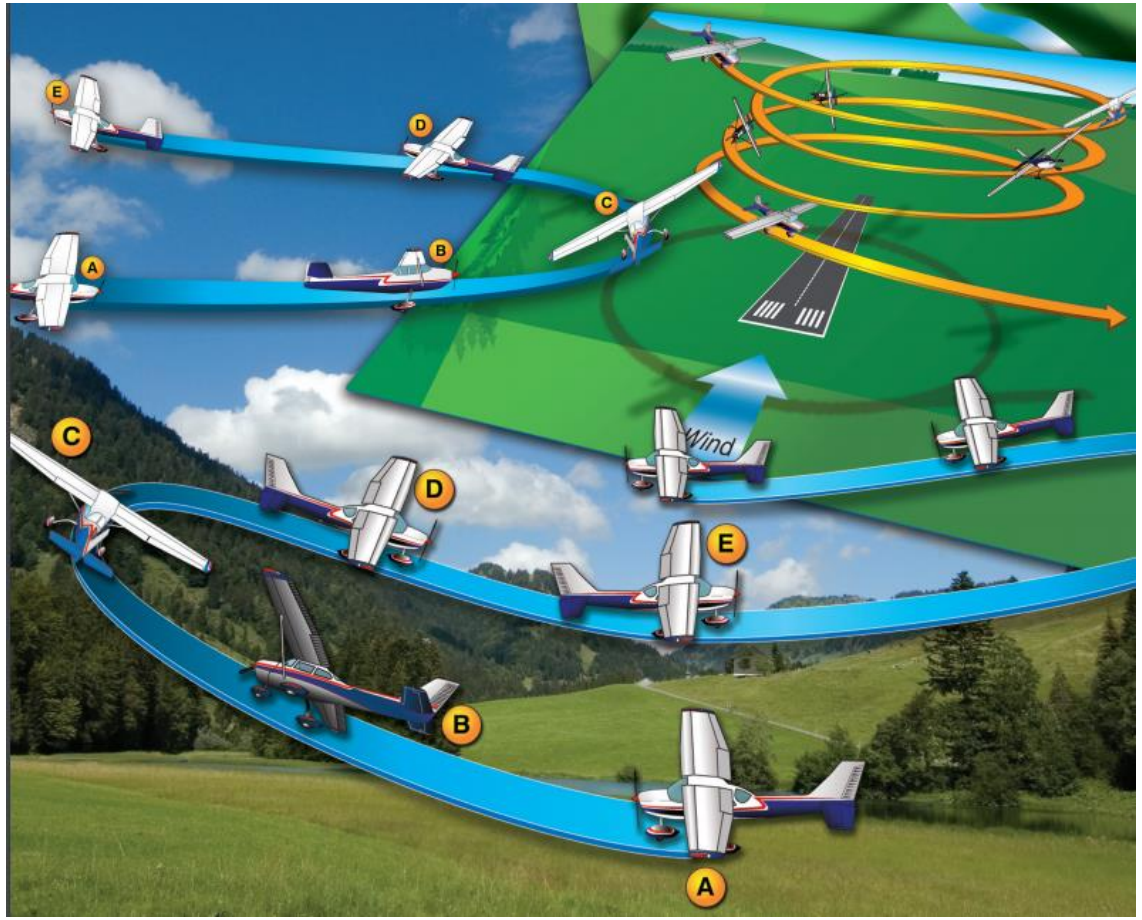
G36 Commercial Maneuvers Explained

All Maneuvers are explained using completion standards from the Commercial PTS

Notes

- All maneuvers referenced are best performed if flown at 130KIAS in the G36
- Best power setting for this:
  - 2300 RPM
  - 17-18” MP
- All maneuvers must begin at or above 1500’ AGL
- Do clearing turns at the beginning, then as required after

Performance Manuevers



Steep turns

1. Begin at training cruise
2. Place the airplane on cardinal heading (references are easier to locate)
3. When ready roll into a 50° bank to either side (commercial standards require both)
4. After established apply back pressure as necessary to maintain sight picture
5. Add about 2” MP to maintain airspeed (±10kts), or as required
6. Begin rollout 20° prior to initial heading
7. Continue rollout to 50° bank in the opposite direction, repeat 1-6

