SESSION 78: EMERGENCIES — MULTI-ENGINE IFR: OEI PROCEDURES AND APPROACH

---

1. If the engine loses power in IMC, the pilot's immediate priorities are to:

A. Talk to ATC first

B. Configure for landing

C. Squawk 7700 first

D. Establish best glide speed, maintain aircraft control, and begin troubleshooting (fuel, mixture, carb heat, ignition)

2. Establishing best glide speed after a power loss is critical because it:

A. Provides the maximum gliding distance, buying time and range to a landing site

B. Cools the engine

C. Charges the battery

D. Increases the descent rate

3. Troubleshooting an engine failure typically follows a flow such as:

A. Fuel (selector/quantity/pump), mixture, carburetor heat, magnetos/ignition, and primer

B. Pitot heat and static source

C. Vacuum and gyros

D. Transponder and radios

4. An engine failure in IMC is especially serious because:

A. The radios fail

B. The vacuum fails

C. The autopilot disengages

D. The pilot cannot see the terrain to select and judge a forced-landing site

5. During an engine-out descent in IMC, the pilot should:

A. Climb to the MEA

B. Declare an emergency, advise ATC, and request vectors to the nearest airport or guidance toward the lowest terrain/obstacle-free area

C. Squawk 7600

D. Continue the flight plan

6. Squawking 7700 during the emergency:

A. Alerts ATC and facilities to the emergency

B. Indicates lost communications

C. Indicates a hijacking

D. Indicates VFR

7. Breaking out of the clouds during an engine-out descent, the pilot should:

A. Climb back into the clouds

B. Squawk 7600

C. Restart by diving

D. Identify the best available landing site and execute a forced landing

8. An alternator (or generator) failure means the aircraft is operating on:

A. The vacuum system

B. The engine only

C. Battery power alone, with a limited and depleting electrical reserve

D. Unlimited electrical power

9. The first indication of an alternator failure is often:

A. A discharging ammeter (or a low-voltage warning light)

B. An engine roughness

C. A vacuum drop

D. A pitot-static error

10. Upon an alternator failure, the pilot should attempt to:

A. Turn off the master

B. Land immediately regardless

C. Reset the alternator (per the checklist — e.g., cycle the alternator/field switch) and, if unsuccessful, shed electrical load

D. Increase RPM to recharge

11. "Load shedding" means:

A. Reducing aircraft weight

B. Dumping fuel

C. Turning off nonessential electrical equipment to conserve the remaining battery for essential systems

D. Lowering the gear

12. On battery power alone, the pilot should prioritize electrical power for:

A. The cabin lights

B. Essential items — at minimum one radio/navigation source and any required electric flight instruments — and plan to land soon

C. The pitot heat only

D. The landing light

13. A total electrical failure in IMC in a typical light aircraft would result in the loss of:

A. The engine

B. The vacuum-driven instruments

C. Electrically powered avionics, lights, and electric instruments (radios, transponder, electric gyros), though the engine and vacuum instruments may keep running

D. The control surfaces

14. With a total electrical failure, the pilot can still typically rely on the:

A. Transponder

B. Radios

C. Electric attitude indicator

D. Vacuum-driven attitude and heading indicators (engine-driven) and the pitot-static and magnetic compass

15. Communicating after an electrical failure that disables the radios requires the pilot to:

A. Continue transmitting

B. Climb above the clouds

C. Land at the departure airport

D. Follow lost-communications procedures (squawk 7600 if the transponder works, fly §91.185)

16. An in-flight electrical fire (smoke/burning smell) calls for:

A. Turning off the master switch / electrical power to remove the ignition source, using the checklist, and being prepared to land

B. Continuing the flight

C. Increasing electrical load

D. Ignoring it if minor

17. After shutting off electrical power for a fire, the pilot in IMC faces the challenge of:

A. Engine failure

B. Flying with reduced or no electrical instruments/comms, relying on the vacuum and pitot-static instruments and lost-comm procedures

C. Vacuum failure

D. A frozen pitot

18. Ventilating the cabin during a smoke/fire event:

A. May be necessary to clear smoke, but must be balanced against feeding an open flame with airflow

B. Is never done

C. Charges the battery

D. Restarts the engine

19. A partial power loss (rough running engine) in IMC should prompt the pilot to:

A. Shut the engine down

B. Ignore it

C. Apply carburetor heat, check mixture/fuel/ignition, manage the available power, and divert to the nearest suitable airport

