

Appendix A — Flight Evaluation Concepts (Book 5)

This story is fiction.

The checkride is not. The aviation is real.

Everything Tamias experiences in this book is based on real pilot practical testing standards—organized, simplified, and explained in a way a serious student can understand.

Book 1 was about beginning.

Book 2 was about discipline.

Book 3 was about responsibility.

Book 4 was about operation.

Book 5 is about judgment under scrutiny.

Book 5 is where Tamias discovers something critical:

Preparation is necessary.

It is not sufficient.

This appendix collects the major evaluation concepts from Book 5 in one place, so you can review them the way real student pilots do:

Objectively.

Without sympathy.

Without drama.

The Practical Test (What Is Actually Being Evaluated)

A practical test is not a performance.

It is not a show.

It is not a memory contest.

It is not a personality competition.

It evaluates:

- Decision-making
- Risk management
- Aircraft control within tolerances
- Systems knowledge
- Situational awareness
- Judgment under pressure

An examiner is not asking:

“Can you fly?”

They are asking:

“Can you think while flying?”

The Oral Exam (Knowledge Under Pressure)

Before the engine starts, the evaluation begins.

The oral portion tests whether knowledge is organized, not merely memorized.

When asked, “Required equipment for day VFR,” Tamias responded with both accuracy and structure:

Fuel gauges.

Airspeed indicator.

Seat belts.

Tachometer.

Magnetic compass.

Oil pressure gauge.

Oil temperature gauge.

Strobes (Anti-collision lights).

ELT.

He summarized it with a memory device:

FAST MOOSE

The point is not the acronym.

The point is organization under pressure.

Additional questions:

Topics typically include:

- Airworthiness documents
- Currency requirements
- Weather interpretation
- Airspace rules
- Aircraft systems
- Performance calculations

- Medical qualification
- Risk assessment

The key lesson:

Confidence must be structured.

Fast answers are acceptable.

Casual answers are not.

The examiner listens for:

- Clarity
- Logic
- Correct prioritization
- Awareness of limitations

Passing the written exam does not matter here.

Understanding matters.

Tolerances (Precision Is Defined)

The practical test has measurable standards.

For example:

- Maintain altitude within ± 100 feet
- Maintain heading within ± 10 degrees
- Maintain airspeed within ± 10 knots

These numbers are not arbitrary.

They demonstrate:

- Control
- Discipline
- Consistency

A pilot who is “close enough” is not yet safe.

Precision under calm conditions predicts performance under stress.

The Examiner's Silence (Psychological Pressure)

Examiners rarely praise.

They rarely criticize mid-maneuver.

They often say only:

- “Continue.”
- “Maintain.”
- “Recover.”

Silence is part of the test.

It forces:

- Self-monitoring
- Internal correction
- Ownership

If you need reassurance, you are not ready.

The Simulated Emergency That Was Not Simulated

In Book 5, the engine failure leads to an actual landing.

This is rare. In fact, in the real world, it would be incredibly illegal.

But it teaches a vital truth:

Emergency procedures are not academic.

When power goes to idle:

- Best glide must be immediate
- Landing site selection must be realistic
- Configuration must be disciplined
- Commitment must be decisive

The difference between simulation and reality is small.

The consequences are not. Professor Flugbatt makes Tamias land in a parking lot because he is afraid that Tamias is treating everything like a school subject. But the real world – is – real.

Landing Off-Airport (Commitment)

Choosing a landing site requires:

- Wind awareness
- Surface evaluation
- Obstacle analysis
- Energy management
- Escape planning

The parking lot in Book 5 represents something important:

When you choose, you must commit.

Hesitation wastes altitude.

Doubt wastes options.

A committed landing is safer than a half-hearted one.

Overconfidence (The Subtle Risk)

Overconfidence is not loud.

It sounds like:

- “It is simple.”
- “I’ve done this before.”
- “This is easy.”

The examiner in Book 5 recognizes something:

Tamias is technically proficient.

But he is beginning to fly automatically.

Automatic flying can drift into complacency.

The forced landing resets perspective.

Humility sharpens attention.

Engine-Out Energy Management (Altitude as Currency)

Altitude is stored time.

When the engine fails:

- Do not rush configuration
- Do not dump flaps early
- Preserve glide
- Keep options open

Every foot of altitude is a decision.

When *Tamias* lands in the lot, he understands:

Energy mismanaged becomes consequence.

The “White One”

A “white one” means:

A clean pass.

No unsatisfactory areas.

No retests required.

It does not mean perfection.

It means:

Within standards.

Within judgment.

Within safety.

Passing does not certify brilliance.

It certifies readiness for continued learning.

The License (What It Actually Is)

In this world, the pilot certificate is issued under our authority.