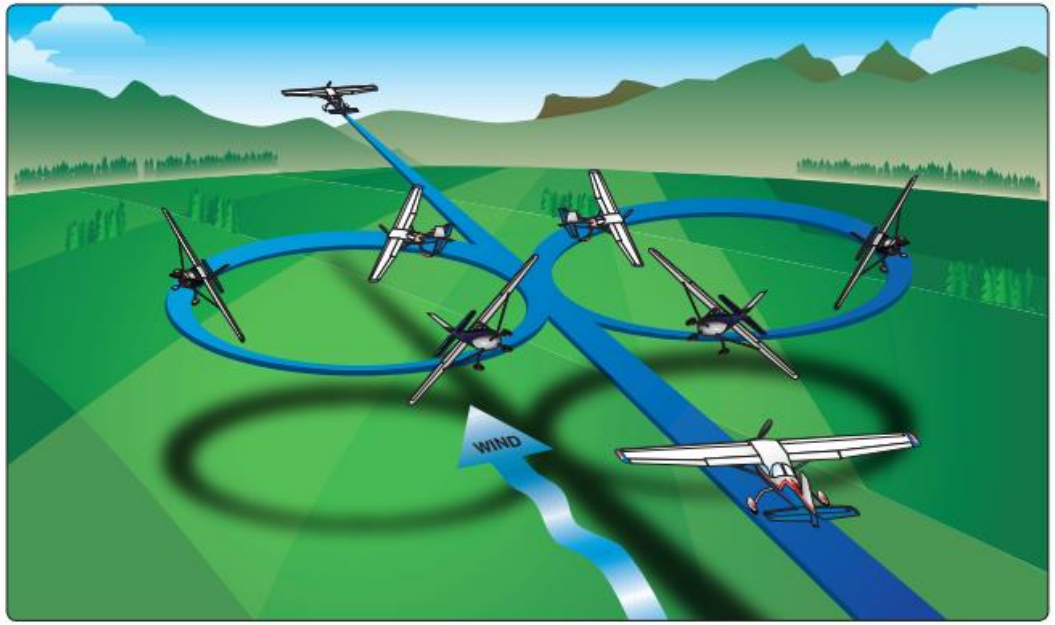


Figure 9-1. *Steep turns.*

Steep Turns (cleanup)

After rollout from 2nd steep turn:

8. Maintain altitude (±50ft!!!), and simultaneously reduce power to training cruise to prevent the nose from ballooning (if excessive trim was used).

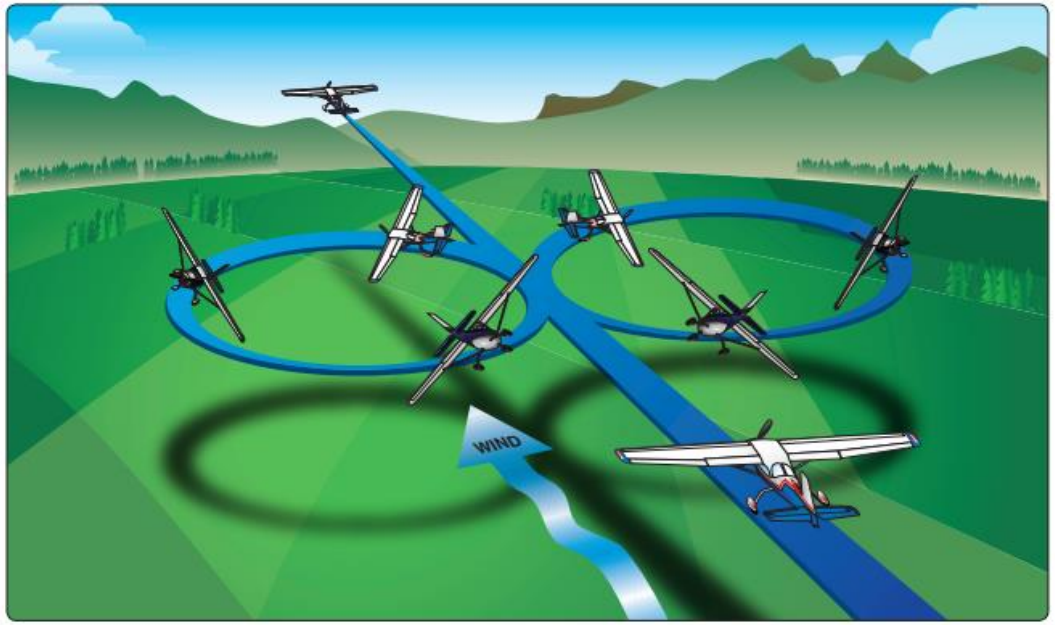


Figure 9-1. *Steep turns.*

Slow flight

1. From training cruise begin to dirty the airplane while simultaneously maintaining altitude. Bring throttle back to 15” MP.
2. Below 154KIAS: gear down, flaps approach
3. Below 124KIAS: flaps full
4. Continue trimming the airplane as necessary to maintain altitude
5. Through 90KIAS, push prop full forward
6. Once stall horn is heard immediately add power (23” MP), lower nose (ACS says +10kts, -0kts after stall horn)
7. After initial power, reduce as necessary (20-23” MP) to maintain altitude and stall airspeed + 10kts.

Slow Flight (cont.)

8. Maneuver using no more than 15° of bank
9. After maneuvering cleanup by adding full power, retracting first flaps to approach, and opening cowl flaps. Maintain altitude ±50 feet.
10. Retract gear after positive rate is established, then flaps up, finally when airspeed is at 120KIAS gradually reduce power to training cruise.

