SESSION 67: CIRCLING APPROACHES — PROTECTED AREA, AIRCRAFT CATEGORIES, AND MINIMUMS

1. A circling approach is a maneuver used when:

A. The final approach course is not aligned with the runway of intended landing (or terrain/operational need requires circling to land)

B. The glideslope fails

C. The GPS is unavailable

D. The weather is above VFR minimums

2. The circling minimums on an approach chart provide:

A. The decision altitude

B. The minimum altitude (MDA) and visibility for the visual circling maneuver to land

C. The straight-in minimums

D. The en route altitude

3. The circling MDA is expressed with a height value labeled:

A. HAT (Height Above Touchdown)

B. HAA (Height Above Airport)

C. MSA

D. TDZE

4. The "circling area" is the protected airspace around the airport within which:

A. Only straight-in approaches are flown

B. The aircraft must remain below the MDA

C. The missed approach is flown

D. Obstacle clearance is provided for the circling maneuver

5. The size (radius) of the circling protected area depends on the:

A. Runway length

B. Aircraft approach category (and, under the expanded criteria, the circling altitude)

C. Time of day

D. Wind direction

6. The aircraft approach category is determined by:

A. 1.3 times the stall speed in landing configuration (the approach/VREF speed)

B. The gross weight

C. The engine horsepower

D. The wingspan

7. Approach categories are designated:

A. 1 through 4

B. A, B, C, D (and E)

C. I, II, III

D. Low, medium, high

8. Under the older (standard) TERPS circling radii, a Category A aircraft has a circling radius of approximately:

A. 1.7 NM

B. 2.7 NM

C. 1.0 NM

D. 1.3 NM

9. Under the older standard radii, the circling radius increases with category, so a Category C aircraft has a larger radius than a Category:

A. D

B. A

C. E

D. There is no variation by category

10. The expanded circling approach radii (newer TERPS) account for:

A. True airspeed increasing with altitude, providing larger protected areas at higher airport elevations

B. The runway width

C. The time of day

D. The wind only

11. A chart using the expanded circling criteria is identified by:

A. A negative "C" symbol (inverse C) in the circling minimums box

B. A lightning bolt

C. A Maltese cross

D. A "T" in a triangle

12. When the expanded criteria apply, the pilot determines the circling radius from:

A. A table indexed by approach category and the circling MDA (altitude)

B. The runway length

C. The wind

D. The DME

13. A pilot circling must remain within the protected area because:

A. ATC requires it

B. Obstacle clearance is only guaranteed within that radius

C. The MDA changes outside it

D. The glideslope is lost

14. The pilot must not descend below the circling MDA until:

A. Reaching the FAF

B. The glideslope centers

C. In a position to make a normal descent to landing using normal maneuvers, with the runway environment in sight

D. ATC clears the descent

15. If the runway/airport environment is lost from sight while circling, the pilot must:

A. Continue the circle

B. Execute the missed approach

C. Descend to find it

D. Land straight ahead

16. The initial missed approach maneuver from a circling approach is to:

A. Continue straight ahead

B. Descend

C. Maintain the circling MDA

D. Make a climbing turn toward the landing runway to remain over the airport, then proceed on the published missed approach

17. A higher approach category has a larger circling radius because:

A. It flies lower

B. It uses less airspace

C. It has a smaller turn radius

D. A faster aircraft has a larger turn radius and needs more protected airspace

18. A pilot flying a Category A airplane may elect to use higher-category circling minimums if:

A. Circling at a speed in a higher category (the minimums correspond to the speed actually flown)

B. The runway is short

C. The weather is good

D. ATC assigns it

19. The circling minimums are generally higher than the straight-in minimums because:

A. The runway is closer

B. The glideslope is steeper

C. The DME is required

D. The circling maneuver requires maneuvering at low altitude with obstacle clearance over a larger area

20. A pilot circling at night or over dark terrain must be especially cautious of:

A. The DME

B. The glideslope

C. Visual illusions and descending prematurely while maneuvering

D. The transponder

21. The HAA (Height Above Airport) used for circling is referenced to the:

A. Highest airport elevation

B. Touchdown zone of the straight-in runway

C. MSA

D. En route altitude

22. When circling is not authorized for a procedure (e.g., "Circling NA"), the pilot:

A. May circle anyway

B. May descend below MDA

C. Must not circle to land using that procedure

D. Must hold

23. Staying within the protected circling area typically requires the pilot to:

A. Fly a wide pattern

B. Descend below MDA early

C. Keep the maneuver close to the runway/airport within the category radius

D. Fly at maximum speed

24. A pilot uncertain of remaining within the protected area should:

A. Continue regardless

B. Descend to verify position

C. Speed up

D. Fly conservatively, keep the airport in sight, and go missed if unable to remain protected or maintain visual references

