SESSION 61: PRECISION APPROACHES — LPV APPROACHES AND WAAS REQUIREMENTS

1. Before flying an LPV approach, the pilot must confirm the aircraft has:

A. A current chart only

B. WAAS capability and approval for LPV approaches

C. A second VOR receiver

D. A paired DME

2. The first step in setting up the LPV is to:

A. Set the transponder code

B. Tune the localizer

C. Begin the descent

D. Load and verify the correct RNAV (GPS) approach and the intended transition/initial fix

3. A WAAS LPV approach is flown to a:

A. Decision altitude (DA), like a precision approach

B. Minimum descent altitude (MDA)

C. Circling minimum only

D. Step-down altitude only

4. During the approach, the navigator should annunciate the active service level. For an LPV, the annunciation is typically:

A. LNAV

B. LP

C. Terminal

D. LPV (confirming the lowest line of minima is available)

5. If the navigator annunciates "LNAV" instead of "LPV" before the final segment, the pilot must:

A. Continue to the LPV DA anyway

B. Use the higher LNAV (MDA) minimums, not the LPV DA

C. Increase the CDI sensitivity

D. Execute a missed approach immediately

6. A WAAS LPV provides vertical guidance that is tracked:

A. By timing only

B. Using the localizer needle

C. With a DME arc

D. Like an ILS glideslope, descending to the DA

7. The pilot should verify the WAAS glidepath is active and the aircraft is on path before:

A. Descending from the FAF along the glidepath

B. Loading the approach

C. Tuning the navaid

D. Reaching the IAF

8. If WAAS vertical guidance is lost during the LPV approach, the navigator typically:

A. Provides an ILS glideslope

B. Pairs the DME

C. Raises the LPV minimums

D. Downgrades, requiring the pilot to use the LNAV (lateral-only) minimums or go missed

9. A WAAS receiver's integrity for the approach is provided by:

A. RAIM prediction only

B. The magnetic compass

C. The WAAS augmentation system itself

D. A second GPS

10. The lateral guidance on an LPV final becomes:

A. Less sensitive near the runway

B. Reverse-sensing

C. Angularly sensitive (like a localizer), tightening toward the runway

D. Constant-width to the runway

11. A pilot flying the LPV should keep the lateral and vertical needles centered using:

A. Large corrections

B. Small, smooth heading and pitch/power corrections

C. The autopilot exclusively

D. Bank only

12. Reaching the DA on the LPV without the required visual references, the pilot must:

A. Descend to the LNAV MDA

B. Execute the missed approach

C. Level off and continue

D. Circle

13. Reaching the DA with the runway environment in sight and a normal landing assured, the pilot may:

A. Continue the descent to land

B. Level off at the DA

C. Climb back to the FAF

D. Circle regardless

14. The advantage of an LPV over the LNAV line at the same runway is generally:

A. A wider final course

B. No database requirement

C. Lower minimums and vertical guidance

D. No missed approach

15. A current navigation database is required for the LPV because:

A. The receiver will not power on otherwise

B. WAAS needs a daily update

C. The autopilot depends on the date

D. The vertical and lateral path, glidepath angle, and waypoints come from the database

16. "LNAV+V" annunciated on an approach indicates:

A. Advisory vertical guidance on an LNAV approach; the controlling minimum is the LNAV MDA

B. An LPV approach

C. A precision approach

D. Vertical guidance to a DA

17. The danger of treating an "LNAV+V" advisory glidepath as an LPV is that the pilot might:

A. Capture a false glideslope

B. Reverse sense

C. Descend below the LNAV MDA on the advisory path without the required visual references

D. Lose the localizer

18. A pilot should brief the expected WAAS annunciation so as to:

A. Eliminate the need for a chart

B. Avoid using the autopilot

C. Confirm in flight that the available service level matches the minimums being flown

D. Set the cruise altitude

19. The LPV is described as offering near-ILS performance because:

A. Its lowest minimums can approach a 200-foot DA at suitable runways with vertical guidance

B. It uses a ground-based glideslope

C. It requires a localizer

D. It is a precision approach by definition

20. When the LPV is unavailable due to WAAS outage, a pilot planning the approach should:

A. Fly the LPV anyway

B. Plan for the LNAV (or other available) line of minima as the backup

C. Cancel IFR

D. Descend below MDA

21. Verifying "approach active" (vs. "armed") on the WAAS navigator confirms the unit has:

A. Lost integrity

B. Transitioned to the final approach guidance and sensitivity

C. Reverted to en route

D. Increased to ±5 NM

22. The pilot monitors the WAAS navigator during the approach to:

A. Set the alternate

B. Compute the fuel

C. Confirm correct sequencing, the active service level, and that the path matches the chart

D. Tune the localizer

23. A stabilized LPV approach, like an ILS, requires:

A. A steep dive at the DA

B. Idle power throughout

C. Large corrections near the runway

D. A constant configuration, airspeed, and descent rate on the glidepath

24. If, before the FAF, the navigator has not transitioned to the LPV approach mode, the pilot should:

A. Continue to the LPV DA as planned

B. Increase sensitivity manually

C. Not descend on the LPV glidepath/minimums, and use the appropriate available minima or go missed

D. Disconnect the autopilot and continue visually

25. The fundamental principle of flying LPV/WAAS approaches is that the pilot must:

A. Treat every RNAV approach as an LPV

B. Confirm WAAS/LPV capability and the active service level, fly the glidepath to the DA like an ILS, and respond correctly to any downgrade

C. Always use the LNAV MDA

D. Disregard the annunciations

ANSWER KEY & EXPLANATIONS – SESSION 61

1. B. WAAS/LPV approval — Before flying an LPV, the pilot must confirm WAAS capability and approval for LPV approaches.

2. D. Load/verify procedure — The first setup step is to load and verify the correct RNAV (GPS) approach and the intended transition/initial fix.

3. A. Decision altitude — A WAAS LPV is flown to a decision altitude, like a precision approach.

4. D. LPV annunciation — For an LPV, the navigator annunciates LPV, confirming the lowest line of minima is available.

5. B. Use LNAV minimums — If "LNAV" is annunciated instead of "LPV," the pilot must use the higher LNAV (MDA) minimums, not the LPV DA.

6. D. Like a glideslope — The WAAS LPV vertical guidance is tracked like an ILS glideslope, descending to the DA.

7. A. Before descending from FAF — The pilot verifies the WAAS glidepath is active and on path before descending from the FAF along the glidepath.

8. D. Downgrade — If WAAS vertical guidance is lost, the navigator downgrades, requiring the LNAV (lateral-only) minimums or a missed approach.

9. C. WAAS augmentation — A WAAS receiver's integrity for the approach is provided by the WAAS augmentation system itself.

10. C. Angularly sensitive — LPV lateral guidance is angularly sensitive (like a localizer), tightening toward the runway.

11. B. Small smooth corrections — The LPV needles are kept centered with small, smooth heading and pitch/power corrections.

12. B. Missed approach — Reaching the LPV DA without the required visual references, the pilot must execute the missed approach.

13. A. Continue to land — Reaching the DA with the runway in sight and a normal landing assured, the pilot may continue the descent to land.

14. C. Lower minimums/vertical — The LPV's advantage over LNAV is lower minimums and vertical guidance.

15. D. Path from database — A current database is required because the vertical and lateral path, glidepath angle, and waypoints come from the database.

16. A. Advisory +V on LNAV — "LNAV+V" indicates advisory vertical guidance on an LNAV approach; the controlling minimum is the LNAV MDA.

17. C. Descend below MDA — Treating an "LNAV+V" advisory path as an LPV risks descending below the LNAV MDA on the advisory path without the required visual references.

18. C. Confirm service level — Briefing the expected WAAS annunciation lets the pilot confirm in flight that the available service level matches the minimums being flown.

19. A. ~200-ft DA — The LPV offers near-ILS performance because its lowest minimums can approach a 200-foot DA at suitable runways with vertical guidance.

20. B. Plan LNAV backup — With a WAAS outage, the pilot plans for the LNAV (or other available) line of minima as the backup.

21. B. Final guidance/sensitivity — "Approach active" (vs. "armed") confirms the navigator has transitioned to the final approach guidance and sensitivity.

22. C. Confirm sequencing/level/path — The pilot monitors the navigator to confirm correct sequencing, the active service level, and that the path matches the chart.

23. D. Stable config/speed/rate — A stabilized LPV approach requires a constant configuration, airspeed, and descent rate on the glidepath.

24. C. Don't descend/use available minima — If the navigator has not transitioned to LPV approach mode before the FAF, the pilot does not descend on the LPV glidepath/minimums and uses the appropriate available minima or goes missed.

25. B. Confirm/fly/respond — The fundamental principle is to confirm WAAS/LPV capability and the active service level, fly the glidepath to the DA like an ILS, and respond correctly to any downgrade.