SESSION 36: HOLDING PROCEDURES — ENTRY TYPES: DIRECT, TEARDROP, AND PARALLEL

1. The three recognized holding pattern entry types are:

A. Standard, non-standard, and DME

B. Inbound, outbound, and crosswind

C. Direct, teardrop, and parallel

D. Left, right, and reverse

2. The entry sectors are determined by dividing the area around the fix relative to the holding course, with the direct entry sector covering approximately:

A. 180 degrees of the heading approaches relative to the inbound course

B. 70 degrees only

C. 110 degrees only

D. 360 degrees

3. For a standard (right-turn) holding pattern, the parallel entry sector spans approximately:

A. The 180-degree direct sector

B. 70 degrees on the holding side of the inbound course

C. 110 degrees opposite the holding side

D. The entire fix area

4. For a standard pattern, the teardrop entry sector spans approximately:

A. 180 degrees

B. 110 degrees on the holding side

C. 70 degrees on the holding side

D. 360 degrees

5. In a direct entry, upon reaching the fix the pilot:

A. Turns to the outbound heading in the direction of the holding turns and flies the pattern

B. Turns away from the holding side first

C. Flies past the fix and returns

D. Holds wings level over the fix

6. In a parallel entry, upon reaching the fix the pilot:

A. Turns immediately toward the holding side

B. Turns to parallel the inbound course outbound on the non-holding side, then turns back to intercept inbound

C. Flies directly outbound on the holding side

D. Makes a 360-degree turn over the fix

7. In a teardrop entry, upon reaching the fix the pilot:

A. Parallels the inbound course on the non-holding side

B. Turns to a heading approximately 30 degrees offset toward the holding side, flies outbound, then turns to intercept inbound

C. Turns immediately to the inbound course

D. Holds over the fix without maneuvering

8. A useful technique for visualizing the entry is to:

A. Always use a direct entry regardless of heading

B. Time the outbound leg only

C. Mentally superimpose the holding pattern on the heading indicator and see which sector the aircraft approaches from

D. Ask ATC which entry to use

9. The recommended entries exist to:

A. Increase fuel burn

B. Lengthen the time in the hold

C. Keep the aircraft within the protected airspace during the transition into the hold

D. Replace the need for an EFC time

10. The FAA considers the recommended entry procedures to be:

A. Recommended; other entries are acceptable if the aircraft remains within protected airspace

B. Mandatory with no flexibility

C. Optional and rarely used

D. Required only above 14,000 feet

11. For a standard pattern with an inbound course of 360 (holding north, right turns), an aircraft arriving on a heading of 270 would use which entry?

A. Teardrop

B. Direct

C. Parallel only

D. Parallel

12. For the same standard pattern (inbound 360, right turns), an aircraft arriving on a heading of 180 (from the north) would use which entry?

A. Teardrop

B. Direct

C. Parallel

D. No entry needed

13. For the same standard pattern (inbound 360, right turns), an aircraft arriving on a heading of 060 would use which entry?