Power-Off Stall

1. Begin to dirty the airplane while maintaining altitude. Bring throttle back to 15”MP.
2. Below 154KIAS: gear down, flaps approach
3. Below 124KIAS: flaps full
4. Trim as necessary
5. Through 90KIAS: propeller full forward
6. Below 80KIAS: begin descent, establish -500fpm, then pull nose up to stall attitude gradually (about 10-12° nose up pitch)
7. At first stall indication (buffet or below 61KIAS), immediately recover

Power-Off Stall (recovery)

8. Recovery begins with full power, bring the nose to level attitude to arrest descent (0-3° nose up)
9. Retract flaps to approach, pitch up for climb attitude
10. After positive rate is established gear up, flaps up
11. Continue climb
12. After climb, return to normal training cruise flight

Power-On Stall

1. Dirty the airplane while maintaining altitude. Bring throttle back to 15” MP.
2. Below 154KIAS: gear down
3. Trim as needed while plane slows down
4. Slowing through 90KIAS, slowly advance the propeller control to low pitch/high rpm
5. Be sure cowl flaps are opened
6. When through 85KIAS, slowly establish climb attitude (12-15° nose up), and advance the throttle to full
7. At first sign of buffet or when below 68KIAS, immediately recover

Power-On Stall (recovery)

8. Bring the nose level to break the stall, then gradually up to 5° nose up.
9. After stall is broken, establish climb attitude, verify positive rate, then retract gear
10. Climb as necessary, then establish training cruise

Chandelle (left or right)

1. To begin, establish training cruise, and heading on a cardinal direction
2. Find visual references for a 90° point, and a 180° point
3. When ready simultaneously square the power, roll into a 30° bank, and raise the nose to about 12-15° pitch up
4. Hold this heading and pitch until over the 90° point.
5. When passing through the 90° point, start a gradual reduction in bank to the 180° point
6. When at the 180° point the stall horn should be on, or just about on indicating a successful maximum performance climb

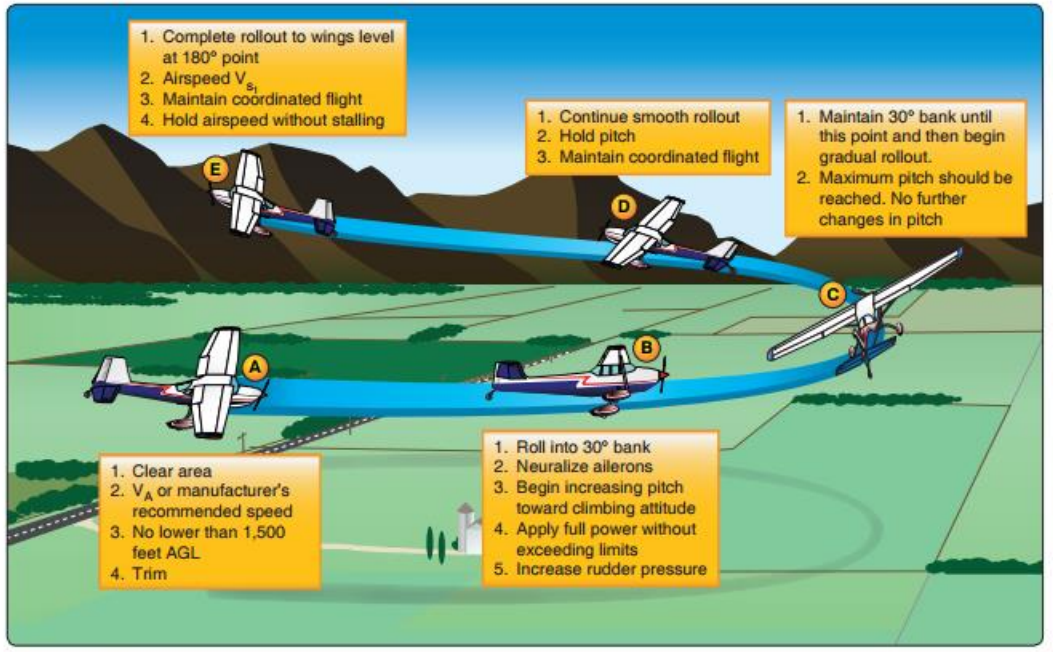


Figure 9-3. *Chandelle.*

Chandelle (left or right)

7. Once the maneuver is completed, “freeze” the altimeter by lowering the nose just enough to keep the VSI at zero.
8. Minimize the loss of altitude while allowing the airplane to accelerate back to training cruise
9. Once at 120KIAS, reduce power to training cruise

