



Sky 4 Maneuvers and Procedures Guidance

Aerial Maneuvers

SLOW FLIGHT

Entry:

- Execute clearing turns.
- Identify suitable outside visual reference point.
- Power: Reduce to **1500 RPM**.
- Pitch: Adjust to maintain altitude and decrease airspeed.
- Airspeed: **50 Knots**
- Flaps: Below 85 KIAS – Increase incrementally to full.
- Power: Readjust power to approx. **2100 RPM** when within 5kts of desired airspeed.

During Maneuver:

- Accomplish coordinated straight-and-level turns, climbs, and descents as requested by the CFI/DPE.

Recovery:

- Power – Smoothly increase to full.
- Flaps – Retract incrementally.
- Pitch – Adjust as necessary to maintain altitude.
 - (As power is increased, forward pressure on the yoke may be required. As flaps are retracted, back pressure on the yoke may be required to counteract the sudden loss of lift.)
- Trim – Adjust as necessary to return to a normal cruise pitch attitude.

Private Pilot ACS Standards:

- Altitude: ± 100 feet
- Airspeed: $+10/-0$ knot
- Heading: ± 10 degrees
- Bank Angle: ± 10 degrees of specified bank angle
- Coordination must be maintained throughout the maneuver

Commercial Pilot ACS Standards:

- Altitude: ± 50 feet
- Airspeed: $+5/-0$ knot
- Heading: ± 5 degrees
- Bank Angle: ± 5 degrees of specified bank angle
- Coordination must be maintained throughout the maneuver

POWER-OFF STALL

Entry:

- Execute clearing turns.
- Identify suitable outside visual reference point.
- Power: Reduce to **1500 RPM**.
- Pitch: Adjust to maintain altitude.
- Flaps: Below 85 KIAS – Increase incrementally to full.
- Airspeed: Establish **65 kt descent**.
- Reduce power to idle while increasing back pressure to maintain altitude.

Private Pilot: Full stall

Commercial Pilot: First stall indication

Recovery:

- Pitch – Reduce
- Power – Smoothly increase to full
- Bank – Roll wings level (if in turning flight)
- Flaps – Retract incrementally (first notch should be retracted immediately during stall recovery)
- Once proper airflow is restored over the wings, smoothly transition to a VY climb to the altitude specified by the CFI/DPE
- Trim – Adjust as necessary to maintain VY and/or level off

Private Pilot ACS Standards:

- Heading: ± 10 degrees
- Bank Angle: ± 10 degrees if in turning flight
 - Bank angle should not exceed 20 degrees in either direction
- Coordination must be maintained throughout the maneuver
- Maneuver execution and recovery should be completed no lower than 1500' AGL

Commercial Pilot ACS Standards:

- Heading: ± 10 degrees
- Bank Angle: ± 5 degrees if in turning flight
 - Bank angle should not exceed 20 degrees in either direction
- Coordination must be maintained throughout the maneuver
- Maneuver execution and recovery should be completed no lower than 1500' AGL

POWER-ON STALL

Entry:

- Execute clearing turns.
- Identify suitable outside visual reference point.
- Power: Reduce to **1500 RPM**.
- Pitch: Adjust to maintain altitude.
- Airspeed: Reduce to **50 knots**.
- Increase power to full and begin pitching the nose up to approximately 20-22 degrees.

Private Pilot: Full stall

Commercial Pilot: First stall indication

Recovery:

- Pitch – Reduce
- Power – Confirm full
- Bank – Roll wings level (if in turning flight)
- Flaps – Verify up
- Once proper airflow is restored over the wings, smoothly transition to a VY climb to the altitude specified by the CFI/DPE
- Trim – Adjust as necessary to maintain VY and/or level off

Private Pilot ACS Standards:

- Heading: ± 10 degrees
- Bank Angle: ± 10 degrees if in turning flight
 - Bank angle should not exceed 20 degrees in either direction
- Coordination must be maintained throughout the maneuver
- Maneuver execution and recovery should be completed no lower than 1500' AGL

Commercial Pilot ACS Standards:

- Heading: ± 10 degrees
- Bank Angle: ± 5 degrees if in turning flight
 - Bank angle should not exceed 20 degrees in either direction
- Coordination must be maintained throughout the maneuver
- Maneuver execution and recovery should be completed no lower than 1500' AGL

ACCELERATED STALL – COMMERCIAL ONLY

Entry:

- Execute clearing turns.
- Identify suitable outside visual reference point.
- Power: Reduce to **1500 RPM**.
- Pitch: Adjust to maintain altitude.
- Airspeed: Reduce to **75 KIAS**.
- Perform a quick and smooth roll in either direction to 45-degree bank and provide brisk upward pressure on the yoke until the aircraft provides the first indication of a stall (stall horn/buffet).

