

Never Trust a Flying Squirrel – The Flying Explorers Series – Book 3

Never Trust a Flying Squirrel

A Story of Dreams, Airplanes, and Learning to Fly

The Flying Explorers Series – Volume 3

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David I Schoen



Appendix A — Flight Training Concepts (Book 3)

This story is fiction.

The airplane is not. The aviation terms and training are not.

Everything you saw Tamias learn in this book is based on real aviation training—just scaled down, simplified, and explained in a way a young reader can actually follow.

Book 1 was about the beginning.

Book 2 was about discipline.

Book 3 is about something sharper.

Book 3 is where Tamias begins learning what it means to fly when the sky stops being friendly.

This appendix collects the major flight concepts from Book 3 in one place, so you can review them like a real student pilot.

The Third Term (When Training Stops Feeling Like Play)

In real flight training, there is a point where the student changes.

Not because they learn a new maneuver.

Because they start understanding responsibility.

Book 3 is where Tamias begins learning this truth:

The airplane does not care how hard you tried.

It only cares what you did.

That is not cruelty.

That is aviation.

The Two-Instructor System (Why Esquilo Still Matters)

In Book 3, Tamias has two very different mentors:

Captain Corax

- old-school

- strict
- precise
- unforgiving about “almost”

Esquilo

- calm
- experienced
- gentle
- still serious, but less severe

This is not random.

In real training, many students benefit from having:

- one instructor who builds discipline
- one mentor who helps them stay emotionally stable

A student who becomes only disciplined can become rigid.

A student who becomes only calm can become careless.

Book 3 shows the balance.

Night Flying (When the Sky Removes the Comfort)

Most new pilots assume night flying is scarier because it is dark.

That’s true.

But the deeper reason is this:

At night, the sky removes detail.

In daylight, there are too many visual references.

Your brain gets lazy.

It guesses.

At night, there are fewer references.

That means:

- drift becomes easier to notice
- alignment becomes more obvious

- mistakes become harder to hide from yourself

Night flying forces a student to become more disciplined.

Not because night is evil.

Because night is clean.

Drift and Crab (The Truth the Wind Forces You to Learn)

Wind is invisible.

But it is not subtle.

When wind blows, two things can be true at the same time:

- 1) The airplane's nose is pointed one way.**
- 2) The airplane is traveling a different way.**

This is why pilots learn the crab.

Crab means:

- you point the nose into the wind
- so your path over the ground stays correct

Drift means:

- the wind is pushing you sideways
- and if you don't correct, you will not go where you think you are going

Book 3 makes this concept feel real.

Because at night, Tamias can actually see it.

Pilot-Controlled Runway Lighting (When the Runway "Appears")

One of the coolest moments in Book 3 is also a real aviation system:

Pilot-Controlled Lighting (PCL).

Many small airports do not have a tower.

That means:

- no controller turns the lights on
- no one is “watching” you land

Instead, the runway lights are activated by the pilot.

The pilot:

- tunes the airport frequency
- clicks the microphone button (push-to-talk)
- and the runway lights turn on

Most systems use:

- 3 clicks (low)
- 5 clicks (medium)
- 7 clicks (high)

To a student, it feels like magic.

To a pilot, it feels like:

a system doing exactly what it was designed to do.

Crosswind Technique (Why You Don’t Land in a Crab)

A crosswind landing is one of the most important skills in early training.

It teaches a student a brutal truth:

The airplane wants to drift.

The runway does not allow it.

On final approach, a pilot often uses a crab.

That is normal.

But on touchdown, the airplane must be aligned with the runway.

That means:

- the nose must be straight down the runway
- the airplane must not be drifting sideways
- the upwind wing may need to be lowered
- the rudder is used to keep the nose aligned

This is called a slip.

A student learns this by doing it over and over.

And Book 3 shows why:

The wind does not care if you are tired.

The wind does not care if you are proud.

The wind does not care if you “almost had it.”

The Go-Around (The Most Important “Non-Landing” in Aviation)

Most non-pilots think the goal of every approach is to land.

