

PRIVATE PILOT GROUND SCHOOL

MODULE 1-1 — PAVE AND ADM

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MNEMONICS

DECIDE — Detect, Estimate, Choose, Identify, Do, Evaluate

Six steps for working a problem once one exists: detect that something changed, estimate what it means for the flight, choose a desired outcome, identify actions that get there, do the best one, then evaluate whether it worked — and go around the loop again if it did not.

5P — Plan, Plane, Pilot, Passengers, Programming

The single-pilot resource check, run at set decision points in a flight (before takeoff, cruise checks, before descent, before approach): is the Plan still good, is the Plane still good, is the Pilot still good, are the Passengers still good, is the Programming set for what comes next?

IMSAFE — Illness, Medication, Stress, Alcohol, Fatigue, Emotion (or Eating)

The personal preflight checklist — the deep look at the P in PAVE. Run it before every flight, not only when feeling sick. Any letter that fails is a no-go about the pilot, no matter how good the airplane and the weather are.

Two of the letters carry hard regulatory numbers. Alcohol (14 CFR 91.17): no acting as a crewmember within 8 hours of consuming any alcohol, while under the influence, or with a blood or breath alcohol concentration of 0.04 or greater — and a hangover is impairment even when the clock and the number both pass. Medication (14 CFR 61.53): flying is prohibited while taking any medication or treatment that leaves you unable to meet your medical certificate's requirements. For over-the-counter drugs the FAA's guidance is concrete: if the label warns about drowsiness or operating machinery, wait at least five maximal dosing intervals after the last dose — and when in doubt, ask an AME. The other letters — Illness, Stress, Fatigue, Emotion — have no numbers, which is exactly why they demand the most honesty.

PAVE — Pilot, Aircraft, enVironment, External pressures

The preflight risk checklist. Before every flight, check each of the four categories honestly: the Pilot flying, the Aircraft as it is equipped and loaded today, the enVironment the flight passes through, and the External pressures pushing on the decision. In flight, the same four categories drive the continue/divert decision.

RAIIM — Resignation, Anti-authority, Impulsivity, Invulnerability, Macho

The handle for the five hazardous attitudes. The FAA names the five but gives you no way to hold them; RAIIM is how we carry them — say the word, recover the five, then pair each with its antidote. Starting with Resignation is deliberate: it is the quietest of the five and the easiest

to miss in yourself.

3P — Perceive, Process, Perform

The continuous in-flight risk loop: perceive the hazard, process what its risk is on this flight, perform the mitigation — then start perceiving again. It never finishes; it runs from engine start to shutdown.

FACTS TO REMEMBER

KNOW THESE COLD

- PAVE names the four risk categories a pilot checks before every flight: Pilot, Aircraft, enVironment, External pressures.

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

- Aeronautical decision making (ADM) is a systematic approach to finding hazards, judging their risk, and choosing the safest course of action.

Source: PHAK ch. 2

- Single-pilot resource management (SRM) means using everything available to a pilot flying alone: the airplane's equipment, ATC, charts, passengers, and the pilot's own planning.

Source: PHAK ch. 2

- Crew resource management (CRM) is the same resource discipline applied when more than one crewmember shares the flight deck.

Source: PHAK ch. 2

- IMSAFE is the personal preflight checklist: Illness, Medication, Stress, Alcohol, Fatigue, Emotion (some FAA material uses Eating for the E — accept either).

Source: FAA-H-8083-2

- The IMSAFE check is a go/no-go decision about the pilot, made before every flight, not only when feeling sick.

Source: FAA-H-8083-2

- The five hazardous attitudes, in RAIIM order, are resignation, anti-authority, impulsivity, invulnerability, and macho.

Source: PHAK ch. 2

- The antidote for resignation ("what's the use") is: I'm not helpless — I can make a difference.

Source: PHAK ch. 2

- The antidote for anti-authority ("don't tell me") is: follow the rules — they are usually right.

Source: PHAK ch. 2

- The antidote for impulsivity ("do it quickly") is: not so fast — think first.

Source: PHAK ch. 2

- The antidote for invulnerability ("it won't happen to me") is: it could happen to me.

