SESSION 63: NON-PRECISION APPROACHES — LNAV AND LOC-ONLY APPROACHES

1. Both LNAV (GPS) and LOC (localizer-only) approaches are:

A. Non-precision approaches providing lateral guidance to an MDA

B. Precision approaches

C. Vertically-guided approaches to a DA

D. Circling-only approaches

2. An "LNAV" approach derives its lateral course guidance from:

A. A ground-based localizer

B. The GPS/RNAV system tracking the coded final approach course

C. A VOR radial

D. A glideslope transmitter

3. A "LOC" (localizer-only) approach derives its lateral course guidance from:

A. The GPS

B. A VOR

C. A glideslope

D. The ILS localizer signal (without the glideslope)

4. A LOC approach is commonly published as the non-precision fallback for an ILS when:

A. The GPS is unavailable

B. The glideslope is out of service or the aircraft is not glideslope-equipped

C. The VOR fails

D. The weather is below minimums

5. The LNAV final approach course on a GPS navigator is tracked with the navigator in:

A. En route mode

B. Approach (LNAV) mode, with the CDI sensitivity scaled for the final segment

C. Terminal mode permanently

D. Suspend mode

6. In approach mode for an LNAV, the GPS CDI sensitivity scales to approximately:

A. ±5 NM

B. ±1 NM

C. ±2.5 degrees

D. ±0.3 NM

7. The LOC course, like the ILS localizer, is:

A. Angularly sensitive, tightening toward the runway (about four times a VOR's sensitivity)

B. Constant-width to the runway

C. Less sensitive than a VOR

D. Vertically guided

8. A key difference between LNAV and LOC lateral guidance is that LNAV provides:

A. A glideslope

B. Constant-width (linear) course guidance, while the LOC is angular (narrowing toward the runway)

C. Angular guidance and the LOC is linear

D. No course guidance

9. Both LNAV and LOC approaches are flown to:

A. A decision altitude

B. A glideslope intercept

C. A circling-only minimum

D. A minimum descent altitude (MDA)

10. Reaching the MDA on an LNAV or LOC approach, the pilot:

A. Descends below the MDA to find the runway

B. Climbs back to the FAF

C. Levels off below the MDA

D. May continue at or above the MDA to the MAP, descending below only with the required visual references

11. A LOC-only approach has no glideslope, so the pilot manages the descent using:

A. The glideslope needle

B. The GPS vertical guidance

C. Pitch and power to descend per the profile/step-downs to the MDA

D. The marker beacons

12. An "LNAV+V" annunciation on an LNAV approach indicates:

A. Advisory vertical guidance; the controlling minimum is still the LNAV MDA

B. An LPV approach

C. A precision approach

D. A glideslope to a DA

13. The MAP on an LNAV approach is typically:

A. The station

B. The outer marker

C. A coded waypoint (the missed approach point) sequenced by the navigator

D. The glideslope intercept

14. The MAP on a LOC approach is typically defined by:

A. The GPS waypoint

B. A timing from the FAF, a DME distance, or a fix (since there is no glideslope to a DA)

C. The station

D. The glideslope

15. A LOC back course approach provides lateral guidance:

A. With a glideslope

B. From the GPS

C. From the localizer signal on the opposite side, without glideslope, requiring attention to reverse sensing

D. To a DA

16. A pilot flying a LOC approach must guard against capturing a:

A. False sense of the reverse-sensing back course if mis-set, by using an HSI set to the front-course heading

B. False glideslope

C. Wrong GPS mode

D. Marker beacon

17. The advantage of an LNAV approach where no ground-based approach exists is that it:

A. Provides a non-precision approach using only GPS, independent of ground navaids

B. Requires a localizer

C. Provides a glideslope

D. Eliminates the MDA

18. A pilot must verify the GPS is in approach (LNAV) mode before the FAF because:

A. The MDA is lower

B. The DME pairs automatically

C. If the navigator has not transitioned, the lateral sensitivity and guidance are not at approach values, and descending on LNAV minimums would be improper

D. The glideslope requires it

19. A LOC approach is identified and tracked by:

A. A GPS waypoint

B. A VOR radial

C. A glideslope

D. Tuning and identifying the localizer frequency and setting the front-course inbound on the CDI/HSI

20. Both approaches share the requirement that the pilot:

A. Track the lateral course precisely with wind correction and not descend below the MDA without the required visual references

B. Capture a glideslope

C. Fly to a DA

D. Circle to land

21. A continuous descent final approach (CDFA) can be flown on an LNAV or LOC approach using:

A. The glideslope

B. The GPS RAIM

C. The published vertical descent angle (VDA) for a stabilized descent toward the MDA/decision point

D. The marker beacons

22. A pilot should brief whether the approach is LNAV or LOC because:

A. The DA differs

B. The circling minimums differ

C. The glideslope differs

D. The guidance source, sensitivity behavior, and MAP definition differ, affecting how it is flown

23. The reason a LOC (or LNAV) approach has a higher MDA than an ILS DA is that:

A. The runway is shorter

B. The MDA applies to circling

C. Without electronic vertical guidance, a higher minimum is required for obstacle protection without a protected glidepath

