

# Slow Flight

## A Tool for Clarity

By Niklas Daniel



**M**any skydivers tend to underestimate the value of slow flight and as a result don't implement it as often as they should. Most deploy their parachutes, perform a controllability check and then proceed to fly at full flight for the majority of the time. They toggle between two positions: full-flight (hands up) and landing/flaring (hands down), leaving a wide range of airspeed-control techniques unexplored. Slow flight has numerous applications, and the skills gained through deliberate practice can sharpen a canopy pilot's control in ways that may not be immediately obvious. Working with a professional canopy coach can help you build these skills with quality feedback, clear understanding and confidence.

### Why Do So Many Jumpers Avoid Flying in Brakes?

There are several common reasons skydivers give for not spending more time flying their parachutes in brakes.

- **Impatience:** often justified by the familiar phrase: "I have to get down." You are guaranteed not to go back up, so what is the rush?
- **Fear of the unknown:** Worries about stalls or turbulent conditions can create unrealistic expectations of what might happen, usually reflecting a lack of practical knowledge or hands-on training.
- **Fatigue:** Poor hand placement and arm mechanics often lead to unnecessary shoulder strain. Many new canopy pilots aren't yet sure how to manipulate the toggles efficiently to engage

the right muscle groups. Flying in brakes, even for an extended period of time, shouldn't feel tiring or restrictive. With the right technique, you can conserve energy while maintaining control.

- **Discomfort:** Incorrect harness adjustments after deployment can make the canopy flight uncomfortable, pushing the jumper to want to land as soon as possible. Learning to properly adjust your chest and leg straps can significantly improve comfort and flight efficiency and control.
- **Misconception:** Some jumpers believe landing first is a sign of skill or status. This mindset encourages unnecessary rushing. Spiraling may be fun, but it burns precious altitude quickly, reducing predictability to others and diminishes your situational awareness.

Whatever the reason, avoiding slow flight altogether is a poor decision.

There are several phases of flight between deployment and landing. Similarly, a drive home involves different speed limits and road rules depending on where you are. Each section of the journey has an appropriate pace and set of actions—regardless of how eager you are to get home. Sometimes we need the fastest possible ground speed to make it back from a long spot (like a freeway), and other times we need to slow down and spend our remaining altitude wisely (like navigating a residential street). The key difference? Drivers are guided by road signs, signals and speed limits—and those rules are backed by enforcement. Canopy pilots, on the other hand, have to



self-regulate. No signs. No speed limits. No traffic tickets. Just your own judgment.

Airmanship goes beyond flying proficiency to include judgement, discipline and a commitment to continuous improvement and safety. It is up to each canopy pilot to understand what phase of flight they find themselves in—and what are the best actions to take. The challenge is that jumpers don't always learn airmanship and canopy etiquette organically, and unsafe or poor habits often go uncorrected. Therefore, it is our responsibility to continually improve for our own safety and the safety of our fellow jumpers.

### The Benefits of Flying Slowly:

Mastering slow flight develops a deeper understanding of aerodynamics, enhances control and precision, and refines energy management—skills that are crucial for safe and efficient flying at all speeds. Therefore, the faster a parachute is, the better your slow flight skills need to be to mitigate risk. So, get comfortable, slow down, enjoy the view and learn something new.

### Increase Situational Awareness

Rushing can lead to mistakes and regret. The proverbial “outrunning your headlights” refers to being overwhelmed by the workload and unable to effectively manage all the necessary tasks required to fly a canopy safely. Being task saturated or “falling behind” implies a state where the canopy pilot is reacting to events instead of proactively managing them, essentially allowing the situation to dictate your actions rather than actively anticipating and controlling it. Many who fly in a passive or reactionary way unintentionally put themselves and others in undesirable situations. Slowing down allows one to maintain composure by feeling present and calm as well as absorb information that is useful. While in slow flight, we buy ourselves time by conserving altitude. This opens up a pilot's mental bandwidth to make decisions and decreases the chance of becoming cognitively overloaded, especially when in a congested air space with others or when having to land out.

### Increased Maneuverability

What's the difference between agility and maneuverability? Agility refers to how quickly you can rotate around the pitch, roll or yaw axes. Maneuverability on the other hand refers to how often you can change direction of flight in the least amount of space (vertical or horizontal). The purpose of a flat turn is to create a heading change while losing the least amount of altitude – i.e. increasing maneuver-



## Teaching the Basics: Attitude, Context and Repetition

A person's attitude toward a subject shapes how they perceive it, how much value they place on it and how likely they are to engage with it. An instructor's positive attitude increases the likelihood of meaningful engagement—for both themselves and their students.

If an instructor considers something unimportant, their students likely will, as well. Take the USPA Canopy Proficiency Card: It's not just a box to check or a barrier, but a structured path for turning theory into repeatable skills. Building canopy proficiency takes more than one-time exposure—it requires context, deliberate practice and repetition.

