ACS AREA VI — INSTRUMENT APPROACH PROCEDURES

Sessions 57–72

Area VI is the heart of the instrument rating — the largest area in this study guide and the one the checkride dwells on longest, because it is where instrument flying does its essential work: bringing the aircraft safely down through the clouds to a runway it cannot see until the final moments. Everything earlier in the rating builds to this. The approach is where weather interpretation, aircraft systems, clearances, instrument control, and navigation all converge into a single precise, time-compressed sequence flown to exacting tolerances close to the ground.

These sixteen sessions — the most of any area — move methodically from understanding the approach to flying every type and contingency. Sessions 57 and 58 establish the foundations: reading and briefing the approach chart, and the distinction between precision and non-precision approaches. Sessions 59 through 66 cover the approach types in depth: the ILS and its components, glideslope intercept and the decision altitude, LPV and WAAS approaches, VOR approaches, LNAV and localizer-only approaches, step-down fixes with the MDA and visual descent point, RNAV (GPS) modes, and RF legs with their annunciations. Sessions 67 and 68 cover circling approaches — the protected areas and categories, then the technique and the circling missed approach. Sessions 69 through 71 cover the missed approach: its execution, the timing and fuel decisions at the missed approach point, and the §91.175 visual references required to descend below minimums and land. Session 72 closes the area — and the bulk of the practical flying content — with a mixed full-approach scenario.

Two themes run through everything here. First, the approach is briefed and flown to standards: altitudes, courses, and decision points are not approximate. Second, the decision at minimums — to land or to go missed — is the single most consequential judgment in instrument flying, governed precisely by §91.175 and made in seconds. Work these sessions with approach plates in front of you, fly each profile in your mind from the initial approach fix to the missed approach holding fix, and return to Chapter 11 wherever a minimum, a fix, or a required visual reference does not come with certainty.

SESSION 57: APPROACH FUNDAMENTALS — CHART ANATOMY AND FULL APPROACH BRIEFING

1. A standard instrument approach chart is organized into several functional sections. These generally include the briefing strip (heading), plan view, profile view, minimums section, and the:

A. En route chart legend

B. Weather depiction

C. Airport diagram/sketch

D. Cruise performance table

2. The briefing strip (heading) at the top of the approach chart contains:

A. The missed approach holding pattern only

B. Primary frequencies, the final approach course, and key altitudes for the approach

C. The airport taxiways

D. The en route airways

3. The plan view of an approach chart presents:

A. The vertical descent profile only

B. The minimums table

C. The runway layout only

D. An overhead (top-down) depiction of the approach: fixes, courses, navaids, and the missed approach track

4. The profile view of an approach chart depicts:

A. The side view of the approach: the descent, step-down altitudes, the FAF, and the missed approach climb

B. The overhead navaid layout

C. The minimums for each category

D. The taxiway diagram

5. The minimums section of the chart lists:

A. The lowest authorized altitudes/visibilities for each approach type and aircraft category

B. The en route MEAs

C. The departure procedure

D. The cruise altitudes

6. The "MSA" (Minimum Safe Altitude) circle on the plan view provides:

A. The decision altitude

B. Emergency obstacle-clearance altitudes within a defined radius of a reference point, for orientation/emergency use

C. The final approach course

D. The circling minimums

7. The final approach fix (FAF) on a non-precision approach is depicted in the profile view by a:

A. Lightning bolt

B. Filled triangle

C. Maltese cross (cross symbol)

D. Circle with a dot

8. On a precision approach, the point where the glideslope intercept begins the final descent (the "FAF equivalent") is marked by the:

A. Maltese cross

B. Glideslope intercept (lightning bolt) symbol at the published intercept altitude

C. Missed approach point

D. Threshold

9. A thorough approach briefing should be conducted:

A. After passing the FAF

B. Only if requested by ATC

C. During the landing flare

D. Before beginning the approach, while workload is low (typically during descent/arrival)

10. The approach briefing should cover, among other items, the approach name, frequencies, courses, altitudes, minimums, and the:

A. Cruise fuel burn

B. En route winds aloft

C. Departure airport weather

D. Missed approach procedure

11. Verifying the correct approach is loaded and briefed includes confirming the:

A. Approach name/runway matches the one cleared and the navaid is tuned and identified

B. Cruising altitude

C. Departure frequency

D. Alternate airport fuel

12. The "decision altitude" (DA) or "decision height" (DH) is found in the minimums section for:

A. Circling approaches only

B. Non-precision approaches only

C. The en route segment

D. Precision/vertically-guided approaches (the altitude at which a go/no-go decision is made)

13. The "MDA" (Minimum Descent Altitude) is the lowest altitude for:

A. The en route segment

B. A non-precision approach, to which the aircraft may descend until the visual references or MAP

C. A precision approach

D. The departure

14. The aircraft approach category (A, B, C, D) used to select the correct minimums is based on:

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

B. The aircraft's gross weight

C. The engine horsepower

D. The wingspan

15. The missed approach procedure is described in:

A. The minimums section only

B. The airport diagram

C. The en route chart

D. Text in the briefing strip and depicted in the profile/plan views

16. The frequencies listed in the briefing strip typically include:

A. The approach navaid, ATIS/AWOS, and the relevant ATC frequencies

B. The en route center frequencies only

C. The departure ground frequency only

D. The destination FBO phone number

17. The "circling minimums" in the minimums section apply when the pilot:

A. Flies the straight-in final only

B. Executes the missed approach

C. Maneuvers visually to land on a runway not aligned with the final approach course

D. Holds at the FAF

18. A "step-down fix" shown in the profile view allows the aircraft to:

A. Begin the missed approach

B. Hold

C. Descend to a lower altitude after passing a defined point, when obstacle clearance permits

D. Circle to land

19. Confirming the chart's currency (effective date) before use matters because:

A. The aircraft will not start otherwise

B. Procedures, frequencies, or minimums may have changed in a newer revision

C. The MSA changes daily

D. The category changes with currency

20. The "TDZE" (Touchdown Zone Elevation) and airport elevation on the chart are used to:

A. Set the cruise altitude

B. Compute the height above touchdown/airport for the minimums and the visual descent

C. Determine the alternate

D. Set the transponder code

21. A complete briefing reduces workload during the approach by:

A. Eliminating the need to monitor instruments

B. Replacing the missed approach

C. Removing the need for a current chart

D. Establishing the plan, key numbers, and contingencies in advance so the pilot can focus on flying

22. The "HAT" (Height Above Touchdown) and "HAA" (Height Above Airport) values relate respectively to:

A. The en route and departure segments

B. Straight-in (HAT) and circling (HAA) minimums

C. The MSA and the DA

D. The FAF and the MAP

23. A pilot should brief the missed approach before reaching the FAF because:

A. It is required by ATC at the FAF

B. The missed approach is rarely needed

C. At the missed approach point there is little time to read it; the plan must already be known

D. The chart is unavailable after the FAF

24. The plan view's depiction of terrain and obstacles helps the pilot:

A. Maintain situational awareness of high terrain and obstructions near the approach

B. Set the cruise altitude

C. Determine the fuel reserve

D. Select the alternate

25. The fundamental purpose of approach chart anatomy and the full briefing is to:

A. Replace the need for navigation equipment

B. Eliminate the missed approach

C. Ensure the pilot understands and is prepared to fly the entire approach — courses, altitudes, minimums, and contingencies — before commencing it

D. Set the en route altitude

ANSWER KEY & EXPLANATIONS — SESSION 57

1. C. Airport diagram — The chart sections include the briefing strip, plan view, profile view, minimums section, and the airport diagram/sketch.

2. B. Frequencies/course/altitudes — The briefing strip contains primary frequencies, the final approach course, and key altitudes.

3. D. Overhead depiction — The plan view is an overhead (top-down) depiction of the approach: fixes, courses, navaids, and the missed approach track.

4. A. Side view/descent — The profile view depicts the side view of the approach: the descent, step-down altitudes, the FAF, and the missed approach climb.

5. A. Lowest authorized minimums — The minimums section lists the lowest authorized altitudes/visibilities for each approach type and aircraft category.

6. B. Emergency obstacle clearance — The MSA circle provides emergency obstacle-clearance altitudes within a defined radius of a reference point, for orientation/emergency use.

7. C. Maltese cross — The FAF on a non-precision approach is depicted by a Maltese cross.

8. B. Lightning bolt — The glideslope intercept on a precision approach is marked by the lightning bolt symbol at the published intercept altitude.

9. D. Before the approach — A thorough briefing is conducted before beginning the approach, while workload is low.

10. D. Missed approach — The briefing covers the approach name, frequencies, courses, altitudes, minimums, and the missed approach procedure.

11. A. Name/navaid match — Verifying the loaded approach includes confirming the name/runway matches the clearance and the navaid is tuned and identified.

12. D. Precision/vertically-guided — The DA/DH is found for precision/vertically-guided approaches (the go/no-go decision altitude).

13. B. Non-precision MDA — The MDA is the lowest altitude for a non-precision approach, to which the aircraft may descend until the visual references or MAP.

14. A. 1.3 VSO / approach speed — The aircraft approach category is based on 1.3 times the stall speed in landing configuration (the approach/VREF speed).

15. D. Briefing strip text + views — The missed approach is described in text in the briefing strip and depicted in the profile/plan views.

16. A. Navaid/ATIS/ATC — The briefing-strip frequencies include the approach navaid, ATIS/AWOS, and the relevant ATC frequencies.

17. C. Visual maneuver to land — Circling minimums apply when the pilot maneuvers visually to land on a runway not aligned with the final approach course.

18. C. Descend after a point — A step-down fix allows descending to a lower altitude after passing a defined point, when obstacle clearance permits.

19. B. Procedures may change — Confirming chart currency matters because procedures, frequencies, or minimums may have changed in a newer revision.

20. B. HAT/visual descent — TDZE and airport elevation are used to compute the height above touchdown/airport for the minimums and the visual descent.

21. D. Plan in advance — A complete briefing reduces workload by establishing the plan, key numbers, and contingencies in advance so the pilot can focus on flying.

22. B. Straight-in/circling — HAT relates to straight-in minimums and HAA to circling minimums.

23. C. No time at the MAP — The missed approach is briefed before the FAF because at the MAP there is little time to read it; the plan must already be known.

24. A. Terrain awareness — The plan view's terrain/obstacle depiction helps maintain situational awareness of high terrain and obstructions near the approach.

25. C. Prepared for the whole approach — The purpose of chart anatomy and the briefing is to ensure the pilot understands and is prepared to fly the entire approach before commencing it.