It functions the same way.

It grants:

- Legal authority to act as Pilot in Command
- Responsibility for passengers
- Accountability for decisions

It does not grant:

- Experience
- Immunity
- Mastery

A license confirms competence.

It does not confirm wisdom.

Medical Certification (Fitness to Operate)

Before flying independently, a pilot must meet medical standards.

These evaluate:

- Vision
- Hearing
- Blood pressure
- Neurological stability
- Mental clarity
- Medication safety

Flying is not just mechanical skill.

It is human performance.

A pilot must be physically and cognitively fit.

In the United States, the FAA issues **three classes of medical certificates**, each tied to the privileges a pilot intends to exercise:

- **First-Class Medical** – Required for **Airline Transport Pilots (ATP)** acting as pilot-in-command in scheduled airline operations. It has the **most stringent standards** and the **shortest validity period** for ATP privileges (typically 6–12 months depending on age).
- **Second-Class Medical** – Required for pilots exercising **commercial privileges**, such as flight instructors being paid, charter pilots, crop dusters, or other for-hire operations. The medical standards are slightly less strict than First-Class and remain valid for commercial privileges for 12 months. Air traffic controllers are also required to maintain this level of medical class.

- **Third-Class Medical** – Required for **private pilots and student pilots** who are not flying for compensation. It has the least stringent medical standards and typically remains valid for 24 or 60 months depending on the pilot's age.

In addition, many private pilots today may qualify under **BasicMed**, an alternative to the traditional Third-Class, which allows certain non-commercial flying with a state-licensed physician exam and online training instead of an FAA medical certificate.

“It Is Not Theory”

The parking-lot landing is the emotional center of Book 5.

When Professor Flugbatt does not bring the engine back to power...

- The asphalt becomes real
- The quiet becomes real
- The responsibility becomes real

Flight training often feels controlled.

Evaluation removes that feeling.

You discover what you actually know.

What Tamias Really Learns in Book 5

Book 5 is not about passing a test.

It is about discovering:

- Precision under observation
- Calm under silence
- Commitment under uncertainty
- Humility after competence

Tamias learns:

Preparation builds skill.

Evaluation reveals character.

He receives a license.

But what he truly receives is perspective.

The sky is not smaller now.

It is larger.

And from this point forward, he flies without supervision.

Which means—

He flies with full responsibility.

And that is where real training begins.

David I Schoen

Notes and Ideas

Appendix B Glossary

ADM (Aeronautical Decision Making) — A structured way pilots learn to make safe choices. ADM means using facts, training, and judgment instead of emotion or wishful thinking.

Aileron — A hinged control surface on the outer part of each wing. Ailerons move in opposite directions to roll the airplane left or right.

Airman Certificate (Pilot Certificate) — The official document granting legal authority to act as Pilot in Command. It confirms that the holder met required knowledge and skill standards. It does not guarantee experience or wisdom.

Airman Certification Standards (ACS) — The official FAA document defining what a pilot must know and demonstrate to pass a practical test. It combines knowledge, risk management, and flight skill into measurable standards.

Airworthiness Certificate — An official document that proves an aircraft is legally allowed to fly. It must be carried in the airplane.

AIRMET — A weather advisory for pilots about conditions that may be dangerous, such as turbulence, icing, or low visibility.

Altimeter — An instrument that shows how high the airplane is above sea level, based on air pressure.

Alternate (Airport) — A backup airport a pilot plans to use if the original destination becomes unsafe or unavailable.

Angle of Attack (AOA) — The angle between the wing and the airflow. If the angle becomes too steep, the wing stalls.

Applicant — The pilot being evaluated during a practical test. During a checkride, the student is referred to as the applicant.

Approved — In aviation, “approved” means allowed by official rules and authorities. It does not mean “someone thinks it’s fine.”

ATC (Air Traffic Control) — The system of controllers and procedures that helps airplanes stay organized and separated, especially near busy airports.

Attitude — The airplane’s position compared to the horizon (nose up, nose down, wings level, banked, etc.).

Attitude Indicator — An instrument that shows the airplane’s attitude using a small artificial horizon.

Avionics — The electronic equipment in an airplane, especially radios, navigation tools, and transponders.

Axis (Axes) — The three invisible lines an airplane rotates around: pitch, roll, and yaw.

Balance (Center of Gravity) — The location inside the airplane where its weight is centered. If balance is outside limits, the airplane may be unsafe.

Baggage Compartment — A storage space in the airplane, usually behind the seats.

Base Leg — The part of the traffic pattern flown perpendicular to the runway, just before turning

onto final.

BasicMed — An alternative to a traditional FAA medical certificate for certain private pilots. It requires a state-licensed physician exam and periodic training but does not allow commercial privileges.