That is not true.

The goal of every approach is:

to land only if the landing is safe.

A go-around is when the pilot decides:

“I am not landing. I am leaving. I will try again.”

This is not failure.

In fact, in aviation, a go-around is often a sign of maturity.

Because the student is learning:

- You do not “push through” a bad approach.
- You do not land because you started.
- You do not land because you want it.
- You land because the conditions are correct.

The go-around is one of the first places where flying becomes judgment.

“You Have Time” (The Lie New Students Believe)

New students rush.

They rush because their brain is screaming:

LAND NOW. FIX IT NOW. DO SOMETHING NOW.

But the truth is this:

If you are flying correctly, you usually have time.

Time to:

- stabilize the approach
- correct drift
- adjust power
- re-trim
- make a decision

Book 3 introduces this deeper lesson:

**Rushing is not bravery.
Rushing is panic disguised as effort.**

A pilot learns to slow down.

Not in speed.
In thinking.

Switching Aircraft (Why the Piper Cadet Matters)

In Book 3, Captain Corax introduces a different airplane.

A Piper Cadet.

This is a real training truth:

A pilot cannot become dependent on one machine.

Different airplanes have:

- different sight pictures
- different ground effect
- different stall speeds
- different rotation speeds
- different approach speeds
- different handling in wind

The rules do not change.

But the feel changes.

This is why Captain Corax says:

“It’s all the same, and yet different.”

That sentence is real.

The POH and the Numbers (Why Memory Is Not Allowed)

One of the most important moments in Book 3 is when Captain Corax brings out the POH.

The Pilot’s Operating Handbook is not decoration.

It contains the airplane’s:

- airspeeds
- performance limits
- procedures
- emergency guidance

Captain Corax forces Tamias to check the “numbers.”

Rotation speed.

Climb-out speed.

Best glide speed.

Approach speed.

This is a real habit pilots must build.

Because when you step into a new aircraft, guessing is not a small mistake.

Guessing is negligence.

Ground Effect (Why Low Wings Feel Different)

Book 3 introduces a low-wing airplane.

Low-wing aircraft often feel different near the ground.

One reason is ground effect.

Ground effect is the cushion of air that builds when the airplane is close to the ground.

It can:

- reduce drag
- make the airplane float longer
- change how the flare feels
- change how the airplane behaves in a gusty crosswind

This is why a pilot must adapt.

Not with fear.

With attention.

The Workload Problem (Why Students Run Out of Brain)

One of the quiet themes of Book 3 is workload.

A student pilot has limited mental capacity.

When the sky is calm, that capacity feels huge.

When the wind increases, or the light changes, or the aircraft changes, the student discovers something:

They can run out of brain.

That is not stupidity.

It is normal.

This is why instructors delay certain tasks until later.

And this is why Corax insists on discipline.

Discipline creates spare attention.

The Preflight Mindset (Why “Check Everything” Isn’t Paranoia)

In Book 3, Tamias becomes even more serious about preflight.

This is not a personality trait.

This is training.

A preflight inspection exists because:

- machines can fail
- maintenance can miss things
- creatures can make mistakes
- weather can create damage

A pilot checks the airplane not because they are anxious.

A pilot checks the airplane because they are responsible.

The Solo Threshold (Why “You May Be Close” Is So Heavy)

Near the end of Book 3, Captain Corax says something that changes everything:

“You may be close to solo.”

In real flight training, solo is not a reward.

It is not a badge.

It is the moment where a student becomes temporarily alone with the sky.

That means:

- no instructor safety net
- no second set of eyes
- no one to catch the mistake
- no one to save the landing

That is why solo creates two emotions at once:

Excitement means you care.

Fear means you understand.

Book 3 captures this correctly.

Because solo is not a celebration.

Solo is a responsibility test.

What *Tamias* Really Learns in Book 3

This is the true message of Book 3:

Tamias begins learning how to fly when conditions are not friendly.

