SESSION 70: MISSED APPROACH — HOLDING AT THE MAP AND FUEL CONSIDERATIONS

1. After executing a missed approach, the pilot's key decision is whether to:

A. Land immediately

B. Attempt the approach again, try a different approach, or divert to the alternate

C. Descend below the MDA

D. Continue circling

2. The decision among the missed-approach options should be based primarily on:

A. The cruise altitude

B. The departure weather

C. The transponder code

D. The fuel remaining, the weather trend, and the likelihood of a successful subsequent approach

3. A pilot who has just missed in weather at minimums should consider that a second identical attempt:

A. Will always succeed

B. Is required

C. Lowers the minimums

D. May yield the same result unless conditions or the approach change

4. The most important resource governing how many attempts a pilot can make is:

A. The number of approaches charted

B. The fuel remaining and the required reserves

C. The transponder

D. The number of runways

5. A pilot must always preserve enough fuel to:

A. Reach the alternate (if required) and land with the required reserves

B. Make unlimited attempts

C. Hold indefinitely

D. Return to the departure airport

6. Under IFR fuel rules (§91.167), the fuel planning included enough to fly to the destination, then to the alternate (if required), and then:

A. For 45 minutes at normal cruise

B. For 30 minutes

C. For 10 minutes

D. To the departure airport

7. As the missed-approach decision is made, the pilot should reassess the actual fuel against:

A. The planned cruise burn only

B. The departure fuel

C. The fuel needed to reach the alternate plus reserves, with a margin

D. The taxi fuel

8. A pilot low on fuel who has missed at the destination should:

A. Continue attempting the destination

B. Hold and wait

C. Divert to the nearest suitable airport with better conditions while fuel permits

D. Descend below the MDA

9. If the weather at the destination is improving (e.g., a passing shower), the pilot might reasonably:

A. Divert immediately regardless

B. Hold briefly (fuel permitting) and re-attempt as conditions improve

C. Descend below minimums

D. Cancel IFR

10. Holding to await improvement consumes fuel, so the pilot must:

A. Hold indefinitely

B. Track the fuel and set a "bingo" fuel/time at which a divert is committed

C. Disregard fuel

D. Hold at minimum altitude

11. A "bingo fuel" is:

A. A predetermined fuel state at which the pilot commits to diverting to ensure a safe landing with reserves

B. The total fuel

C. The taxi fuel

D. The reserve only

12. The alternate airport chosen during planning should, at the decision time, still:

A. Be the departure airport

B. Have forecast/actual weather at or above its alternate minimums and be reachable with reserves

C. Be VFR only

D. Be the nearest airport regardless of weather

13. If the filed alternate's weather has deteriorated, the pilot should:

A. Continue to it anyway

B. Land below minimums

C. Hold

D. Identify another suitable airport with acceptable weather and adequate fuel to reach it

14. A diversion decision is best made:

A. After the fuel is exhausted

B. Only when ATC suggests it

C. Early enough to reach the diversion airport with comfortable reserves, not at the last moment

D. Below the MDA

15. The pilot should communicate the missed approach and intentions to ATC so that:

A. The approach is cancelled

B. The minimums are lowered

C. The transponder resets

D. ATC can provide vectors, sequencing, or assistance for the next approach or divert

16. A fuel emergency exists when:

A. The aircraft is at the alternate

B. The pilot cannot reach a landing with the required reserves and should declare to ATC for priority

C. The fuel is at planned reserve

D. The aircraft is holding

17. A pilot uncertain whether fuel is sufficient should:

A. Continue and hope

B. Hold longer

C. Treat the situation conservatively, advise ATC, and divert while options remain

D. Descend below minimums

18. A second approach attempt is more likely to succeed if the pilot:

A. Flies it identically

B. Descends below minimums

C. Corrects any errors from the first attempt or uses a different/lower-minimums approach if available

D. Increases speed

19. Requesting a different approach (e.g., an ILS instead of a missed LNAV) at the destination may help because:

A. It is faster

B. It uses less fuel

C. It avoids the missed approach

D. A precision approach may have lower minimums, improving the chance of acquiring the runway

20. The decision to divert rather than re-attempt should weigh:

A. Only the weather

B. Only the fuel

C. The combination of fuel, weather trend, approach options, pilot fatigue, and the safety margin

D. Only ATC's preference

21. The pilot in command's authority and responsibility regarding the divert/continue decision is:

A. Final — the PIC is responsible for the safe operation and may deviate as needed in an emergency

B. Subordinate to ATC

C. Limited to the planned route

D. Determined by the alternate

22. Holding fuel/endurance is computed from the:

A. Taxi fuel

B. Total fuel only

C. Cruise burn only

D. Fuel remaining and the holding/loiter fuel flow, giving the available holding time

23. If a pilot has fuel for one approach plus the divert with reserves, the prudent choice when that approach is missed is to:

A. Divert to the alternate as planned

B. Attempt again

C. Hold

D. Descend below minimums

24. Declaring "minimum fuel" to ATC advises that:

A. The pilot cannot accept undue delay without declaring an emergency, though it is an advisory, not an emergency declaration

B. The aircraft has crashed

C. The fuel is full

D. The aircraft is VFR

25. The fundamental principle of decisions at the missed approach point is that the pilot must:

A. Always attempt the approach again

B. Continuously manage fuel, weather, and approach options, and commit to a diversion early enough to land safely with adequate reserves rather than exhausting options at low fuel

C. Always divert immediately

D. Disregard the alternate

ANSWER KEY & EXPLANATIONS – SESSION 70

1. B. Re-attempt/different/divert — After a missed approach, the key decision is whether to attempt again, try a different approach, or divert to the alternate.

2. D. Fuel/weather/likelihood — The decision is based primarily on the fuel remaining, the weather trend, and the likelihood of a successful subsequent approach.

3. D. Same result likely — A second identical attempt may yield the same result unless conditions or the approach change.

4. B. Fuel and reserves — The most important resource governing how many attempts is the fuel remaining and the required reserves.

5. A. Reach alternate + reserves — The pilot must preserve enough fuel to reach the alternate (if required) and land with the required reserves.

6. A. 45 minutes — Under §91.167, IFR fuel includes destination, then alternate (if required), then 45 minutes at normal cruise.

7. C. Alternate + reserves + margin — At the decision, the pilot reassesses actual fuel against the fuel needed to reach the alternate plus reserves, with a margin.

8. C. Divert nearest suitable — A pilot low on fuel who has missed should divert to the nearest suitable airport with better conditions while fuel permits.

9. B. Hold briefly/re-attempt — If the destination weather is improving, the pilot might reasonably hold briefly (fuel permitting) and re-attempt as conditions improve.

10. B. Set bingo fuel/time — Holding consumes fuel, so the pilot tracks fuel and sets a "bingo" fuel/time at which a divert is committed.

11. A. Commit-to-divert fuel — A bingo fuel is a predetermined fuel state at which the pilot commits to diverting to ensure a safe landing with reserves.

12. B. At/above alt minimums + reachable — The alternate should still have weather at or above its alternate minimums and be reachable with reserves.

13. D. Find another suitable — If the filed alternate's weather has deteriorated, the pilot identifies another suitable airport with acceptable weather and adequate fuel.

14. C. Early with reserves — A diversion decision is best made early enough to reach the diversion airport with comfortable reserves.

15. D. ATC assistance — Communicating the missed approach and intentions lets ATC provide vectors, sequencing, or assistance for the next approach or divert.

16. B. Cannot reach with reserves — A fuel emergency exists when the pilot cannot reach a landing with the required reserves and should declare to ATC for priority.

17. C. Conservative/divert early — A pilot uncertain of fuel should treat the situation conservatively, advise ATC, and divert while options remain.

18. C. Correct errors/different approach — A second attempt is more likely to succeed if the pilot corrects errors from the first attempt or uses a different/lower-minimums approach.

19. D. Lower minimums — A precision approach may have lower minimums, improving the chance of acquiring the runway.

20. C. Weigh all factors — The divert decision weighs the combination of fuel, weather trend, approach options, pilot fatigue, and the safety margin.

21. A. PIC final authority — The PIC is responsible for the safe operation and may deviate as needed in an emergency.

22. D. Fuel + loiter flow — Holding endurance is computed from the fuel remaining and the holding/loiter fuel flow, giving the available holding time.

23. A. Divert as planned — With fuel for one approach plus the divert with reserves, the prudent choice when that approach is missed is to divert to the alternate as planned.

24. A. Advisory, not emergency — "Minimum fuel" advises that the pilot cannot accept undue delay without declaring an emergency, though it is an advisory, not an emergency declaration.

25. B. Manage and commit early — The fundamental principle is to continuously manage fuel, weather, and approach options, and commit to a diversion early enough to land safely with adequate reserves.