

PRIVATE PILOT GROUND SCHOOL

MODULE 4-1 — CHECKRIDE WEEK 1: TASKS A AND H

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MNEMONICS

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.

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

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

Source: PHAK ch. 2

- 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 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

- Before any flight, the pilot in command must become familiar with all available information concerning that flight — the regulation PAVE puts into practice.

Source: 14 CFR 91.103

- 14 CFR Part 61 governs pilot certification: certificates, ratings, privileges, currency.

Source: 14 CFR 61

- 14 CFR Part 91 governs how aircraft are operated: general operating and flight rules.

Source: 14 CFR 91

- The FARs are law — binding on every pilot; violating one can cost a certificate.

Source: 14 CFR 61; 14 CFR 91

- The pilot in command is directly responsible for, and the final authority as to, the operation of the aircraft.

Source: 14 CFR 91.3(a)

- In an in-flight emergency requiring immediate action, the PIC may deviate from any rule of Part 91 to the extent required to meet that emergency.

Source: 14 CFR 91.3(b)

- Student pilot certificates issued today carry no expiration date; they remain valid unless surrendered, suspended, or revoked.

Source: 14 CFR 61.19(a)

- The private certificate requires at least 40 hours of flight time, including at least 20 hours of flight training and 10 hours of solo flight in the required areas of operation.

Source: 14 CFR 61.109(a)

- Medical certificates come in three classes — first (airline transport privileges), second (commercial), third (private, recreational, student).

Source: 14 CFR 61.23(a); PHAK ch. 17

- Private and student pilot privileges require at least a third-class medical — or a qualifying alternative such as

BasicMed.

Source: 14 CFR 61.23(a)(3), (c)

- For a pilot under 40 on the exam date, a third-class medical lasts through the end of the 60th month after the month of the exam.

Source: 14 CFR 61.23(d)

- For a pilot 40 or older on the exam date, a third-class medical lasts through the end of the 24th month after the month of the exam.

Source: 14 CFR 61.23(d)

- A pilot may not fly during any known medical deficiency: whoever knows, or has reason to know, of a condition that would make them unable to operate safely is grounded by rule, whatever their medical certificate says.

Source: 14 CFR 61.53(a)

- Temporary disqualifications include everyday things: a head cold that blocks the ears, a new medication, an ongoing dental anesthetic, acute stress or fatigue — the IMSAFE letters made regulatory.

Source: 14 CFR 61.53; AIM 8-1-1

- BasicMed qualification: have held any FAA medical after July 14, 2006, hold a valid U.S. driver's license, complete the online medical course every 24 calendar months, and get the CMEC physician exam every 48 months.

Source: 14 CFR 61.23(c)(3); 14 CFR 68.3, 68.5

- To exercise pilot privileges you must have your pilot certificate in physical possession or readily accessible in the aircraft.

Source: 14 CFR 61.3(a)(1)

- You must also carry a photo ID (driver's license, government or military ID, passport, or other form the Administrator accepts) and, when one is required, your medical certificate — same carriage standard.

Source: 14 CFR 61.3(a)(2), (c)

- A flight review is required within the preceding 24 calendar months to act as PIC, and its minimum is 1 hour of flight training plus 1 hour of ground training.

Source: 14 CFR 61.56(a), (c)

- To carry other people, a pilot needs three takeoffs and landings within the preceding 90 days as sole manipulator, in the same category, class, and type (if required).

Source: 14 CFR 61.57(a)

- Night currency requires three takeoffs and three landings to a full stop, made 1 hour after sunset to 1 hour before sunrise, within the preceding 90 days.

Source: 14 CFR 61.57(b)

- A private pilot may not act as PIC for compensation or hire, and may not pay less than a pro rata share of fuel, oil, airport expenditures, or rental fees when sharing costs with passengers.

Source: 14 CFR 61.113(a), (c)

- Currency is the legal minimum; proficiency is actual skill — they are different measurements, and the rules only check the first.

Source: AC 61-98E; PHAK ch. 2

- Meeting 61.57 currency does not by itself make a pilot safe for a given flight — the personal minimums check carries that decision.

Source: AC 61-98E; PHAK ch. 2

- Before flying an unfamiliar make and model, get a checkout that covers its POH numbers, systems, and handling differences — regulations require no endorsement for most transitions, so the discipline is on the pilot.

Source: AC 90-109A; FAA-H-8083-3

- Spatial disorientation is the body's motion sensors disagreeing with reality; without a visible horizon, the inner ear cannot be trusted at all.

Source: PHAK ch. 17; AIM 8-1-5

- The body senses attitude three ways — vision, inner-ear vestibular organs, and muscle/seat pressure — and in clouds or darkness the last two lie.