Recovery:

- Pitch – Reduce
- Power – Smoothly increase to full
- Bank – Roll wings level
- Once proper airflow is restored over the wings, smoothly transition to a VY climb or the altitude specified by the CFI/DPE
- Trim – Adjust as necessary to maintain VY and/or level off

Commercial Pilot ACS Standards:

- Bank angle should be established at 45 degrees and coordination maintained throughout the entire maneuver
- Airspeed should at no point exceed the aircraft's maneuvering speed
- Maneuver execution and recovery should be completed no lower than 3000 feet AGL

STEEP TURNS

Entry:

- Execute clearing turns.
- Identify suitable outside visual reference point.
- Airspeed: Stabilize at **90 KIAS** (approx. **2300 RPM**).
 - Private Pilot: Roll into a 45 degree banked turn to the left or right.
 - Commercial Pilot: Roll into a 50 degree banked turn to the left or right
- Pitch and power should be adjusted through the turn to maintain altitude and airspeed, respectively.
- Upon reaching the reference point, immediately transition to a (45 or 50 degree) banked turn in the opposite direction.

Recovery:

- Upon reaching the reference point, roll wings level, reduce pitch to maintain altitude, and reduce power to maintain airspeed. Re-trim as necessary.

Private Pilot ACS Standards:

- Altitude: ± 100 feet from entry altitude
- Airspeed: ± 10 knots
- Heading: ± 10 degrees from entry heading on rollout
- Bank: ± 5 degrees (reference is 45)
- Coordination must be maintained throughout the maneuver

Commercial Pilot ACS Standards:

- Altitude: ± 100 feet from entry altitude
- Airspeed: ± 10 knots
- Heading: ± 10 degrees from entry heading on rollout
- Bank: ± 5 degrees (reference is 50)
- Coordination must be maintained throughout the maneuver

CHANDELLES – COMMERCIAL ONLY

LAZY EIGHTS – COMMERCIAL ONLY

STEEP SPIRALS – COMMERCIAL ONLY

Ground Reference Maneuvers

TURNS AROUND A POINT

Entry:

- Execute clearing turns
- Determine wind direction within close proximity to the ground (approx. 1000 feet AGL).
- Identify an easily distinguishable ground landmark.
 - NOTE: The selected landmark should be located near a suitable place to land (i.e., an open field) in the event of an engine failure or other emergency. DO NOT SELECT A LANDMARK NEAR AN AIRPORT.
- Airspeed: Stabilize at **90 KIAS**
- Altitude: between **600-1000 AGL**
- Heading: begin **downwind**, the reference landmark should pass off your left wing.
- Abeam the ground reference landmark, begin a left-banked turn.
 - NOTE: The downwind segment requires the greatest bank as groundspeed is highest at this point. As the aircraft transitions upwind, bank must be reduced.
- Continue for two complete turns around the ground reference landmark, maintaining a constant radius around the point (approx. ½-1 mile).

Recovery :

- Exit the maneuver on the entry heading.

Private Pilot ACS Standards:

- Altitude: ± 100 feet from entry altitude
- Maneuver should be conducted between 600 and 1000 feet AGL at an appropriate distance from the ground reference landmark
- Airspeed: ± 10 knots
- Heading: must begin downwind
- Coordination must be maintained throughout the maneuver

S-TURNS

Entry:

- Execute clearing turns.
- Determine wind direction within close proximity to the ground (approx. 1000 feet AGL).
- Identify a ground reference which takes on the shape of a straight line (i.e., a long stretch of road, powerlines, railroad tracks, etc.)
- Airspeed: Stabilize at **90 KIAS**
- Altitude: between **600-1000ft AGL**
- Heading: entry must be **downwind**.
- Once the aircraft flies above the ground reference line, execute a turn to the left. The aircraft should turn 180 degrees and be directly above the ground reference line once the wings are level.
 - NOTE: Initially, greater bank will be required to compensate for the increased groundspeed on downwind. As the aircraft transitions upwind, bank must be continuously decreased as groundspeed decreases.
- Repeat 180 degree turn to the right.
 - NOTE: Because the aircraft is beginning the turn upwind, a shallower bank will be required due to the slower groundspeed. As the aircraft transitions downwind, bank must be continually increased as groundspeed increases.

Recovery:

- Exit the maneuver on the entry heading.

Private Pilot ACS Standards:

- Altitude: ± 100 feet from entry altitude
- Airspeed: ± 10 knot
- Maneuver should be conducted between 600 and 1000 feet AGL at an appropriate distance from the ground reference landmark
- Heading: must begin downwind
- Coordination must be maintained throughout the maneuver