

SESSION 62: NON-PRECISION APPROACHES

— VOR APPROACHES: SETUP AND TECHNIQUE

1. A VOR approach is a non-precision approach that provides:
 - A. Vertical guidance to a DA
 - B. A glideslope
 - C. Distance guidance only
 - D. Lateral course guidance from a VOR, flown to an MDA

2. When the VOR station is located on the airport, the missed approach point (MAP) is often:
 - A. The outer marker
 - B. A step-down fix
 - C. The decision altitude
 - D. The VOR station itself (station passage)

3. When the VOR station is off the airport, the MAP is typically defined by:
 - A. A specified time from the FAF (or a DME/fix), since the station is not at the runway
 - B. The station passage
 - C. The localizer
 - D. The glideslope intercept

4. On an off-airport VOR approach using timing, the pilot starts the clock at the:

- A. Initial approach fix
- B. Missed approach point
- C. Step-down fix
- D. Final approach fix (FAF)

5. The time from the FAF to the MAP is found:

- A. On the en route chart
- B. By guessing
- C. In the timing table on the approach chart, indexed by groundspeed
- D. On the airport diagram

6. At a groundspeed of 90 knots (1.5 NM per minute), the time to fly a 4.5 NM FAF-to-MAP segment is:

- A. 2 minutes
- B. 3 minutes
- C. 4 minutes
- D. 90 seconds

7. At a groundspeed of 120 knots (2 NM per minute), the time to fly a 5.0 NM FAF-to-MAP segment is:

- A. 1 minute
- B. 2 minutes 30 seconds
- C. 3 minutes
- D. 5 minutes

8. Reaching the MAP (by time, fix, or station passage) without the required visual references, the pilot must:

- A. Execute the missed approach
- B. Descend below the MDA to find the runway
- C. Level off and continue
- D. Circle indefinitely

9. A "procedure turn" or course reversal on a VOR approach is used to:

- A. Increase the descent rate
- B. Establish the glideslope
- C. Reverse course and align the aircraft inbound on the final approach course when needed
- D. Hold at the MAP

10. A course reversal is NOT required when:

- A. The pilot prefers to fly it
- B. The approach has no FAF
- C. The weather is below minimums
- D. Arriving via a route or vector that establishes the aircraft inbound (e.g., "NoPT," radar vectors, or a procedure turn is not depicted)

11. On a VOR approach, the pilot tracks the final approach course by:

- A. Following the glideslope
- B. Timing only
- C. Keeping the CDI centered with wind correction, descending per the profile
- D. Using the localizer

12. A step-down fix on a VOR approach allows the aircraft to:

- A. Descend to a lower altitude after the fix when obstacle clearance permits
- B. Begin the missed approach
- C. Hold
- D. Circle

13. The MDA on a VOR approach is the:

- A. Decision altitude
- B. Glideslope intercept altitude
- C. Lowest altitude to which the aircraft may descend until the visual references or MAP
- D. Circling-only altitude

14. A pilot flying a VOR approach with a CDFA technique uses the published vertical descent angle (VDA) to:

- A. Guarantee obstacle clearance below the MDA
- B. Replace the MDA
- C. Eliminate the timing requirement
- D. Fly a stabilized constant-angle descent toward the MDA/decision point

15. Identifying the VOR by its Morse code before the approach confirms:

- A. The correct, operational station is tuned
- B. The DME distance
- C. The glideslope is active
- D. The wind

16. A VOR approach's accuracy degrades with distance from the station because:

- A. The DME fails
- B. The angular CDI sensitivity means the same deflection covers more distance farther out
- C. The glideslope steepens
- D. The MDA rises

17. The CDI becomes more sensitive as the aircraft nears the VOR, so the pilot should:

- A. Increase corrections
- B. Disregard the CDI
- C. Make smaller, smoother corrections approaching the station
- D. Fly faster

18. A VOR approach that crosses the station inbound passes through the:

- A. Glideslope
- B. Cone of confusion (brief CDI fluctuation and flag change)
- C. Localizer
- D. Marker beacon

19. When the MAP is the station and the aircraft reaches it without visual references:

- A. The pilot descends below MDA
- B. The missed approach is executed at station passage
- C. The pilot holds at the MDA
- D. The pilot circles

20. The "timing" method for the MAP is reliable only if the pilot uses the:

- A. Correct groundspeed (accounting for wind) to enter the timing table
- B. Indicated airspeed
- C. True airspeed at cruise
- D. Mach number

