

PRIVATE PILOT GROUND SCHOOL

MODULE 1-16 — DIVERSION DECISIONS (THE REAL PICKLE)

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FACTS TO REMEMBER

KNOW THESE COLD

- Diversion triggers: weather closing ahead or behind, fuel below the planned line, a sick passenger or pilot, a rough engine or system doubt, a closing airport, or lost situational awareness.

Source: PHAK ch. 16; FAA-H-8083-2

- The diversion decision is cheapest early: every mile flown toward deteriorating conditions spends fuel, daylight, and options — the module rule is divert while it is still an inconvenience.

Source: FAA-H-8083-2; PHAK ch. 2

- Alternate selection weighs weather at the alternate, runway length and surface, fuel to reach it with reserve intact, terrain en route, services, and familiarity.

Source: PHAK ch. 16

- Nearest is not always best: a strip two minutes closer loses to a longer runway with fuel, phone, and weather reporting — unless the emergency says otherwise.

Source: PHAK ch. 16; AFH ch. 18

- Personal minimums are the diversion tripwires: when a pre-set number (ceiling, visibility, fuel, daylight) is crossed, the divert decision was already made on the ground.

Source: FAA-H-8083-2

- Rough-and-ready diversion math: turn toward the alternate first, then refine — estimate the course with the chart's compass rose or a pencil line, distance with the sectional's scale or thumb-widths, time from groundspeed.

Source: PHAK ch. 16; AFH ch. 9

- Deviating from a flight plan or an ATC instruction is allowed when the situation requires it — tell ATC what you need; amend, don't silently wander.

Source: 14 CFR 91.3; AIM 4-4-1

- ATC, flight following, and (Phase 2) Flight Service are diversion resources: position, vectors, weather ahead, and airport information are one call away.

Source: AIM 4-1-16; PHAK ch. 16

- EFB and GPS "nearest" functions are legitimate diversion tools — used as a cross-check on the pilot's own picture, not a replacement for it.

Source: PHAK ch. 16; AC 90-109A

- Heads-down replanning is the diversion's collision trap: eyes out on a schedule, and the reroute worked in pieces — aviate, navigate, communicate holds rank.

Source: AC 90-48; PHAK ch. 2

- Fly the airplane through the turn first: new heading, altitude appropriate to the new course and terrain, THEN the math, THEN the radio call.

Source: AFH ch. 9; PHAK ch. 16

- The fuel reserve is protected, not spent: a diversion that lands with the reserve intact was flown correctly; a destination reached by burning into the reserve was a gamble that happened to pay.

Source: PHAK ch. 16; FAA-H-8083-2

- On a solo, the diversion brief is pre-loaded: before takeoff the student can name the alternate for each leg and the condition that sends them there — nobody is aboard to catch the hesitation.

Source: FAA-H-8083-2; North Aero practice

- External pressure is the diversion's real opponent — the meeting, the rental return time, the passenger's schedule; the counter is announcing the alternate as part of the plan so diverting is keeping a promise, not breaking one.

Source: FAA-H-8083-2; PHAK ch. 2

GOING DEEPER

- Tell ATC "minimum fuel" when reaching destination with less than reserve becomes possible — it is an advisory, not an emergency; declare the emergency when priority handling is actually needed.

Source: AIM 5-5 (minimum fuel); Pilot/Controller Glossary

THE REGULATIONS BEHIND THIS MODULE

14 CFR 91.3 – Responsibility and authority of the pilot in command

The pilot in command is directly responsible for, and the final authority as to, the operation of the aircraft, and in an in-flight emergency requiring immediate action may deviate from any rule of Part 91 to the extent required to meet that emergency.

Where it goes deeper: This module, in the deviation Leg.