25. The fundamental principle of circling protected areas and categories is that the pilot must:

A. Use the lowest minimums regardless of speed

B. Circle at any radius

C. Fly the circling maneuver at or above the circling MDA, within the protected area for the applicable category/criteria, descending to land only when properly positioned with the required visual references

D. Disregard the category

ANSWER KEY & EXPLANATIONS — SESSION 67

1. A. Course not aligned — A circling approach is used when the final approach course is not aligned with the runway of intended landing (or terrain/operational need requires circling).

2. B. Circling MDA/visibility — The circling minimums provide the minimum altitude (MDA) and visibility for the visual circling maneuver to land.

3. B. HAA — The circling MDA height is labeled HAA (Height Above Airport).

4. D. Obstacle clearance for circle — The circling area is the protected airspace within which obstacle clearance is provided for the circling maneuver.

5. B. Category (and altitude) — The circling protected-area radius depends on the aircraft approach category (and, under the expanded criteria, the circling altitude).

6. A. 1.3 VSO — The approach category is determined by 1.3 times the stall speed in landing configuration (the approach/VREF speed).

7. B. A–D (and E) — Approach categories are designated A, B, C, D (and E).

8. D. ~1.3 NM — Under the older standard radii, a Category A aircraft has a circling radius of approximately 1.3 NM.

9. B. Larger than A — Under the standard radii, the radius increases with category, so Category C is larger than Category A.

10. A. TAS with altitude — The expanded circling radii account for true airspeed increasing with altitude, providing larger protected areas at higher airport elevations.

11. A. Inverse-C symbol — A chart using the expanded criteria is identified by a negative "C" (inverse C) symbol in the circling minimums box.

12. A. Table by category/MDA — Under the expanded criteria, the radius is determined from a table indexed by approach category and the circling MDA (altitude).

13. B. Obstacle clearance only within — The pilot must remain within the protected area because obstacle clearance is only guaranteed within that radius.

14. C. Normal descent position — The pilot must not descend below the circling MDA until in a position to make a normal descent to landing using normal maneuvers, with the runway environment in sight.

15. B. Missed approach — If the runway/airport environment is lost from sight while circling, the pilot must execute the missed approach.

16. D. Climbing turn toward runway — The initial missed approach from a circling approach is a climbing turn toward the landing runway to remain over the airport, then the published missed approach.

17. D. Larger turn radius — A higher category has a larger circling radius because a faster aircraft has a larger turn radius and needs more protected airspace.

18. A. Speed actually flown — A Category A airplane circling at a higher-category speed uses the higher-category minimums (the minimums correspond to the speed actually flown).

19. D. Maneuvering over larger area — Circling minimums are higher than straight-in because the circling maneuver requires maneuvering at low altitude with obstacle clearance over a larger area.

20. C. Illusions/premature descent — Circling at night or over dark terrain requires caution about visual illusions and descending prematurely while maneuvering.

21. A. Highest airport elevation — The HAA for circling is referenced to the highest airport elevation.

22. C. Must not circle — When "Circling NA" is published, the pilot must not circle to land using that procedure.

23. C. Keep close within radius — Staying within the protected area requires keeping the maneuver close to the runway/airport within the category radius.

24. D. Conservative/go missed — If uncertain of remaining protected, the pilot flies conservatively, keeps the airport in sight, and goes missed if unable to remain protected or maintain visual references.

25. C. At/above MDA, within area — The fundamental principle is to fly the circling maneuver at or above the circling MDA, within the protected area for the applicable category/criteria, descending to land only when properly positioned with the required visual references.