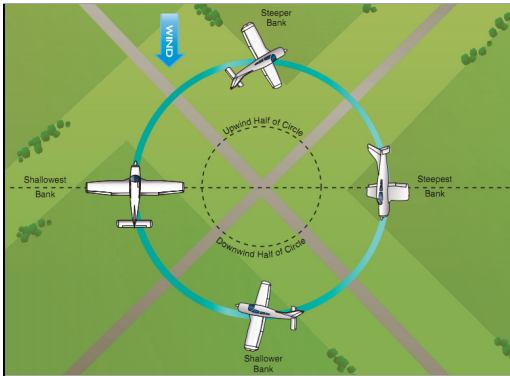
Private and Commercial Standards	Airspeed: ± 10 KIAS Heading: $\pm 10^\circ$ Altitude: ± 100 FT Bank: $\pm 5^\circ$
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Turns Around a Point (Private only)

1. Perform **Pre-Maneuver Checklist**
2. Select **appropriate ground references** and emergency field(s)
3. Descend to 800ft AGL (ACS says 600 to 1000 AGL)
4. Configure **88 KIAS; 4700 RPM**
5. Enter maneuver on **downwind**, bug heading, 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

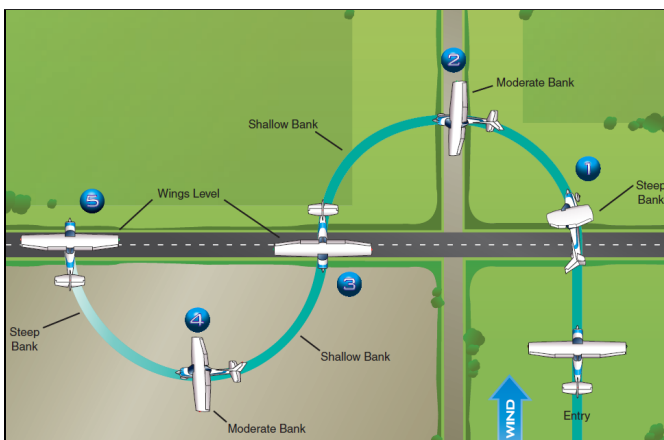


S-Turns (Private only)

1. Perform **Pre-Maneuver Checklist** (Fuel Pump/Selector, Lights, Clear, Alt/Hdg Bugs)
2. Select **appropriate ground references** and emergency field(s)
3. Descend to 800ft AGL (ACS says 600 to 1000 AGL)
4. Configure **88 KIAS; 4700 RPM**
5. Enter maneuver on **downwind**, use bank to correct for wind
(High Ground Speed = Steep, Low Ground Speed = Shallow)
6. Exit on appropriate 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 60 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 **3000RPM**
3. Slow to **70 KIAS** (Use pitch to hold Altitude)
4. Bank to **45°** and add extensive back pressure
5. At first indication (Horn or Buffet): **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)

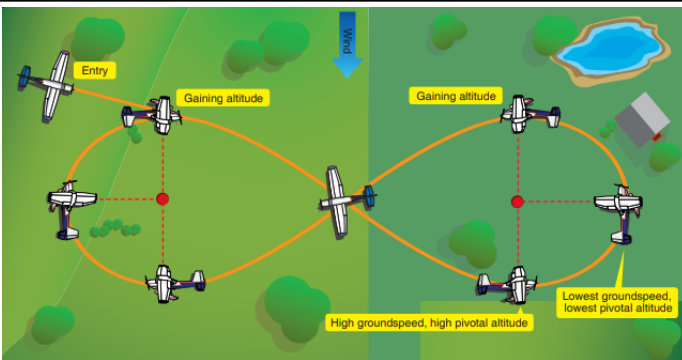
1. Perform **Pre-Maneuver Checklist**
2. Establish flight path into **Upwind**
3. Select ground **reference point**
4. When directly over the point, reduce **power to idle** and slow to **80 KIAS**
5. Adjust bank as necessary to keep **point at a fixed distance** up to 60° Bank
6. After completion of **each 360°** turn **Clear Engine** (power to 4000 RPMs 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 **5000 RPM; 100 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 **4700 RPM, Airspeed to Va 88 KIAS**
3. Select **90° Visual Reference**
4. **Establish 30° Bank** 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

