

PRIVATE PILOT

VI. AREA OF OPERATION: GROUND REFERENCE MANEUVERS

C. TASK: TURNS AROUND A POINT

OBJECTIVE

To determine that the applicant:

1. Exhibits knowledge of the elements related to turns around a point.
2. Selects a suitable ground reference point.
3. Plans the maneuver so as to enter left or right at 600 to 1000 feet (180 to 300 meters) AGL, at an appropriate distance from the reference point.
4. Applies adequate wind-drift correction to track a constant radius turn around the selected reference point.
5. Divides attention between airplane control and the ground track while maintaining coordinated flight.
6. Maintains altitude +/-100 feet (30 meters), and maintains airspeed +/-10 knots.

ELEMENTS

1. The airplane's ground track should describe a circle of uniform radius by correcting for changing wind drift while turning.
2. Essentially the same as S-turns with the opposite 180° turn now in the same direction as the first.
3. Select a small but prominent point.
4. Approach abeam the point from the upwind side, at selected altitude, on a downwind heading (fastest groundspeed for the airspeed flown).
5. When abeam, start the turn around the point.
6. Roll rate and bank angle should be the greatest when starting the downwind half-circle since the groundspeed is the greatest.
7. Reduce the bank angle as the downwind half-circle is flown, arriving at a minimum bank angle (at the minimum groundspeed) after 180° when ending the downwind half-circle and beginning the upwind half-circle.
8. Increase the bank angle as the upwind half-circle is flown, arriving again at a maximum bank angle (at the maximum groundspeed) after another 180° when ending the upwind half-circle and beginning another downwind half-circle.

COMMON ERRORS

- a. Failure to adequately clear the area.
- b. Faulty entry procedure.
- c. Failure to establish appropriate bank on entry.
- d. Failure to recognize wind drift.
- e. Poor planning, orientation, or division of attention.
- f. Excessive bank and/or inadequate wind correction angle on the downwind side of the circle resulting in drift towards the reference point.
- g. Uncoordinated flight control application.
- h. Inadequate bank angle and/or excessive wind correction angle on the upwind side of the circle resulting in drift away from the reference point.
- i. Failure to maintain selected altitude or airspeed.
- j. Skidding turns when turning from downwind to crosswind.
- k. Slipping turns when turning from upwind to crosswind.
- l. Inadequate visual lookout for other aircraft.
- m. Inability to direct attention outside the airplane while maintaining precise airplane control.
- n. Selection of a ground reference point where there is no suitable emergency landing area within gliding distance.

REFERENCES

1. FAA-H-8083-3A, Airplane Flying Handbook, Chapter 6.