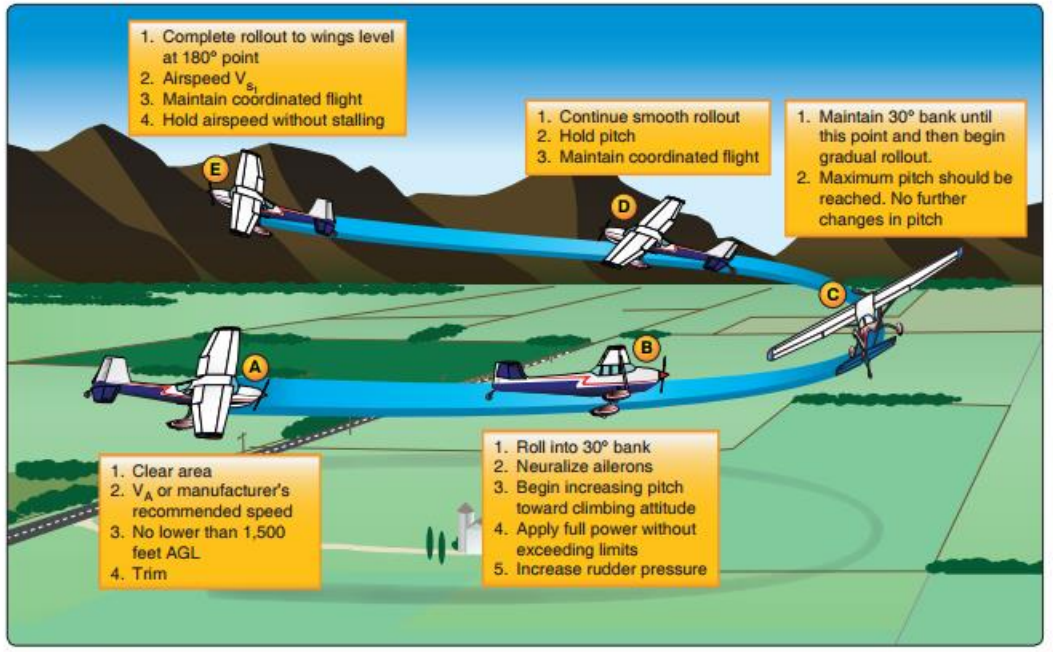


Figure 9-3. *Chandelle.*

Lazy-Eight

- Note that this maneuver is extremely touchy.
- Prior to beginning, establish visual references for the 45°,90°, 135°, and 180° points.
- Prior to beginning maneuver, make sure that the airplane is stable at ***EXACTLY*** 130KIAS -> about 17”-18”MP and 2300RPM worked consistently

1. 0-45° point: Begin to bank, and pitch together SLOWLY (this is a extremely slow maneuver). Max pitch and 15° bank should be established at 45° point.

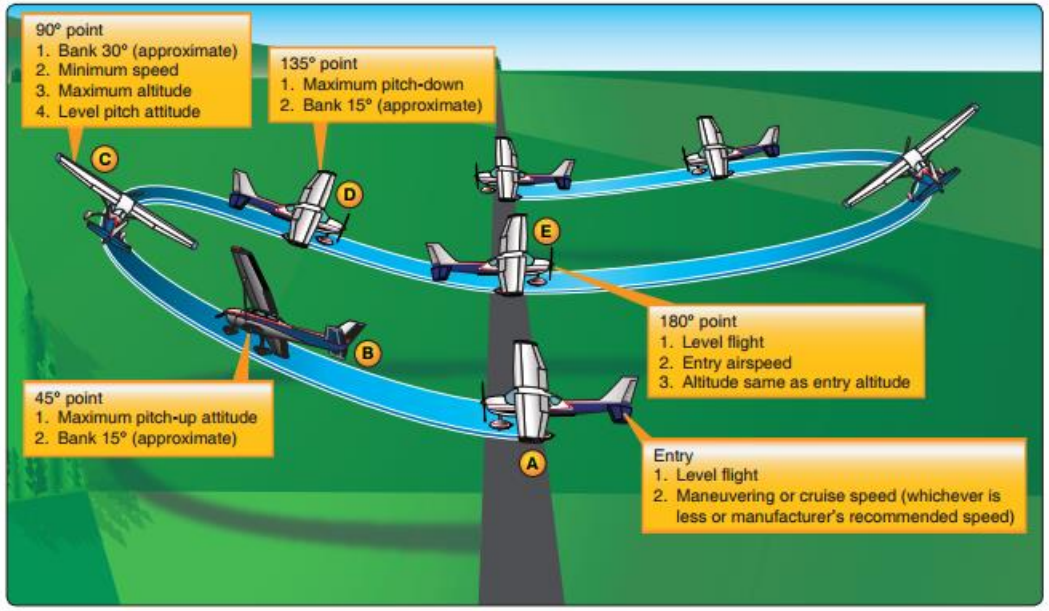


Figure 9-4. *Lazy eight.*

Lazy-Eight

2. 45°-90°: At this point max pitch up (12-15° nose up), and 15° bank established. As the plane continues to approach 90° point gradually increase bank and decrease pitch. At the 90° point the airplane attitude should be 30° bank, and 0° pitch AND descending.
3. 90°-135°: The bank should be at 30° and SLOWLY decreasing during this point. Also, pitch should be decreasing temporarily to no lower than 12° nose down, as the airspeed slowly increases. By 135° point pitch should be back at 15° and pitch should be raised as required to not overspeed, or lose significant altitude.

