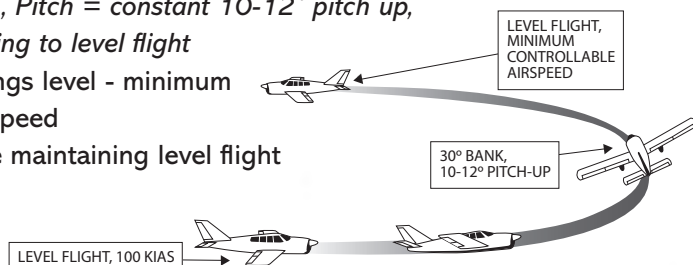


## GROUND USE ONLY - Commercial / CFI Single-Engine

### Chandelles

1. Perform two 90° clearing turns
2. 100 KIAS (\*2200 RPM) *maintain altitude*
3. Clean configuration flow
4. Choose a reference point off wing
5. Establish / maintain 30° bank
6. Full Throttle - Increase pitch to attain approx. 10-12° pitch up at 90° point  
*1st 90° of turn, Bank = constant 30°, Pitch = increasing to 10-12° pitch up*
7. 90° point - maintain pitch - reduce bank angle to attain level flight at 180° point  
*2nd 90° of turn, Pitch = constant 10-12° pitch up, Bank = decreasing to level flight*
8. 180° point - wings level - minimum controllable airspeed
9. Accelerate while maintaining level flight
10. Cruise checklist



### Clean Configuration Flow

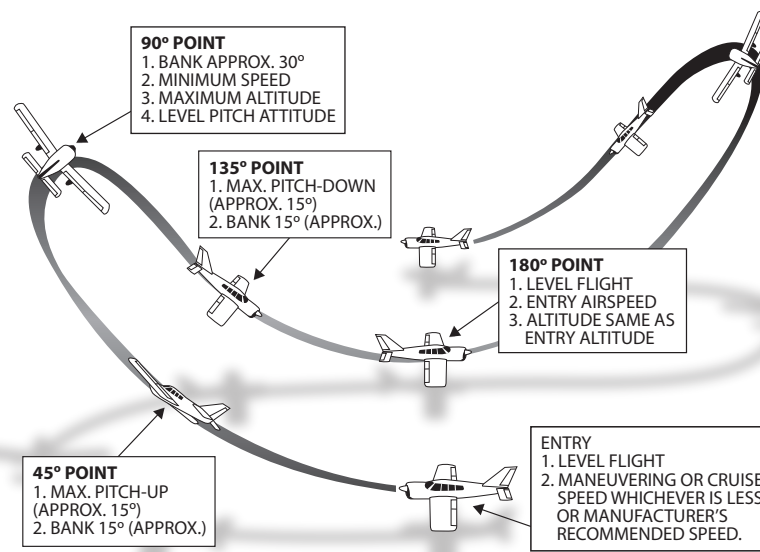
Fuel Selector - Both  
Mixture - Enrichen  
Flaps 0°

### Landing Configuration Flow

Fuel Selector - Both  
Mixture - Enrichen  
Carb Heat - On (Carbureted Models)  
Flaps - Full

### Lazy Eights

1. Perform two 90° clearing turns
2. 100 KIAS (\*2200 RPM) *maintain altitude*
3. Clean configuration flow
4. Choose a reference point off of the wing
5. Simultaneously increase pitch and bank (SLOWLY)
6. 45° point - 15° pitch up and 15° bank
7. Reduce pitch / increase bank
8. 90° point - level pitch - 30° bank
9. Continue reducing pitch and reduce bank
10. 135° point - 15° pitch down - 15° bank
11. 180° point - level flight - entry airspeed and altitude
12. Repeat in opposite direction
13. Cruise checklist