Source: PHAK ch. 2

- The antidote for macho ("I can do it") is: taking chances is foolish.

Source: PHAK ch. 2

- Recognizing a hazardous thought and saying its antidote out loud is the FAA's taught method for breaking the attitude's hold.

Source: PHAK ch. 2

- The DECIDE model names six steps for working a problem: Detect, Estimate, Choose, Identify, Do, Evaluate.

Source: PHAK ch. 2

- The 3P model runs a continuous loop in flight: Perceive the hazard, Process its risk, Perform the mitigation — then perceive again.

Source: FAA-H-8083-2A ch. 8

- A risk assessment matrix rates each risk by two axes — likelihood and severity — and the combination decides whether the flight changes or cancels.

Source: FAA-H-8083-2A ch. 4

- Personal minimums are set on the ground, in calm conditions, and are stricter than the regulations; they are never renegotiated in the air.

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

- External pressures — get-there-itis, a waiting passenger, sunk rental money — are the PAVE category pilots are least honest about, and the standard mitigation is an out planned before takeoff (a firm alternate, a told-in-advance backup plan).

Source: FAA-H-8083-2

- The enVironment check covers weather, terrain, route, obstructions, airports, and airspace for the specific flight planned.

Source: PHAK ch. 2

- The Aircraft check asks whether this airplane, as equipped and loaded today, can do this mission — not whether it is merely legal.

Source: FAA-H-8083-2

- Confirmation bias is hunting only for information that supports the decision already made, and it is countered by actively looking for disconfirming evidence.

Source: PHAK ch. 2

- Expectation bias is hearing or seeing what you expected instead of what actually happened — the classic case is reading back the clearance you expected rather than the one issued.

Source: PHAK ch. 2

- Task priority in any abnormal situation is aviate, navigate, communicate — in that order.

Source: AFH ch. 18; PHAK ch. 2

- Situational awareness is an accurate picture of what is happening now and what happens next; distraction and fixation are its two main killers.

Source: PHAK ch. 2

- The go/no-go decision is not made once: it is re-made continuously in flight as continue/divert, against the same PAVE categories.

Source: FAA-H-8083-2

GOING DEEPER

- A hazard is a condition or object; risk is how bad and how likely the harm from that hazard is on this flight. They are not the same thing.

Source: FAA-H-8083-2A ch. 3

- The 5P variant of SRM checks Plan, Plane, Pilot, Passengers, and Programming at set decision points in the flight.

Source: PHAK ch. 2 (the 5 Ps; dropped from FAA-H-8083-2A)

- Automation and glass displays are resources to manage, not a substitute for flying: the pilot states what the automation is doing and reverts to hand-flying the moment it surprises them.

Source: AC 90-109A; PHAK ch. 2

THE REGULATIONS BEHIND THIS MODULE

14 CFR 91.103 – Preflight action

Each pilot in command shall, before beginning a flight, become familiar with ALL available information concerning that flight — for every flight, runway lengths and takeoff/landing distance data; for any flight away from the vicinity of an airport, also weather reports and forecasts, fuel requirements, alternatives if the flight cannot be completed, and known ATC delays.

Where it goes deeper: Module 2-1 (cross-country planning) works this rule line by line.

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. Every go/no-go and continue/divert decision in this module is that responsibility in action.

Where it goes deeper: Module 1-2 covers the full rule, including emergency deviation authority.

14 CFR 91.17 – Alcohol or drugs

No acting as a crewmember within 8 hours of consuming any alcohol, while under the influence, while using any drug that affects your faculties contrary to safety, or with a blood/breath alcohol concentration of 0.04 or greater.

Where it goes deeper: Module 1-8 (aeromedical factors) covers the physiology behind the numbers.

14 CFR 61.53 – Prohibition on operations during medical deficiency

No flying with a known medical condition, or on medication or treatment, that would make you unable to meet your medical certificate's requirements — the I, M, and S of IMSAFE written into regulation.

Where it goes deeper: Module 1-3 (medical certificates) covers it in full, including how it works under BasicMed.