D. Climb to the MEA

20. Carburetor heat is applied for a suspected carb-ice-induced power loss because it:

A. Cools the engine

B. Melts the induction ice and restores power

C. Increases the RPM directly

D. Charges the alternator

21. A pilot's decision-making during any IMC systems failure should follow:

A. Communicate, configure, aviate

B. Aviate (control), navigate (toward a safe landing), communicate (declare/request help), and manage the systems

C. Navigate, communicate, aviate

D. Configure, communicate, navigate

22. Declaring an emergency in any of these failures:

A. Is discouraged

B. Cancels the IFR clearance

C. Requires squawking 7500

D. Gives the pilot priority handling and access to ATC assistance and resources

23. A pilot who maintains the discipline to fly the aircraft first during a systems failure:

A. Risks losing communication

B. Prevents a manageable failure from becoming a loss-of-control accident

C. Should ignore the checklist

D. Should descend immediately

24. The best defense against systems failures in IMC is:

A. Flying faster

B. Thorough preflight inspection, system knowledge, fuel management, and not flying a marginal aircraft into IMC

C. Climbing above the weather

D. Relying on the autopilot

25. The fundamental principle of handling engine, electrical, and systems failures in IMC is that the pilot must:

A. Troubleshoot before flying the aircraft

B. Descend below the clouds immediately in all cases

C. Maintain aircraft control first, work the appropriate checklist/troubleshooting, conserve or restore critical systems, declare an emergency and use ATC, and navigate toward the safest possible landing

D. Continue the planned flight

ANSWER KEY & EXPLANATIONS — SESSION 78

1. D. Glide/control/troubleshoot — After a power loss in IMC, the immediate priorities are best glide speed, aircraft control, and troubleshooting (fuel, mixture, carb heat, ignition).

2. A. Maximum glide distance — Best glide speed provides the maximum gliding distance, buying time and range to a landing site.

3. A. Fuel/mixture/carb heat/ignition — Engine-failure troubleshooting follows a flow such as fuel, mixture, carburetor heat, magnetos/ignition, and primer.

4. D. Can't see terrain — An engine failure in IMC is especially serious because the pilot cannot see the terrain to select and judge a forced-landing site.

5. B. Declare/request vectors — During an engine-out descent in IMC, the pilot declares an emergency, advises ATC, and requests vectors to the nearest airport or guidance toward the lowest terrain.

6. A. Alerts ATC — Squawking 7700 alerts ATC and facilities to the emergency.

7. D. Forced landing — Breaking out of the clouds, the pilot identifies the best available landing site and executes a forced landing.

8. C. Battery alone — An alternator failure means the aircraft is operating on battery power alone, with a limited and depleting reserve.

9. A. Discharging ammeter — The first indication of an alternator failure is often a discharging ammeter (or a low-voltage warning light).

10. C. Reset/shed load — On an alternator failure, the pilot attempts to reset the alternator per the checklist and, if unsuccessful, sheds electrical load.

11. C. Turn off nonessential — Load shedding means turning off nonessential electrical equipment to conserve the remaining battery for essential systems.

12. B. Essential items — On battery power, the pilot prioritizes essential items (at minimum one radio/nav source and any required electric instruments) and plans to land soon.

13. C. Electrical avionics/instruments — A total electrical failure results in the loss of electrically powered avionics, lights, and electric instruments, though the engine and vacuum instruments may keep running.

14. D. Vacuum/pitot-static/compass — With a total electrical failure, the pilot can still rely on the vacuum-driven attitude and heading indicators (engine-driven), the pitot-static instruments, and the magnetic compass.

15. D. Lost-comm procedures — An electrical failure that disables the radios requires following lost-communications procedures (squawk 7600 if the transponder works, fly §91.185).

16. A. Master off/checklist — An electrical fire calls for turning off the master / electrical power to remove the ignition source, using the checklist, and being prepared to land.

17. B. Reduced instruments/comms — After shutting off electrical power for a fire, the pilot in IMC must fly with reduced or no electrical instruments/comms, relying on the vacuum and pitot-static instruments and lost-comm procedures.

18. A. Ventilate carefully — Ventilating the cabin may be necessary to clear smoke but must be balanced against feeding an open flame with airflow.

19. C. Carb heat/manage/divert — A partial power loss should prompt applying carburetor heat, checking mixture/fuel/ignition, managing the available power, and diverting to the nearest suitable airport.

20. B. Melts induction ice — Carburetor heat melts the induction ice and restores power.

21. B. Aviate/navigate/communicate/manage — Decision-making during an IMC systems failure follows aviate (control), navigate (toward a safe landing), communicate (declare/request help), and manage the systems.

22. D. Priority/assistance — Declaring an emergency gives the pilot priority handling and access to ATC assistance and resources.

23. B. Prevents loss of control — Flying the aircraft first during a systems failure prevents a manageable failure from becoming a loss-of-control accident.

24. B. Preflight/knowledge/planning — The best defense against systems failures in IMC is thorough preflight inspection, system knowledge, fuel management, and not flying a marginal aircraft into IMC.

25. C. Control/checklist/conserve/declare/navigate — The fundamental principle is to maintain aircraft control first, work the appropriate checklist, conserve or restore critical systems, declare an emergency and use ATC, and navigate toward the safest possible landing.