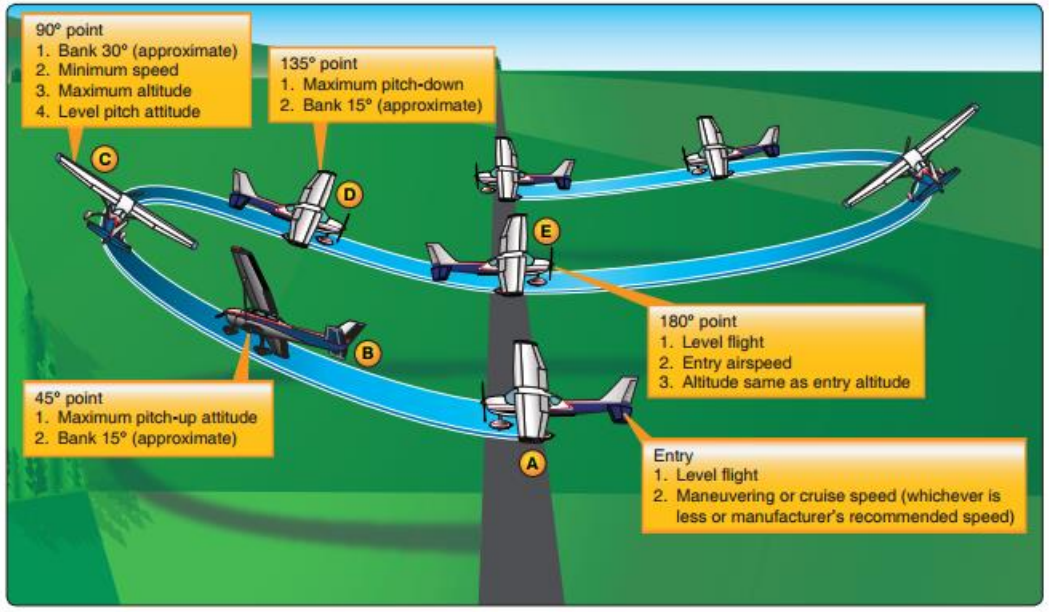


Figure 9-4. *Lazy eight.*

Lazy-Eight

4. 135°-180°: The maneuver is almost complete at this step. Bank should slowly be decreasing to level, and pitch should be simultaneously being increase back to 0°, as required not to overspeed, or be too high/low on altitude.
5. 180° point: repeat steps 1 through 4 in the opposite direction ASAP. There should be no pause in between.

- Note that power should not be adjusted in the maneuver. Constant power is required to complete within standards
- Use of trim is not recommended during this maneuver.

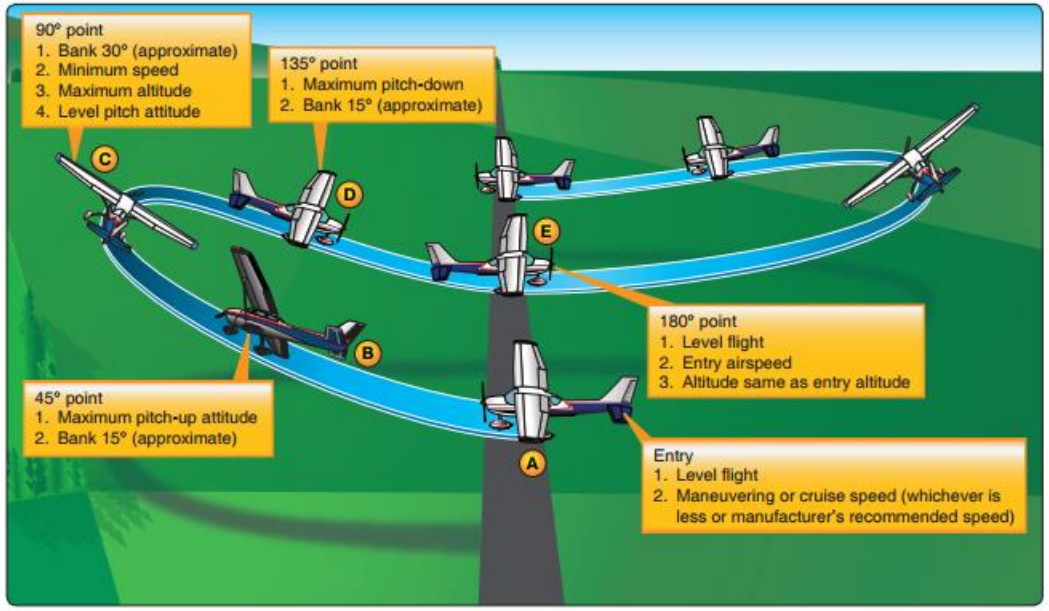


Figure 9-4. *Lazy eight.*

Steep Spiral

- Combines a turn about a point and a descent at idle and best glide

1. Begin in training cruise at about 5,000’ AGL
2. Turn plane into downwind, and look for pylon
3. Find visual points about the pylon that are on cardinal headings, and about ¼ mile from pylon
4. Close cowl flaps
5. Once abeam the pylon at first point, cut the power to idle, pitch for 110KIAS, and begin turns about a point at ¼ mile radius from pylon