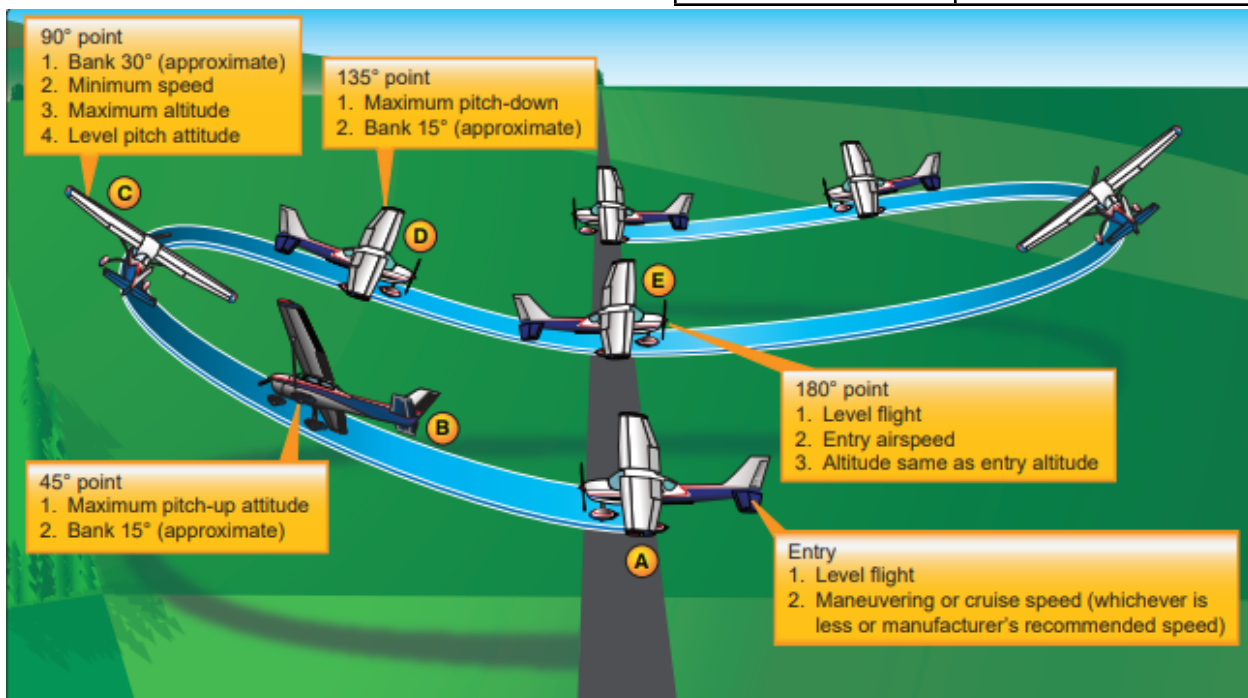
Heading: 180° ±10
Airspeed: Just above stall;
Maintain momentarily while avoiding stall

Lazy Eight (Commercial Only)

1. Perform **Pre-Maneuver Checklist**
2. Select **45°, 90° and 135° Visual References**
3. Verify configuration (maintain altitude, **Va 88 KIAS** and power **4700 RPM**)
4. **Increase pitch & bank 1-2° per second** (up to ~17° and speed should be near 55 KIAS)
 - 45°: 15° bank & max pitch up**
5. **Relieve back pressure, increase bank**
 - 90°: 30° bank, level pitch**
6. Let pitch decrease and slowly **reduce bank**
 - 135°: 15° bank & max pitch down**
7. Begin to add back pressure to Level off @ 180° from start at entry altitude, airspeed and reciprocal heading
8. Repeat steps 4-7 to the **Opposite 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
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