He learns:

- that night flying removes comfort
- that drift is real, not theoretical
- that crab is normal, but touchdown must be aligned
- that crosswind landings require precision
- that a go-around is judgment, not failure
- that switching aircraft requires humility
- that the POH is not optional
- that discipline creates time
- and that solo is not a dream—it is a threshold

And then, in Chapter 10, *Tamias* crosses the line every student pilot remembers forever:

He flies alone.

Not because the sky becomes safe.

Because the student becomes serious.

Book 3 ends with something new inside Tamias.

Not confidence.

Responsibility.

Because after solo, the training changes again.

Before solo, a student is learning skills.

After solo, a student is proving judgment.

Book 4 will be the next step.

And the next step is the part of training most people don't understand until they live it:

Learning to fly like a pilot every time.

Not once.

Not on your best day.

Every time.

Be sure to visit tfeseries.com for more information, and for downloads to further enhance aviation learning.

Thanks for reading!

Appendix B — Glossary (Contains all aviation terms in this series)

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.

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.

Approved — In aviation, “approved” means allowed by the 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.

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.

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. Airplanes use brakes mainly during taxi and after landing.

Briefing — A structured review before a flight (or before a maneuver) where the pilot explains what will happen, what to watch for, and what to do if something goes wrong.

Buffet — A shaking or vibration felt in the airplane as the wing approaches a stall. It is one of the wing’s warning signs.

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

Ceiling — The height of the lowest cloud layer that covers most of the sky. A low ceiling can prevent VFR flight.

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

Checklist — A written list of steps pilots follow to make sure important actions are not forgotten. Checklists exist because human memory is not reliable under pressure.

Circuit Breaker — A safety device that stops electricity from flowing if there is a problem, to prevent damage or fire. Many airplanes have small push-button circuit breakers.

Climb — Flying upward to gain altitude.

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

Control Surface — A moving part of the airplane (like an aileron, elevator, or rudder) that changes airflow to control the aircraft.

Control Wheel Lock — A device that locks the yoke in place when the airplane is parked, so the controls don't move in wind. It must be removed before flight.

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

Cowling — The outer cover around the engine.

Crab — Flying with the airplane's nose pointed into the wind so the airplane's track over the ground stays on course.

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

Crosswind — Wind blowing across the runway rather than straight down it. Crosswinds make takeoff and landing harder.

CTAF (Common Traffic Advisory Frequency) — The radio frequency used at an uncontrolled airport for pilots to announce their position and intentions, and to coordinate with other aircraft.

Density Altitude — A number that combines altitude, temperature, and air pressure. High density altitude makes the airplane perform worse, as if it were flying higher than it really is.

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

Drag — Air resistance that slows the airplane down.

Drift — Sideways movement over the ground caused by wind pushing the airplane off course if the pilot does not correct.

Elevator — A hinged control surface on the horizontal tail. It controls pitch (nose up or nose down).

Emergency — In aviation, an emergency is any situation where safety may be threatened and the pilot must act immediately. Emergencies are handled using training and checklists.

Empennage — A formal aviation word for the tail assembly of an airplane (including the horizontal and vertical stabilizers and their control surfaces).

Engine — The machine that provides power for the airplane. In many Cessnas, it turns the propeller.

Engine Instruments — Gauges that show engine health, such as oil pressure, oil temperature, RPM, and fuel flow.

FAA — Federal Aviation Administration. A U.S. government organization that makes and enforces rules for aviation.

FAA Approved — A phrase meaning something meets FAA requirements. It does not mean “recommended.” It means officially accepted under aviation rules.

Final Approach (Final) — The last straight part of the traffic pattern, lined up with the runway before landing.

Finals Week — The last week of a school term, when exams and major projects are due.

Flap — A hinged surface on the inner trailing edge of the wing. Flaps change the wing shape to help with takeoff and landing at slower speeds, but they also add drag.

Flight Controls — The parts a pilot uses to control the airplane: yoke, rudder pedals, and sometimes other levers or trim controls.

Flight Instruments — The gauges on the panel that help a pilot understand what the airplane is doing.

Flow (Procedure Flow) — A memorized pattern of checking or setting items in the cockpit, often used before verifying with a checklist.