\*\*pitch and bank reference numbers approximate

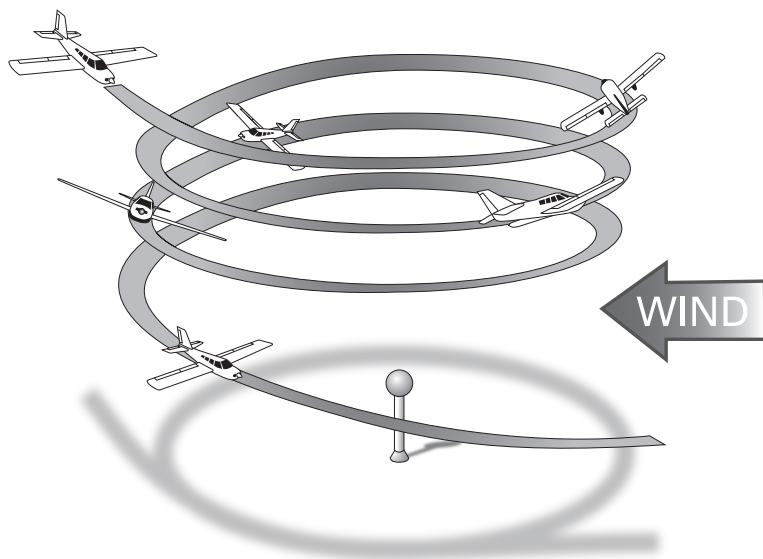
\*Configuration and throttle settings based on 160 HP R-Model 172. May vary based on specific airplane and prevailing conditions. Do not use procedures listed above without referencing the full procedures described in the approved Operators Manual or POH/AFM *specific to the airplane you are flying*. This guide is to be used as a reference only. ATP assumes no responsibility or liability for any errors or inaccuracies that may appear on this guide and it is not intended to replace the approved POH/AFM or FAA approved publications and procedures.

## GROUND USE ONLY - Commercial / CFI Single-Engine

### Steep Spirals

1. Altitude – at least 3000' AGL
2. Perform two 90° clearing turns
3. 80 KIAS (\*1700 RPM) maintain altitude
4. Clean configuration flow
5. Choose visual reference point
6. Reduce throttle to idle
7. Track at least three *constant radius* circles around reference point
8. Airspeed - constant
9. Bank angle – adjust for winds – not to exceed 60°
10. Clear engine once every 360° turn
11. Recover - roll out on specified heading (visual reference)
12. Adjust DG/HSI to compass
13. Cruise checklist

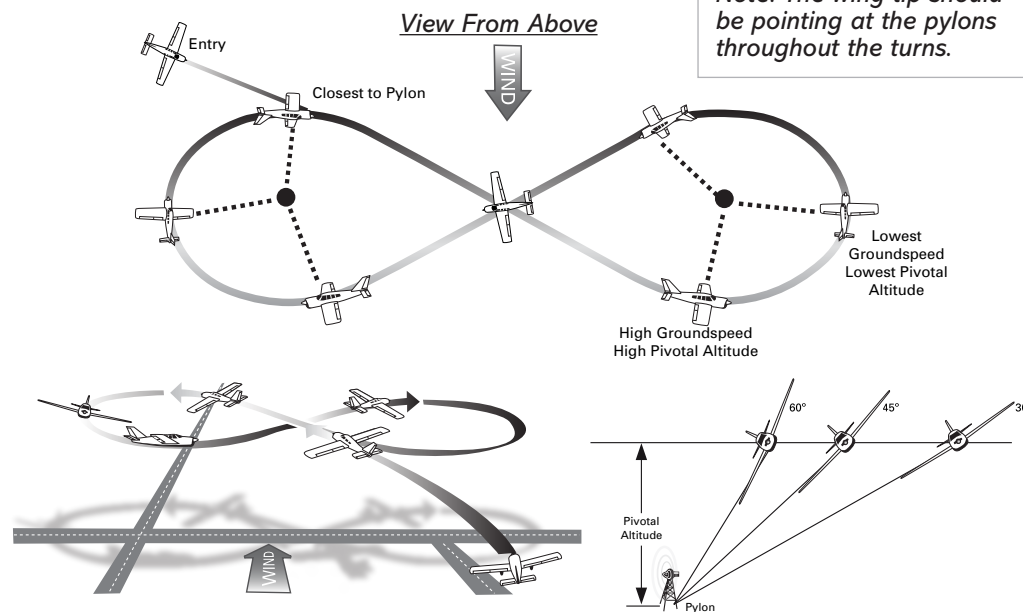
Note: The DG/HSI will precess during this maneuver. Rely on visual references.



### Eights On Pylons

1. Enter pivotal altitude (Approx 900' AGL at 100 KIAS - \*2200 RPM)
2. Perform two 90° clearing turns
3. Clean configuration flow
4. Select two pylons to allow for minimal time spent wings level between the two
5. Enter maneuver on a 45° midpoint downwind
6. Apply appropriate pitch corrections to compensate for changes in groundspeed and;
7. To maintain line of sight reference with the pylon (pitch forward if point moves toward nose and pitch back if point moves toward tail).
8. Begin rollout to allow the airplane to proceed diagonally between the pylons at a 45° angle.
9. Begin second turn in the opposite direction of the first
10. Exit maneuver on entry heading
11. Cruise checklist

Note: The wing tip should be pointing at the pylons throughout the turns.



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