A. Parallel

B. Direct

C. Teardrop only after a 360

D. Teardrop

14. The parallel entry is flown on which side of the inbound course?

A. The holding side

B. Directly over the inbound course

C. The non-holding side

D. Both sides alternately

15. When determining the entry, the angle is measured between the aircraft's:

A. Inbound heading to the fix and the holding course

B. Groundspeed and airspeed

C. Altitude and the MHA

D. Outbound time and inbound time

16. A "direct entry" is the most common because:

A. It is required by ATC

B. It applies only at high altitude

C. It uses left turns

D. It covers the largest sector (about 180 degrees) of arrival headings

17. After completing any entry, the pilot transitions to:

A. The standard racetrack holding pattern, timing the inbound leg

B. A continuous 360-degree orbit

C. A DME arc

D. The missed approach

18. In a parallel entry, the initial outbound turn is made:

A. Toward the holding side

B. To a teardrop heading

C. By flying a 360 over the fix

D. Away from the holding side (paralleling the inbound course outbound)

19. The 70-degree/110-degree split of the non-direct sectors corresponds to:

A. The inbound and outbound leg times

B. The maximum holding airspeeds

C. The MHA and MAA

D. The parallel (70°) and teardrop (110°) sectors for a standard pattern

20. A non-standard (left-turn) holding pattern mirrors the entry sectors, meaning the:

A. Sectors are flipped to the opposite side compared to a standard pattern

B. Entries are eliminated

C. Direct sector disappears

D. Only parallel entries are used

21. The purpose of choosing the correct entry is fundamentally to:

A. Ensure the aircraft stays within protected airspace while establishing the hold

B. Minimize the inbound leg time

C. Avoid the need to time the legs

D. Eliminate wind correction

22. A pilot uncertain of the exact entry sector boundary should:

A. Always fly a parallel entry

B. Choose a reasonable entry that keeps the aircraft within protected airspace; minor variations are acceptable

C. Exit the hold and request vectors

D. Fly a 360-degree turn over the fix first

23. A teardrop entry's outbound heading is offset from the holding course by approximately:

A. 90 degrees

B. 70 degrees

C. 110 degrees

D. 30 degrees

24. When entering a hold, the pilot should begin slowing to holding speed:

A. Only after completing the entry

B. After the first inbound leg

C. Within about 3 minutes of reaching the holding fix

D. Only when ATC instructs

25. The fundamental skill the entry procedures support is:

A. Transitioning from the arrival course into the holding pattern while remaining in protected airspace

B. Reducing fuel consumption to a minimum

C. Eliminating the need for an EFC time

D. Replacing the inbound leg timing

ANSWER KEY & EXPLANATIONS — SESSION 36

1. C. Direct/teardrop/parallel — The three entry types are direct, teardrop, and parallel.

2. A. ~180° direct — The direct entry sector covers approximately 180 degrees of the heading approaches relative to the inbound course.

3. B. 70° holding side — For a standard pattern, the parallel entry sector spans about 70 degrees on the holding side of the inbound course.

4. B. 110° holding side — The teardrop entry sector spans about 110 degrees on the holding side.

5. A. Turn to outbound — In a direct entry, upon reaching the fix the pilot turns to the outbound heading in the direction of the holding turns and flies the pattern.

6. B. Parallel non-holding side — In a parallel entry, the pilot turns to parallel the inbound course outbound on the non-holding side, then turns back to intercept inbound.

7. B. 30° offset toward holding side — In a teardrop entry, the pilot turns ~30 degrees offset toward the holding side, flies outbound, then turns to intercept inbound.

8. C. Superimpose on HI — A useful technique is to mentally superimpose the holding pattern on the heading indicator to see which sector the aircraft approaches from.

9. C. Stay in protected airspace — The entries keep the aircraft within protected airspace during the transition into the hold.

10. A. Recommended — The FAA considers the entry procedures recommended; other entries are acceptable if the aircraft stays within protected airspace.

11. D. Parallel — For inbound 360 with right turns, an aircraft arriving on heading 270 falls in the parallel sector. (The holding side is east of the 360 inbound course; heading 270 approaches from the west/non-holding side → parallel.)

12. B. Direct — Arriving on heading 180 (from the north, flying south) falls within the ~180° direct sector.

13. D. Teardrop — Arriving on heading 060 falls in the teardrop sector on the holding side.

14. C. Non-holding side — The parallel entry is flown on the non-holding side of the inbound course.

15. A. Inbound heading vs. holding course — The entry angle is measured between the aircraft's inbound heading to the fix and the holding course.

16. D. Largest sector — The direct entry is most common because it covers the largest sector (about 180 degrees) of arrival headings.

17. A. Racetrack/time inbound — After any entry, the pilot transitions to the standard racetrack pattern, timing the inbound leg.

18. D. Away from holding side — In a parallel entry, the initial outbound turn is made away from the holding side, paralleling the inbound course outbound.

19. D. Parallel 70°/teardrop 110° — The 70°/110° split corresponds to the parallel (70°) and teardrop (110°) sectors for a standard pattern.

20. A. Sectors flipped — A non-standard (left-turn) pattern flips the entry sectors to the opposite side compared to a standard pattern.

21. A. Stay protected — The purpose of choosing the correct entry is to keep the aircraft within protected airspace while establishing the hold.

22. B. Reasonable entry, minor variations OK — If uncertain of the boundary, choose a reasonable entry that keeps the aircraft within protected airspace; minor variations are acceptable.

23. D. ~30 degrees — A teardrop entry's outbound heading is offset from the holding course by approximately 30 degrees.

24. C. Within ~3 minutes — The pilot should begin slowing to holding speed within about 3 minutes of reaching the holding fix.

25. A. Transition into hold safely — The entries support transitioning from the arrival course into the holding pattern while remaining in protected airspace.