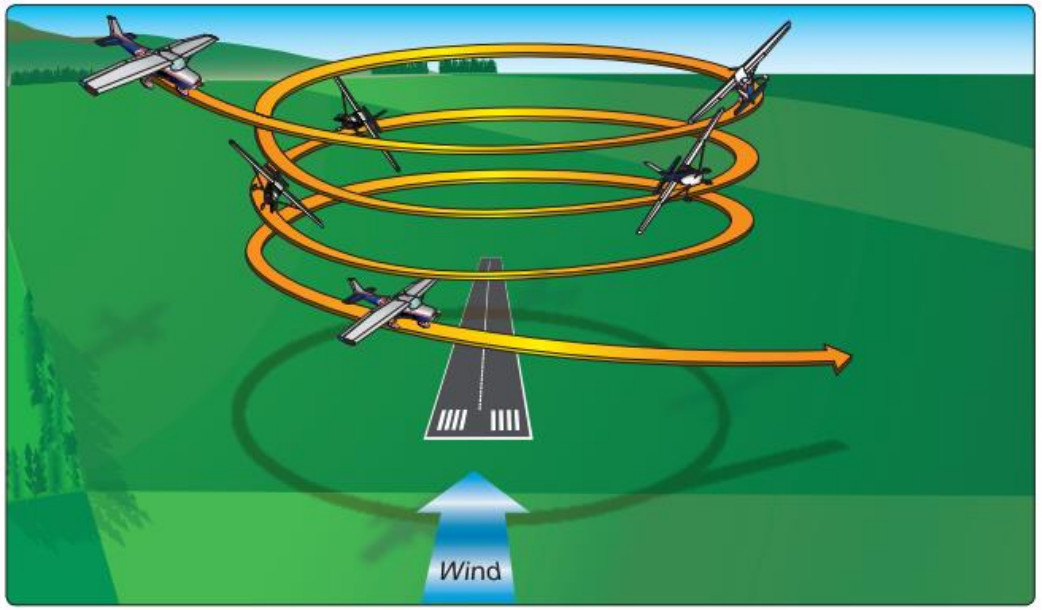


Figure 9-2. *Steep spiral.*

Steep Spiral

6. Upon the abeam point after 360°, clear the engine, and resume turns about a point
7. At no lower than 1,000’ AGL, recover from the steep spiral, and exit on the downwind

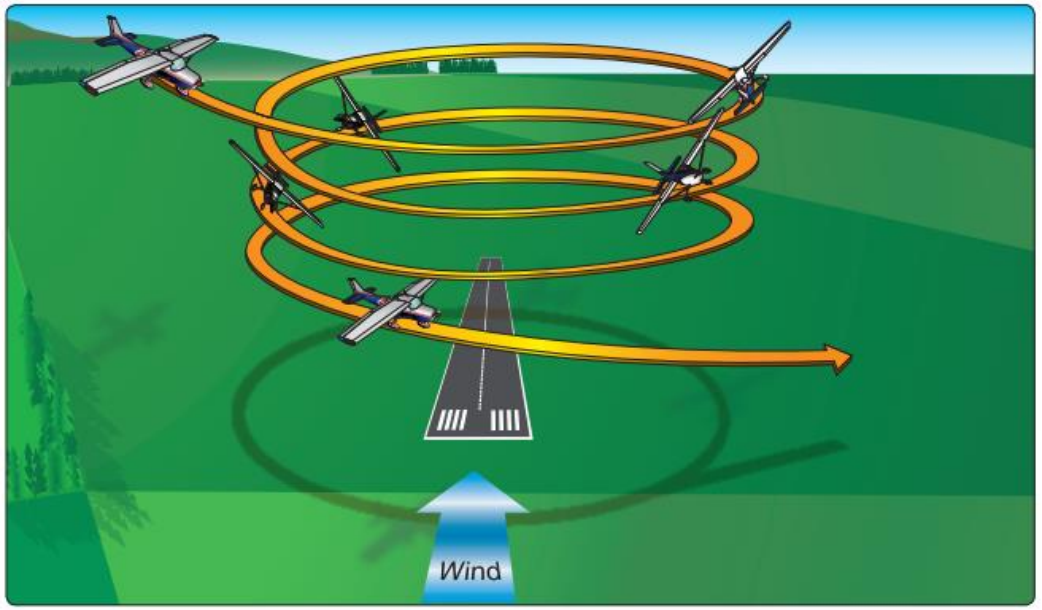


Figure 9-2. *Steep spiral.*

Eights-on Pylons

- Mostly visual maneuver, not a whole lot of setup inside the cockpit

1. Once the airplane is established exactly in training cruise, turn the plane downwind
2. Calculate pivotal altitude, then maneuver the airplane to that altitude
3. Pick pylons about 1 mile apart
4. Once picked, maneuver the airplane to enter 45° to the downwind
5. Once abeam the first pylon, wait 2-3 seconds, then turn into the pylon

