

S Turns

About: Ground ref maneuver in which the planes ground track resembles two opposite but equal half-circles on each side of a selected ref line.

TSW: Learn wind correction during turns

How: Shown by entering downwind and performing 2x 180° turns at a fixed speed and altitude using bank to adjust for wind and maintain ground track.

Procedure:

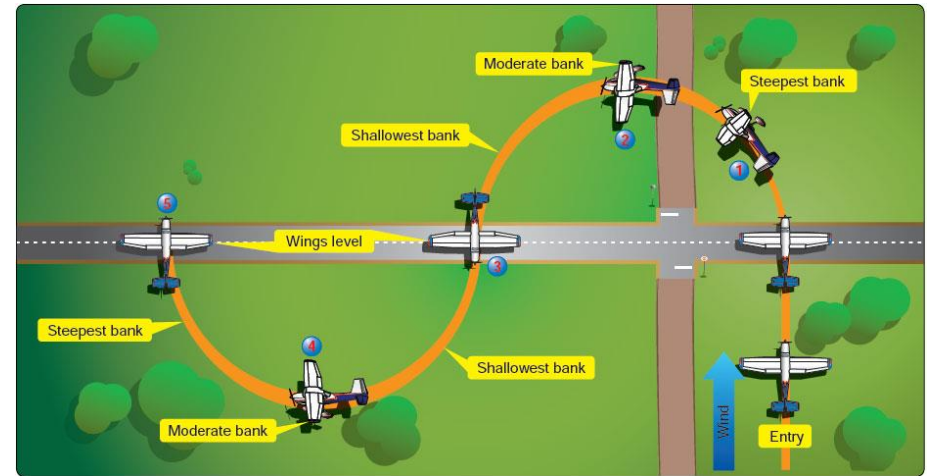
1. Two 90° clearing turns
2. Establish V_A or the recommended entry speed
3. Maintain 600 – 1000 AGL, Trim for level flight
4. Enter maneuver **downwind**, cross line wings level
5. When ref line is under wing begin left turn (**steepest bank**)
 - a. Not to exceed 45°
6. Crosswind: reduce bank: compensate for decreasing tailwind
7. Cross 180° point wings level, parallel with ref line.
8. Repeat steps 5-7 for a right turn

Discussion Points:

1. Trim for level flight prior to maneuver.
2. Determine wind direction and speed (AWOS)
3. Ensure emergency landing area available for selected field.
4. Select long straight road or similar terrain, check for obstacles
5. During turns, to maintain altitude, back pressure increased
6. Higher grd speeds-> steepen bank, Lower grd speed-> shallow bank
7. Look outside (ground track), peak inside (Altimeter/ Airspeed).

Evaluations/ Standards:

9. Alt: +/-100ft, A/S +/- 10kts
10. Select a suitable ground reference area/ line
11. Plans maneuver so as to enter 600 to 1000 feet AGL, at an appropriate distance from the reference point.
12. Applies adequate wind-drift correction to track a constant radius turn on each side of ref line
13. Divides attention between airplane control and the ground track while maintaining coordinated flight.



Common errors:

- Faulty entry procedure (entering upwind)
- Uncoordinated use of flight controls
- Improper correction for wind drift
 - Unsymmetrical ground track.
- Entering at an improper altitude.
- Failure to maintain selected altitude or airspeed.
 - Not dividing attention inside and outside resulting in a loss of gain in altitude.
- Not using correct bank angles in turns. (+45 degrees)
- Selection of a ground reference where there is no suitable emergency landing area within the gliding distance.
- Fixating on the field and forgetting to look for other air traffic.
- Failure to clear area and establish proper altitude prior to entry.