Source: PHAK ch. 17

- The leans: after a slow, unnoticed bank is corrected, the body swears the airplane is now banked the other way — the most common disorientation illusion.

Source: PHAK ch. 17; AIM 8-1-5

- The somatogravic illusion: rapid acceleration feels like pitching up (and deceleration like pitching down) — the killer version is pushing over after a night or IMC takeoff.

Source: PHAK ch. 17; AIM 8-1-5

- Recovery from disorientation is procedural, not sensory: get on the instruments, believe them, and fly them until the conflict passes.

Source: PHAK ch. 17; IFH ch. 6

- A runway that is narrower or wider than usual, or that slopes, moves the visual approach: narrow or upsloping runways make you feel high (and fly a dangerously low approach).

Source: PHAK ch. 17; AIM 8-1-5

- Hypoxia is oxygen starvation of the brain; its cruelty is that the first symptom is often euphoria and impaired judgment — the victim feels fine.

Source: PHAK ch. 17; AIM 8-1-2

- Hypoxia response: oxygen on if available, descend, and treat night vision as already degraded above roughly 5,000 ft cabin altitude.

Source: PHAK ch. 17; AIM 8-1-2

- Hyperventilation — over-breathing from stress — produces symptoms that mimic hypoxia (tingling, lightheadedness); the fix is consciously slowing the breathing.

Source: PHAK ch. 17; AIM 8-1-3

- Ear and sinus blocks come from pressure changes with a cold or congestion; they hurt worst on descent, are cleared by yawning, swallowing, or Valsalva — and the real answer is not flying congested.

Source: PHAK ch. 17; AIM 8-1-2

- Motion sickness: eyes on the horizon, cool air, gentle maneuvers, and land if it progresses — airsick pilots fly badly, and airsick passengers distract pilots.

Source: PHAK ch. 17; AIM 8-1-9

- Carbon monoxide reaches the cabin through a cracked exhaust and the heater shroud; it is odorless, and its headache/drowsiness builds slowly.

Source: PHAK ch. 17; AIM 8-1-4

- CO response: heat off, vents and windows open, land as soon as practicable, oxygen if available.

Source: AIM 8-1-4; PHAK ch. 17

- Stress: acute stress narrows attention and chronic stress erodes it; the margin is built on the ground — the IMSAFE S is a real gate, not a formality.

Source: PHAK ch. 17

- Fatigue comes in acute (one bad night — fixed by sleep) and chronic (weeks of deficit — not fixed by one night) forms, and it degrades judgment before it degrades stick skills.

Source: PHAK ch. 17

- Dehydration and skipped meals degrade performance at altitude faster than on the ground — carry water, eat before flying.

Source: PHAK ch. 17

- Hypothermia is a survival risk after any off-field landing even in mild seasons — which is why clothing for the terrain, not the cabin, is part of preflight (gear list lives in 1-9).

Source: PHAK ch. 17

- After scuba diving, wait 12 hours before flying up to 8,000 ft cabin altitude (24 hours if the diving required decompression stops), and 24 hours before flying above 8,000 ft.

Source: AIM 8-1-2

- The alcohol rule: no flying within 8 hours of any alcohol, with 0.04 blood alcohol or any degree of impairment grounding you regardless of the clock.

Source: 14 CFR 91.17(a)

- Medications rule of thumb: no flying on any drug whose effects or underlying condition are disqualifying; for over-the-counter drugs, when in doubt, ask the AME — sedating antihistamines are the classic trap.

Source: 14 CFR 61.53; AIM 8-1-1

- Inadvertent VFR into IMC is escaped by the numbers: believe the instruments, level the wings, begin a coordinated 180-degree level turn back to visual conditions, and climb only for terrain.

Source: AFH ch. 17; PHAK ch. 17

- VFR-into-IMC is among GA's most lethal scenarios; the survival move is made BEFORE entry — turning around while the ground is still visible.

Source: PHAK ch. 17; FAA-H-8083-2

- Lost in deteriorating conditions, the play is CONFESS early: tell ATC, accept help, declare an emergency if needed — assistance exists and using it is airmanship, not failure.

Source: AIM 6-1-1; PHAK ch. 17

- ATC radar can give vectors, position, and terrain-safe headings to a VFR pilot in trouble; flight following makes that help one transmission away.

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

GOING DEEPER

- The four hypoxia types: hypoxic (altitude — not enough O₂ pressure), hypemic (blood can't carry it — CO, anemia), stagnant (blood isn't moving — G-loads), histotoxic (cells can't use it — alcohol, cyanide).

Source: PHAK ch. 17

- Eight hours is a floor, not a clearance: the AIM's guidance is 12 to 24 hours bottle-to-throttle, and a hangover is impairment even at 0.00.

Source: AIM 8-1-1; 14 CFR 91.17(a)(3)