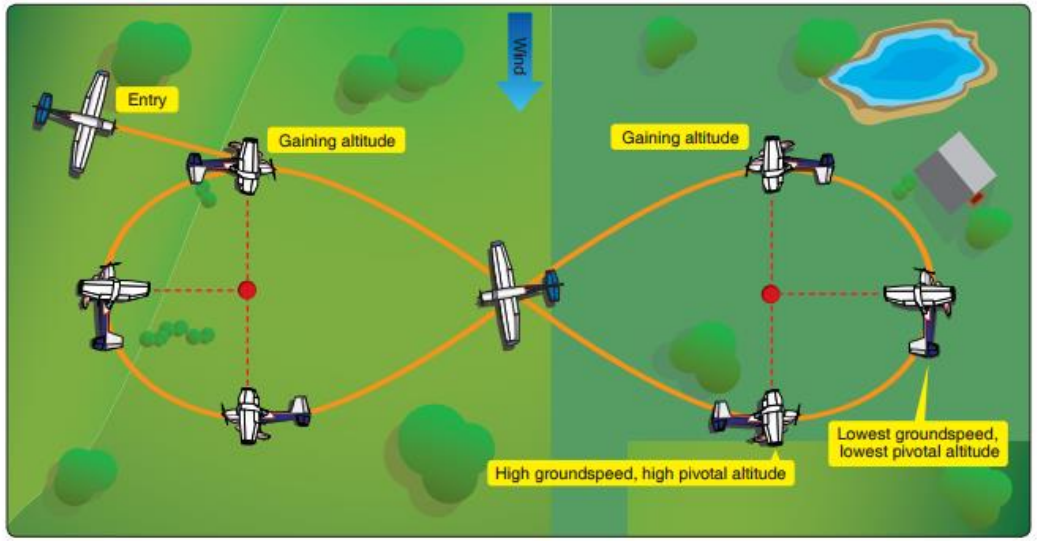


Figure 6-10. *Eights on pylons.*

Eights-on Pylons

6. Keep the pylon toward the front side of the wingtip (first set of rivets back from the leading edge)
7. If the pylon goes ahead of the wing, you are above pivotal altitude pitch down slightly
8. If pylon goes behind wing, you are below pivotal altitude, pitch up slightly
9. Continue the turn until approximately at the midpoint between pylons
10. Repeat steps 4-9 for the second pylon. Exit maneuver on downwind

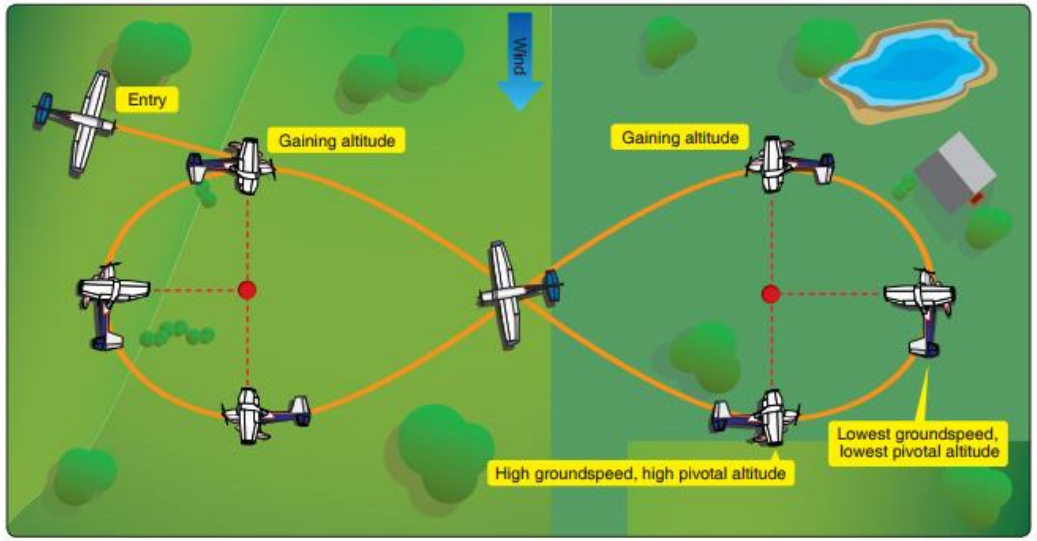


Figure 6-10. *Eights on pylons.*

Power-off 180° approach

1. Begin in downwind flying a closer-than-normal pattern
2. At midfield put gear down, go through GUMPS checklist
3. At the abeam point, pull power idle, establish best glide (110KIAS)
4. Wait approximately 3-5 seconds depending on wind, then turn base