21. A strong headwind on the final approach segment will make the FAF-to-MAP time:

- A. Longer, because the groundspeed is lower
- B. Shorter
- C. Unchanged
- D. Irrelevant

22. The fundamental limitation of a VOR approach compared to an ILS is the absence of:

- A. A localizer
- B. A missed approach
- C. A timing requirement
- D. Electronic vertical guidance, so it is flown to a higher MDA

23. A pilot established inbound on the VOR final approach course should verify:

- A. The glideslope is captured
- B. The DME is paired
- C. The marker beacons
- D. The correct radial/course is set and tracked, and begin descent at the FAF per the profile

24. A "VOR/DME" approach uses DME to:

- A. Provide vertical guidance
- B. Identify step-down fixes, the FAF, and/or the MAP by distance
- C. Replace the VOR
- D. Set the MDA

25. The fundamental skill of flying a VOR approach is to:

- A. Capture a glideslope
- B. Track the final approach course with wind correction, descend per the profile to the MDA, and identify the MAP by time/fix/station, going missed if the required visual references are not in sight
- C. Fly directly over the station continuously
- D. Disregard the timing

ANSWER KEY & EXPLANATIONS – SESSION 62

1. D. Lateral to MDA — A VOR approach provides lateral course guidance from a VOR, flown to an MDA.
2. D. Station as MAP — When the VOR is on the airport, the MAP is often the VOR station itself (station passage).
3. A. Time/DME/fix — When the VOR is off the airport, the MAP is typically defined by a specified time from the FAF (or a DME/fix).
4. D. FAF — On a timed off-airport VOR approach, the pilot starts the clock at the FAF.
5. C. Timing table — The FAF-to-MAP time is found in the timing table on the approach chart, indexed by groundspeed.

6. B. 3 minutes — $4.5 \text{ NM} \div 1.5 \text{ NM/min (90 kt)} = 3 \text{ minutes}$.

7. B. 2:30 — $5.0 \text{ NM} \div 2 \text{ NM/min (120 kt)} = 2.5 \text{ minutes (2 minutes 30 seconds)}$.

8. A. Missed approach — Reaching the MAP without the required visual references, the pilot must execute the missed approach.

9. C. Reverse/align inbound — A course reversal aligns the aircraft inbound on the final approach course when needed.

10. D. NoPT/vectors — A course reversal is not required when arriving via a route or vector that establishes the aircraft inbound (NoPT, radar vectors, or no depicted procedure turn).

11. C. CDI centered + descend — On a VOR approach, the pilot tracks the final course by keeping the CDI centered with wind correction, descending per the profile.

12. A. Descend after fix — A step-down fix allows descending to a lower altitude after the fix when obstacle clearance permits.

13. C. Lowest altitude to MAP — The MDA is the lowest altitude to which the aircraft may descend until the visual references or MAP.

14. D. Stabilized descent — A published VDA is used to fly a stabilized constant-angle descent toward the MDA/decision point.

15. A. Correct station — Identifying the Morse code confirms the correct, operational station is tuned.

16. B. Angular sensitivity — VOR accuracy degrades with distance because the angular CDI sensitivity means the same deflection covers more distance farther out.

17. C. Smaller corrections near station — As the CDI becomes more sensitive near the VOR, the pilot makes smaller, smoother corrections.

18. B. Cone of confusion — A VOR approach crossing the station inbound passes through the cone of confusion (brief CDI fluctuation and flag change).

19. B. Miss at station — When the MAP is the station and the aircraft reaches it without visual references, the missed approach is executed at station passage.

20. A. Correct groundspeed — The timing method is reliable only if the pilot uses the correct groundspeed (accounting for wind) to enter the timing table.

21. A. Longer time — A strong headwind lowers groundspeed, making the FAF-to-MAP time longer.

22. D. No vertical guidance — The fundamental limitation versus an ILS is the absence of electronic vertical guidance, so it is flown to a higher MDA.

23. D. Verify course/begin descent — Established inbound, the pilot verifies the correct radial/course is set and tracked and begins descent at the FAF per the profile.

24. B. DME identifies fixes — A VOR/DME approach uses DME to identify step-down fixes, the FAF, and/or the MAP by distance.

25. B. Track/descend/identify MAP — The fundamental skill is to track the final course with wind correction, descend per the profile to the MDA, identify the MAP by time/fix/station, and go missed if the required visual references are not in sight.