SESSION 64: NON-PRECISION APPROACHES — STEP-DOWN FIXES, MDA, AND VDP

1. A step-down fix on a non-precision approach allows the aircraft to:

A. Begin the missed approach

B. Hold

C. Circle

D. Descend to a lower minimum altitude after passing the fix, where obstacle clearance permits

2. Descending through a step-down fix, the pilot must not descend to the next lower altitude until:

A. Reaching the MAP

B. Crossing/passing the step-down fix

C. The glideslope centers

D. ATC approves

3. The MDA (Minimum Descent Altitude) is the lowest altitude to which the aircraft may descend on a non-precision approach until:

A. The required visual references are in sight, or the MAP is reached

B. The glideslope is captured

C. ATC clears a lower altitude

D. The aircraft is over the runway

4. A pilot at the MDA without the required visual references must:

A. Descend slightly to find the runway

B. Climb back to the FAF

C. Continue at or above the MDA to the MAP, then go missed if still without references

D. Circle below the MDA

5. A "visual descent point" (VDP) on a straight-in non-precision approach is:

A. The point on the final approach course from which a normal descent from the MDA to the runway can be made, provided the required visual references are in sight

B. The missed approach point

C. The final approach fix

D. A step-down fix

6. The VDP is depicted on the chart by:

A. A Maltese cross

B. A "V" symbol on the profile view

C. A lightning bolt

D. A filled triangle

7. Descending from the MDA before reaching the VDP risks:

A. A go-around

B. Capturing a false glideslope

C. Reverse sensing

D. An unsafe early descent that may not clear obstacles and a shallow/low approach

8. If the runway is in sight at the MDA but the aircraft has not yet reached the VDP, the pilot should:

A. Descend immediately

B. Begin the missed approach

C. Level off below the MDA

D. Remain at the MDA until reaching the VDP, then begin a normal descent to land

9. If the aircraft passes the VDP at the MDA without the required visual references, a normal descent to the runway:

A. Is no longer assured; the pilot should be prepared to go missed at the MAP

B. Should be made anyway

C. Is guaranteed

D. Requires descending below MDA early

10. A VDP can be computed when not published. A common method divides the height above touchdown (HAT) by the descent angle, or uses the rule of thumb of HAT divided by:

A. 100

B. 200

C. 300 (for a 3-degree path, giving distance in NM from the threshold)

D. 500

11. For an MDA with a 400-foot HAT on a 3-degree path, the VDP is approximately how far from the threshold?

A. About 1.3 NM (400 ÷ 300)

B. About 4 NM

C. About 0.4 NM

D. About 2 NM

12. When no VDP is published and the approach has a vertical descent angle (VDA), the pilot can fly a CDFA so that:

A. The descent reaches the MDA near the point where a normal landing descent begins

B. The aircraft levels at each step-down

C. The MDA is ignored

D. The aircraft dives to the runway

13. The "dive-and-drive" technique reaches the MDA:

A. At the runway threshold

B. Early, then levels off at the MDA until the VDP/MAP

C. At the FAF

D. After the MAP

14. A CDFA (continuous descent final approach) differs from dive-and-drive in that it:

A. Levels off at every step-down

B. Dives to the MDA at the FAF

C. Flies a stabilized constant-angle descent to a decision point near the MDA, avoiding a prolonged level segment

D. Circles at the MDA

15. The primary safety benefit of identifying and respecting the VDP is to:

A. Avoid an unstable, low approach or premature descent that could result in CFIT

B. Lower the MDA

C. Eliminate the missed approach

D. Provide vertical guidance

16. The MDA must be treated as a hard floor on a dive-and-drive approach, meaning the aircraft:

A. May descend 50 feet below it

B. May descend below it at the VDP regardless of references

C. May not descend below the MDA without the required visual references

D. Must level at the FAF

17. A step-down fix that is not identifiable (e.g., DME inoperative) means the pilot:

A. May descend to the lowest altitude anyway

B. Cannot use the lower altitude associated with that fix and must use the higher minimum

C. May ignore the step-down

D. Must go missed at the FAF

18. The HAT (Height Above Touchdown) value is used in computing the VDP because:

A. It sets the circling minimum

B. It is the en route altitude

C. It is the MSA

D. It represents the height the aircraft must descend from the MDA to the touchdown zone

19. A pilot who descends below the MDA without the required visual references has:

A. Flown a proper approach

B. Committed a serious deviation risking obstacle/terrain collision

C. Executed the missed approach

D. Satisfied the procedure

20. Reaching the MAP at or above the MDA without the required visual references requires the pilot to:

A. Descend to find the runway

B. Execute the missed approach

C. Level off below the MDA

D. Circle

21. A published VDP applies only to the:

A. Circling approach

B. Missed approach

C. En route segment

D. Straight-in landing (it does not apply to circling approaches)

22. The descent from the MDA to the runway beginning at the VDP should be:

A. A steep dive

B. A level segment

C. A circling maneuver

D. A normal, stabilized descent at approximately the published/typical 3-degree angle

23. Managing the vertical profile on a non-precision approach requires the pilot to:

A. Descend to the MDA as fast as possible

B. Ignore the step-downs

C. Honor each step-down minimum, level at or remain above the MDA, and descend below only at/after the VDP with the required references

D. Use the glideslope

24. The combination of step-down fixes and the MDA exists to:

A. Provide vertical guidance

B. Replace the missed approach

C. Provide obstacle clearance during the final descent without electronic vertical guidance

D. Lower the visibility requirement

25. The fundamental principle of step-downs, the MDA, and the VDP is that the pilot must:

A. Descend below the MDA at the FAF

B. Manage the descent to honor obstacle-protection altitudes, hold the MDA until a normal landing descent is assured (at/after the VDP with references), and go missed otherwise

C. Treat the MDA as advisory

D. Always dive to the MDA

ANSWER KEY & EXPLANATIONS – SESSION 64

1. D. Descend after fix — A step-down fix allows descending to a lower minimum altitude after passing the fix, where obstacle clearance permits.

2. B. Pass the fix — The pilot must not descend to the next lower altitude until crossing/passing the step-down fix.

3. A. References or MAP — The MDA is the lowest altitude until the required visual references are in sight or the MAP is reached.

4. C. Continue to MAP — At the MDA without references, the pilot continues at or above the MDA to the MAP, then goes missed if still without references.

5. A. Normal descent point — A VDP is the point from which a normal descent from the MDA to the runway can be made, provided the required visual references are in sight.

6. B. "V" on profile — The VDP is depicted by a "V" symbol on the profile view.

7. D. Unsafe early descent — Descending before the VDP risks an unsafe early descent that may not clear obstacles and a shallow/low approach.

8. D. Hold MDA to VDP — If the runway is in sight at the MDA but before the VDP, the pilot remains at the MDA until the VDP, then begins a normal descent.

9. A. Be ready to miss — Passing the VDP at the MDA without references means a normal descent is no longer assured; be prepared to go missed at the MAP.

10. C. HAT ÷ 300 — A common VDP rule of thumb divides HAT by 300 (for a 3-degree path, giving distance in NM from the threshold).

11. A. ~1.3 NM — 400 ÷ 300 ≈ 1.3 NM from the threshold.

12. A. MDA near landing point — With a VDA, a CDFA can be flown so the descent reaches the MDA near the point where a normal landing descent begins.

13. B. Early, then level — Dive-and-drive reaches the MDA early, then levels off at the MDA until the VDP/MAP.

14. C. Stabilized constant angle — A CDFA flies a stabilized constant-angle descent to a decision point near the MDA, avoiding a prolonged level segment.

15. A. Avoid CFIT/unstable — Respecting the VDP avoids an unstable, low approach or premature descent that could result in CFIT.

16. C. No descent without references — The MDA is a hard floor: the aircraft may not descend below it without the required visual references.

17. B. Use higher minimum — An unidentifiable step-down fix means the pilot cannot use the lower altitude and must use the higher minimum.

18. D. Height to touchdown — HAT is used in the VDP computation because it represents the height the aircraft must descend from the MDA to the touchdown zone.

19. B. Serious deviation — Descending below the MDA without the required visual references is a serious deviation risking obstacle/terrain collision.

20. B. Missed approach — Reaching the MAP at/above the MDA without the required visual references requires executing the missed approach.

21. D. Straight-in only — A published VDP applies only to the straight-in landing; it does not apply to circling approaches.

22. D. Normal stabilized ~3° — The descent from the MDA beginning at the VDP should be a normal, stabilized descent at approximately a 3-degree angle.

23. C. Honor step-downs/MDA/VDP — Managing the vertical profile requires honoring each step-down minimum, leveling at or remaining above the MDA, and descending below only at/after the VDP with the required references.

24. C. Obstacle clearance — Step-downs and the MDA provide obstacle clearance during the final descent without electronic vertical guidance.

25. B. Honor altitudes/hold MDA — The fundamental principle is to manage the descent to honor obstacle-protection altitudes, hold the MDA until a normal landing descent is assured (at/after the VDP with references), and go missed otherwise.