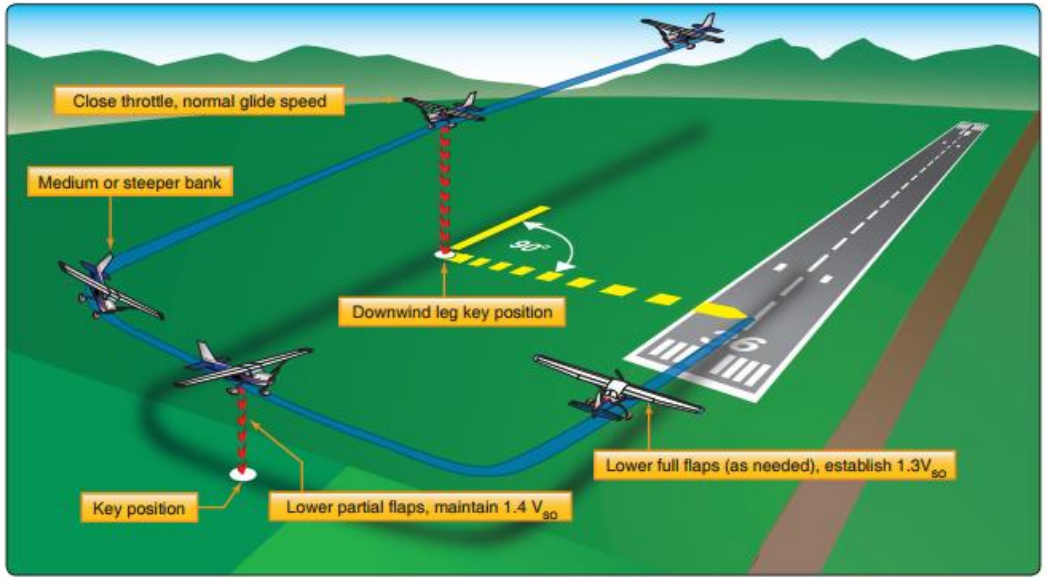


Figure 8-27. *180° power-off approach.*

Power-off 180° approach

5. Use best judgement whether to continue on base, or turn toward touchdown point
6. Add flaps as necessary to maintain airspeed on base (90KIAS)
7. Once on final add flaps as necessary and pitch for 85KIAS
8. Short final if low pull propeller to high pitch/low rpm to reduce drag

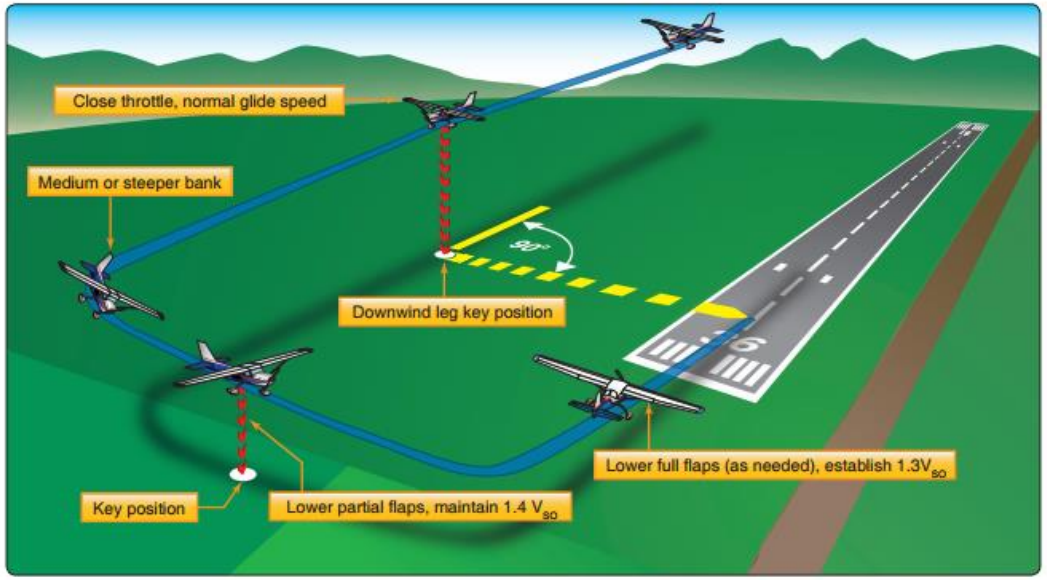


Figure 8-27. *180° power-off approach.*

Power-off 180° approach

9. Touchdown at your point -0 feet and no more than +200 feet

- This maneuver can be extremely difficult based on a variety of weather conditions
- It’s best to practice until proficient

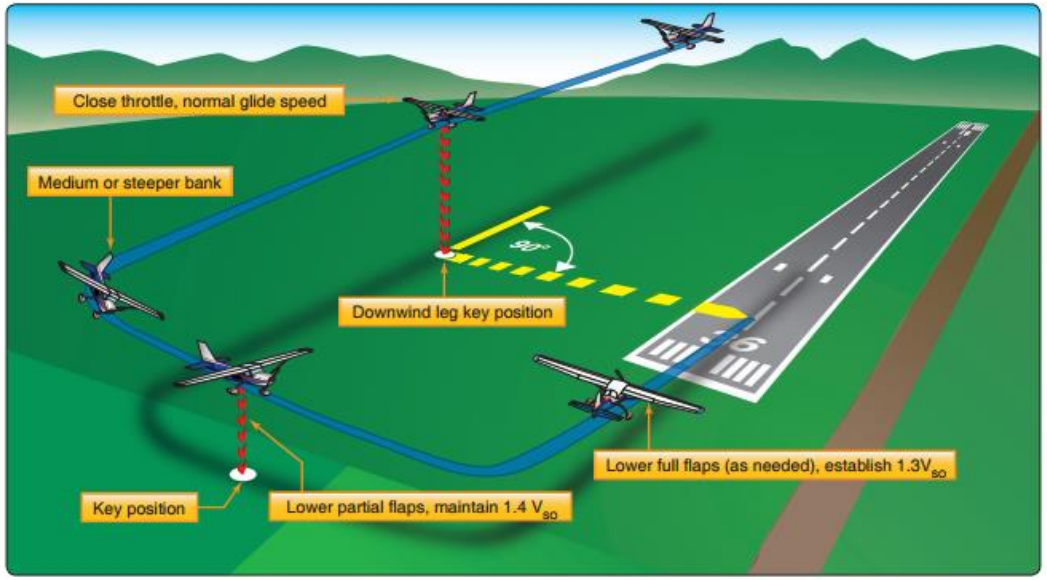


Figure 8-27. *180° power-off approach.*