Beacon — A flashing red light on the airplane used to warn others that the engine is starting or running.

Brake(s) — Controls that stop the airplane while on the ground.

Briefing — A structured review before a flight or maneuver explaining what will happen and what to do if something goes wrong.

Buffet — A shaking felt as the wing approaches a stall.

Cabin — The inside of the airplane where the pilot and passengers sit.

Ceiling — The height of the lowest cloud layer covering most of the sky.

Center of Gravity (CG) — The exact point where the airplane balances. It must remain within safe limits.

Certificate Action — The formal outcome of a practical test. It may be issuance (pass), discontinuance, or notice of disapproval.

CFI (Certified Flight Instructor) — A pilot trained and certified to teach flying.

CFII (Certified Flight Instructor Instrument) — A pilot trained and certified to teach flying and the requirements for the Instrument Rating

Checkride (Practical Test) — The final flight evaluation with a Designated Pilot Examiner to determine whether a pilot meets certification standards.

Checklist — A written list of required steps. Checklists exist because memory is unreliable under pressure.

Circuit Breaker — A safety device that stops electrical flow if there is a problem.

Climb — Flying upward to gain altitude.

Cockpit — The front part of the airplane where the pilot controls the aircraft.

Commercial Pilot — A certificate level allowing a pilot to be paid for flying, provided required training and experience standards are met.

Control Surface — A movable part (aileron, elevator, rudder) that changes airflow to control the airplane.

Control Wheel Lock — A device that locks flight controls when parked. It must be removed before flight.

Correct — In aviation, “correct” means the proper, approved method — not “close enough.”

Cowling — The outer covering around the engine.

Crab — Pointing the airplane’s nose into the wind to maintain correct ground track.

Critical Angle of Attack — The angle where the wing stops producing enough lift and stalls.

Cross-Country Flight — A flight from one airport to another. Required in real pilot training.

Crosswind — Wind blowing across the runway.

CTAF (Common Traffic Advisory Frequency) — The radio frequency used at uncontrolled

airports for pilot coordination.

Dead Reckoning — Navigation using heading, time, speed, and wind estimates to determine position.

Density Altitude — A value combining altitude, temperature, and pressure. High density altitude reduces performance.

Designated Pilot Examiner (DPE) — An experienced pilot authorized by the FAA to conduct practical tests and issue pilot certificates.

Discontinuance — A temporary stop to a practical test due to weather, mechanical issues, or other external factors. It is not a failure.

Downwind Leg — The traffic pattern leg flown parallel to the runway in the opposite direction of landing.

Drag — Air resistance that slows the airplane.

Drift — Sideways movement caused by wind pushing the airplane off course.

Elevator — A hinged surface on the horizontal tail controlling pitch.

Emergency — Any situation where safety may be threatened and immediate action is required.

Empennage — The tail assembly of the airplane.

Engine — The machine that provides power and turns the propeller.

Engine Instruments — Gauges showing engine health (oil pressure, RPM, etc.).

Estimated Time En Route (ETE) — Calculated time to reach a destination.

FAA — Federal Aviation Administration, the U.S. aviation regulatory authority.

FAA Approved — Officially accepted under aviation rules.

F A S T M O O S E — An acronym used to remember daytime VFR requirements. **F**uel gauge. **A**irspeed indicator. **S**eat belts. **T**achometer. **M**agnetic compass. **O**il pressure gauge. **O**il temperature gauge. **S**trobes (anti-collision lights), **E**LT.

Final Approach (Final) — The last straight part of the traffic pattern aligned with the runway.

First-Class Medical — The highest level of FAA medical certificate, required for Airline Transport Pilots flying for airlines. It has the strictest standards and shortest validity for ATP privileges.

Flap — A hinged surface on the inner trailing edge of the wing used during takeoff and landing.

Flight Controls — Yoke, rudder pedals, trim, and other controls used to fly the airplane.

Flight Instruments — Instruments that show altitude, speed, attitude, and other flight data.

Flow — A memorized cockpit setup pattern verified by checklist.

Forecast — A prediction of future weather.

Front — A boundary between two air masses that often causes changing weather.

Fuel Burn — The rate at which the engine consumes fuel, usually gallons per hour.

Fuel Reserves — Required extra fuel carried for safety.

Fuselage — The main body of the airplane.

Gauge — An instrument that shows a measurement.

Go-Around — Abandoning a landing attempt and climbing away to try again.

Ground Effect — Reduced drag when flying close to the ground, which can cause floating during

landing.

Ground School — Ground-based instruction in weather, regulations, and systems.

Groundspeed — The airplane's actual speed over the ground.

Heading — The direction the airplane's nose is pointing.