Forecast — A prediction of future weather. In aviation, forecasts are useful but never guaranteed.

Front — A boundary between two different air masses. Fronts often bring changing winds, clouds, and storms.

Fuselage — The main body of the airplane.

Gauge — An instrument that shows a measurement, such as fuel level or oil pressure.

Go-Around — A decision to stop a landing attempt and climb away to try again. Go-arounds are normal and safe, not failures.

Ground School — The part of flight training done on the ground. Ground school teaches weather, navigation, systems, regulations, and decision-making.

Heading — The direction the airplane's nose is pointing, usually measured in degrees.

Heading Indicator — An instrument that shows the airplane's heading using a gyro.

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

Ignition — The system that starts and keeps the engine running, including the key or switch that activates it.

Ignition Switch — The key or switch used to start the engine.

Instrument Panel — The section in front of the pilot containing flight and engine instruments.

Judgment — In aviation, judgment means choosing the safe action even when a risky action feels tempting.

Landing Gear — The wheels (or skis/floats) that support the airplane on the ground.

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

Lights (As Required) — A checklist phrase meaning certain lights should be used depending on conditions and rules.

Load Factor — A measurement of how much force is being placed on the wings, especially in turns or pull-ups. Higher load factor can lead to an accelerated stall.

Logbook — A pilot's official record of flight time and training. Student pilots log lessons, and instructors sign the logbook to confirm training and authorize solo flight.

Magneto — A device that helps create spark for the engine. Many piston airplanes have two magnetos for redundancy. During runup, pilots check each magneto separately.

Main Landing Gear — The two main wheels under the airplane that support most of the weight.

Master Switch — The main electrical power switch for the airplane.

METAR — A coded weather report that describes current conditions at an airport.

Mixture — A control that adjusts the ratio of fuel to air going into the engine.

Mixture — Rich — A checklist setting meaning the mixture is set to provide plenty of fuel for engine operation, often used for start and takeoff at low altitude.

Nose Gear — The wheel under the front of the airplane.

Oil — A fluid used to lubricate the engine and prevent damage from friction and heat.

Oil Pressure — A measurement showing whether oil is circulating properly through the engine.

Oil Quantity — The amount of oil in the engine. Pilots check this before flight.

Parking Brake — A brake setting that holds the airplane still during runup.

Pattern (Traffic Pattern) — The rectangular flight path used for takeoff and landing at an airport, including upwind, crosswind, downwind, base, and final.

Personal Minimums — A pilot's personal safety limits, such as minimum visibility, maximum wind, or maximum crosswind. Personal minimums are often stricter than the legal rules.

PCL (Pilot-Controlled Lighting) — A system at many uncontrolled airports where the pilot turns runway lights on by clicking the radio microphone a certain number of times on the airport frequency.

PIREP — A pilot report describing actual weather conditions encountered in flight, such as turbulence or cloud tops.

Pitch — The airplane's nose moving up or down.

Pilot — The person controlling the airplane.

Pilot's Operating Handbook (POH) — The official manual for a specific airplane model. It includes limitations, procedures, and performance information.

Pitot Tube — A small tube on the airplane that measures air pressure to help determine airspeed. It must be clear and unobstructed.

Pressure (Atmospheric Pressure) — The force of the air pushing downward. Changes in pressure affect weather and flight instruments.

Preflight — The inspection of the airplane before flight.

Propeller — The spinning blades at the front of many airplanes. A propeller produces thrust by pushing air backward.

Push/Pull — How the yoke is moved forward and backward to control pitch.

Radio — A communication device used by pilots to talk to air traffic control or other aircraft.

Radios — Set — A checklist item meaning radios are tuned and ready.

Registration — An official document proving the aircraft is registered legally. It must be carried in the airplane.

Right-of-Way — Rules that decide which aircraft has priority in the air, similar to rules of the road.

Roll — The airplane's wings tilting left or right.

Rotation — The moment during takeoff when the pilot raises the nose and the airplane lifts off.