D. The localizer is weaker

24. When an ILS glideslope becomes unreliable on approach, transitioning to the LOC approach requires the pilot to:

A. Note the higher LOC MDA, disregard the glideslope, and continue laterally to the MAP using timing/DME/fix

B. Continue to the ILS DA

C. Circle immediately

D. Descend below the MDA

25. The fundamental principle of LNAV and LOC approaches is that they:

A. Provide vertical guidance to a DA

B. Provide lateral-only guidance to an MDA from GPS (LNAV) or the localizer (LOC), each flown to the MAP with the descent managed by the pilot

C. Are precision approaches

D. Require a glideslope

ANSWER KEY & EXPLANATIONS — SESSION 63

1. A. Non-precision to MDA — Both LNAV and LOC approaches are non-precision approaches providing lateral guidance to an MDA.

2. B. GPS/RNAV course — An LNAV approach derives lateral guidance from the GPS/RNAV system tracking the coded final approach course.

3. D. ILS localizer — A LOC approach derives lateral guidance from the ILS localizer signal (without the glideslope).

4. B. Glideslope out — A LOC approach is commonly the non-precision fallback for an ILS when the glideslope is out of service or the aircraft is not glideslope-equipped.

5. B. Approach (LNAV) mode — The LNAV final course is tracked with the navigator in approach (LNAV) mode, with CDI sensitivity scaled for the final segment.

6. D. ±0.3 NM — In approach mode for an LNAV, the GPS CDI sensitivity scales to approximately ±0.3 NM.

7. A. Angular, ~4× VOR — The LOC course is angularly sensitive, tightening toward the runway (about four times a VOR's sensitivity).

8. B. LNAV linear, LOC angular — LNAV provides constant-width (linear) course guidance, while the LOC is angular (narrowing toward the runway).

9. D. MDA — Both LNAV and LOC approaches are flown to a minimum descent altitude.

10. D. At/above MDA to MAP — At the MDA, the pilot may continue at or above the MDA to the MAP, descending below only with the required visual references.

11. C. Pitch/power per profile — A LOC-only approach has no glideslope, so the descent is managed with pitch and power per the profile/step-downs to the MDA.

12. A. Advisory +V — "LNAV+V" indicates advisory vertical guidance; the controlling minimum is still the LNAV MDA.

13. C. Coded MAP waypoint — The MAP on an LNAV approach is typically a coded waypoint sequenced by the navigator.

14. B. Timing/DME/fix — The MAP on a LOC approach is typically defined by a timing from the FAF, a DME distance, or a fix.

15. C. Opposite side, no GS — A LOC back course provides lateral guidance from the localizer signal on the opposite side, without glideslope, requiring attention to reverse sensing.

16. A. HSI front-course — On a LOC, the pilot guards against reverse sensing on the back course by using an HSI set to the front-course heading.

17. A. GPS-only non-precision — The advantage of an LNAV approach where no ground-based approach exists is providing a non-precision approach using only GPS, independent of ground navaids.

18. C. Approach mode before FAF — The GPS must be in approach (LNAV) mode before the FAF because otherwise the lateral sensitivity and guidance are not at approach values, and descending on LNAV minimums would be improper.

19. D. Tune/identify LOC — A LOC approach is identified and tracked by tuning and identifying the localizer frequency and setting the front-course inbound on the CDI/HSI.

20. A. Track + not below MDA — Both approaches require tracking the lateral course precisely with wind correction and not descending below the MDA without the required visual references.

21. C. VDA for CDFA — A CDFA on an LNAV or LOC approach uses the published vertical descent angle (VDA) for a stabilized descent toward the MDA/decision point.

22. D. Source/sensitivity/MAP differ — Briefing LNAV vs. LOC matters because the guidance source, sensitivity behavior, and MAP definition differ, affecting how it is flown.

23. C. No protected glidepath — A LOC/LNAV approach has a higher MDA than an ILS DA because, without electronic vertical guidance, a higher minimum is required for obstacle protection without a protected glidepath.

24. A. Higher LOC MDA — Transitioning from the ILS to the LOC approach, the pilot notes the higher LOC MDA, disregards the glideslope, and continues laterally to the MAP using timing/DME/fix.

25. B. Lateral-only to MDA — LNAV and LOC approaches provide lateral-only guidance to an MDA from GPS (LNAV) or the localizer (LOC), each flown to the MAP with the descent managed by the pilot.