Heading Indicator — An instrument showing heading using a gyro.

Horizon — The line where sky and ground appear to meet.

Ignition — The system that starts and powers the engine.

Instrument Panel — The area containing flight and engine instruments.

Judgment — Choosing the safe action even when risk feels tempting.

Landing Gear — The wheels supporting the airplane on the ground.

Lift — The force created by the wings that holds the airplane up.

Load Factor — The force placed on the wings during turns or pull-ups.

Logbook — The official record of flight time and endorsements.

Magneto — A device that produces spark for the engine.

Master Switch — The main electrical power switch.

Medical Certificate (FAA Medical) — An official document confirming a pilot meets required health standards to fly.

METAR — A coded weather report describing current conditions.

Mixture — A control adjusting the fuel-to-air ratio in the engine.

Moment — A number calculated by multiplying weight by distance from a reference point, used to determine CG.

Navigation Log (Nav Log) — A written planning sheet calculating headings, time, and fuel.

Notice of Disapproval (“Pink Slip”) — The document issued when an applicant does not meet required standards on a practical test. Retraining and retesting are required.

Oral Exam (Oral Portion) — The ground-based portion of a practical test where the examiner evaluates knowledge, judgment, and risk management before flight.

Personal Minimums — A pilot's personal safety limits stricter than legal minimums.

Pilot — The person controlling the airplane.

Pilot's Operating Handbook (POH) — The official manual containing limitations and procedures.

Pitot Tube — A tube measuring air pressure to determine airspeed.

Preflight — Inspection of the airplane before flight.

Propeller — The spinning blades that create thrust.

Practical Test Standards (PTS) — The former FAA evaluation system used before the ACS. Some pilots still refer to checkride requirements using this older term.

Rotation — The moment the pilot lifts the nose during takeoff.

RPM — Revolutions per minute; engine speed measurement.

Runup — Engine test performed before takeoff.

Runway — The strip used for takeoff and landing.

Second-Class Medical — A medical certificate required for pilots exercising commercial privileges, such as being paid to fly.

SIGMET — A severe weather advisory for dangerous conditions.

Solo Endorsement — Written instructor authorization allowing solo flight.

Stall — Loss of lift caused by excessive angle of attack.

Stall Recovery — Steps used to return to normal flight after a stall.

TAF — A coded airport weather forecast.

Tactical Pause — A moment to stop rushing and think clearly.

Third-Class Medical — A medical certificate required for private pilots and student pilots who are not flying for compensation.

Throttle — The control adjusting engine power.

Trim — A control that reduces the need for constant pressure on the yoke.

True Course — Intended direction of flight measured on a chart.

Turbulence — Rough, uneven air.

VFR (Visual Flight Rules) — Flying by visual reference in clear weather.

Vertical Speed Indicator (VSI) — Instrument showing rate of climb or descent.

Weight — The total load carried by the airplane.

Weight & Balance — The calculation of total weight and its distribution. The airplane must be below maximum weight and within CG limits to fly safely.

White One — Informal pilot slang meaning a clean practical test pass with no unsatisfactory areas and no retest required.

Wind Correction Angle — Adjustment to heading to compensate for wind drift.

Wing — The structure producing lift.

Yaw — The nose moving left or right.

Yoke — The primary control used to manage pitch and roll.

Cessna 172R Gauge Cluster

Primary instruments:



Airspeed indicator

Attitude Indicator

Altimeter



Turn Coordinator

Heading Indicator

Vertical Speed Indicator

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About the Author

David I. Schoen, known to generations of students as Professor Dave, has spent decades helping learners of all ages discover clarity, confidence, and even a little joy in the worlds of language, math, and learning. A veteran educator, tutor, and writer—and an unapologetic lover of books—he specializes in turning complicated ideas into simple, friendly explanations that actually stick.

Dave has guided thousands of students through English, math, writing, grammar, and test preparation, as well as the always-adventurous process of becoming a stronger thinker. His teaching blends humor, precision, and storytelling—a combination that has helped learners from elementary school through adulthood feel empowered instead of intimidated.

He is also an active private pilot, and has been flying for over three decades—an experience that has shaped the realism, detail, and sense of wonder behind *Tamias Learns to Fly* and *The Flying Explorers Series*. Before becoming an author and educator, he worked as an Air Traffic Controller at JFK International Airport, one of the world's busiest airports, for almost two decades. Aviation is in his blood, just as it is slowly coming to be in 'Tamias'.

When he isn't teaching or writing, Dave can usually be found creating new educational books, experimenting in the kitchen, playing the piano, or working on inventive projects that combine family, learning, and fun. He lives on Long Island, New York, where he is constantly surrounded by stories waiting to be told.

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Keep your head up!