RPM — Revolutions per minute. A measurement of how fast the engine (and propeller) is turning.

Rudder — A hinged control surface on the vertical tail that controls yaw.

Rudder Pedals — Foot pedals in the cockpit used to control the rudder and yaw.

Runup — A procedure performed before takeoff where the engine is tested at higher power while

the airplane is held still.

Runway — A long, flat strip of ground used for takeoff and landing.

Seatbelt — A safety strap used to hold the pilot and passengers in place.

Secure — In aviation, “secure” means properly fastened, locked, or confirmed—not just “probably okay.”

SIGMET — A weather advisory for severe conditions that can be dangerous to all aircraft, such as severe turbulence, severe icing, or thunderstorms.

Solo Endorsement — A written authorization in a student pilot’s logbook from an instructor allowing the student to fly alone.

Spinner — The rounded cone at the center of the propeller that improves airflow and covers hardware.

Stall — A condition where the wing stops producing enough lift because the angle of attack is too high. A stall is not the engine stopping.

Stall Recovery — The correct steps used to return the wing to normal flight after a stall. This usually includes lowering the nose to reduce angle of attack and adding power as needed.

Stall Warning Horn — A warning sound in many airplanes that activates when the wing is close to stalling.

Static Port — A small opening on the airplane that measures outside air pressure for instruments like the altimeter.

Steer — To control direction while on the ground, usually with rudder pedals and nose wheel steering.

Strut — A support beam. On many Cessnas, wing struts help hold the wings up.

Suction — A system (often vacuum-based) used to power certain gyroscopic instruments in some airplanes.

System — A group of parts working together. Aviation is built around systems.

TAF — A coded forecast that predicts future weather at an airport.

Takeoff — The process of accelerating down the runway until the airplane lifts into the air.

Taxi — Moving the airplane on the ground under its own power.

Tactical Pause — A moment where a pilot stops rushing, breathes, and makes a decision calmly. Aviation is full of moments where the correct move is to slow down mentally.

Throttle — A control that adjusts engine power.

Throttle — Idle — The lowest power setting.

Throttle — 1000 RPM — A common low power setting after start.

Throttle — 1700 RPM — A common runup power setting in many Cessna checklists.

Thrust — The force that moves the airplane forward.

Tire — The rubber wheel covering. Pilots inspect tires before flight.

Trim — A control that helps the airplane hold a desired attitude without constant pressure on the yoke.

Trim — Set for Takeoff — A checklist item meaning trim is set to the correct position for a safe takeoff.

Trim Tab — A small movable surface on the elevator that helps with trim.

Turbulence — Rough, uneven air that can cause the airplane to bump or shake.

Turn Coordinator — An instrument that shows rate of turn and coordination.

VFR (Visual Flight Rules) — Flying by looking outside and maintaining visual references, usually in clear weather.

VFR Minimums — The legal minimum visibility and cloud clearance needed to fly under VFR.

Vertical Stabilizer — The upright fin on the tail. It helps keep the airplane stable in yaw.

Vertical Speed Indicator (VSI) — An instrument that shows how fast the airplane is climbing or descending.

Weather Advisory — An official warning about dangerous weather conditions that pilots should consider before flying.

Weight & Balance — Information showing how heavy the airplane is and how the weight is distributed. Too much weight or wrong balance can make flying unsafe.

Wind Correction Angle — The small adjustment a pilot makes to heading so the airplane stays on course despite wind pushing it sideways.

Wing — The part of the airplane that produces lift.

Wing Strut — A support beam connecting the wing to the fuselage on many Cessna models.

Wing Tip — The outermost end of the wing.

Yaw — The nose turning left or right.

Yoke — The main control used by the pilot to control pitch and roll.

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.

Professor 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*’s.

When he isn’t teaching or writing, Professor 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 in Kings Park, New York, where he is constantly surrounded by stories waiting to be told.

The author can be reached at:

<http://www.theflyingexplorersseries.com>

<http://www.themathexplorersseries.com>

<http://www.thelanguageexplorersseries.com>