To be effective, instructors must explain, demonstrate and contextualize skills so pilots understand how to perform them—and why they matter. Without that, drills become empty routines. Without consistent practice, poor habits or “training scars” begin to form. When faced with a challenge, many panic because they lack the awareness or skill to respond. Most accidents stem from poor planning or training—in other words, pilot error. Equipment is rarely the culprit; most injuries today happen under perfectly good parachutes.





ability. Just like driving a car, slowing down reduces the turn radius. While it is possible to perform a sharp input with a tight turn radius, this type of action loses a lot of altitude. This means you execute an efficient flat turn with deep toggle input while keeping your body directly under the wing.

### Utilize Your System's Entire Performance Envelope

Many jumpers are uncoordinated when it comes to applying "negative inputs" with the toggles. These are maneuvers where both brakes are applied symmetrically, then one hand moves upward slightly toward the canopy to create a heading change. Misuse of the toggles frequently results in poorly executed flat turns, uncontrolled surges and ineffective stall recovery.

### Build Confidence and Understanding

Flaring and stalling are two separate concepts. Many avoid fully shutting down their canopy's speed on landing—lacking the confidence knowing how to recognize, avoid and, if necessary, recover from stalls. To reach competence, you need to find out what the maximum range of your slow-flight capabilities is at high altitudes (above decision altitude). Handling and stall characteristics will differ depending on which model and size parachute you are flying. Some are docile while others are quite sporty. Developing the appropriate muscle memory for your specific equipment is key. Parachutes stall at any speed when the trailing edge of the wing is pulled down far enough. It is not a matter of time (i.e. how long you hold the brakes down) but a matter of wing shape and angle of attack. In simplest terms, sufficient trailing edge deformation causes a stall. The trick

is to identify when you've created this shape in respect to your toggle stroke.

### Ease Traffic Congestion

To be prepared to avoid canopy collisions, you must practice defensive flying regularly. The goal is to navigate to and maintain your position in the holding area while keeping a safety cushion of clear airspace around you. When you do this properly, the safety cushion will be easier to maintain throughout the landing pattern where the funnel effect—a choke point where canopy pilots clump together, typically on the base leg turning to final—occurs. Since most on the load try to land in the same landing area, we need to separate ourselves by time to increase the margin for safety. Learn to maneuver while adjusting your descent rate to create vertical separation utilizing the brakes relative to others around you—especially in congested skies.

### Read the Conditions Accurately

Flying slowly can help identify wind speed and direction, which are immediately reflected in your ground speed. This is because the slower a parachute travels through the air, the more susceptible to the wind conditions it becomes. Many novice jumpers don't learn to appreciate this fact and become increasingly frustrated with their parachutes. Study your ground speed, check the landing area's wind indicators, watch jumpers already established in the pattern and anticipate the actions of those around you. As a result, you will read wind indicators better and more frequently, fly more precise landing patterns, and see your accuracy improve.





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## Enjoy Better Landings

Slow-flight skills work in combination during a landing. If you want to have better landings, you need to prioritize improving your slow-flight skills. In most contexts, a soft landing is considered to be the same as a safe landing. Sudden impacts, especially at oddball angles to joints, produce excessive forces on the body. Compounded over time, jumpers can become less confident and dread future landings because they associate the canopy ride with pain. Therefore, a good landing is not one you can merely walk away from, but one where your body weight transitions smoothly from the harness to the ground.

Having a level wing during the final approach refers to the bank angle, which you can feel in the harness as long as you've achieved proper positioning. As the nose pitches up during the landing flare, the wing should be level (span parallel with horizon) in order to get the most lift and keep your feet underneath you. When a jumper is proficient at flat turns, they are more aware of the attitude of their wing during landing and can therefore avoid asymmetrical inputs.

## Putting it All Together

When applied in a coordinated manner, slow-flight skills are the key to implementing the landing priorities: level wing, obstacle-free area and flare. To do this, treat every landing as a unique event. Each event has a series of actions that you must take to ensure the desired outcome. The most important parts being *if* and *when* you finish your flare.

Flying slowly allows for greater focus on proper technique, improved body and system awareness, better control in challenging situations and a reduced risk of errors. It builds a strong foundation for more advanced maneuvers—ultimately leading to improved performance, deeper understanding and greater enjoyment. Many jumpers readily seek professional coaching to improve their freefall skills in the sky or wind tunnel. Yet, they often assume the instruction

they received in AFF is enough to navigate the vast and complex world of canopy flight. Your training must evolve as you (and your equipment choices) do.

There's nothing wrong with wanting to fly fast—but without mastering essential skills first, speed can become dangerous. Downsizing without the right preparation is both risky and unsustainable. Quality instruction will help you develop the skills necessary to assess, choose and execute the best possible course of action. It is up to the learner to do their due diligence by finding a qualified professional and ask clarifying questions.

Effective canopy pilots combine skill with strategy. Skill is execution; strategy is planning. One without the other falls short when it counts. Implementing great strategy outperforms relying solely on skill. This is because strategy implies a conscious plan or approach to tackle a problem or situation (proactive). Skill is simply the ability to perform specific action often without much thought (reactionary). Strategy can leverage skills effectively to achieve a desired outcome, especially in complex situations where simply having skill alone is not enough. There is no substitute for experience when learning a physical skill set. Knowledge that you gain firsthand is incredibly valuable because it is uniquely your own.



## About the Author

Niklas Daniel, D-28906, is co-founder of AXIS Flight School, based at Skydive Arizona, where he coaches body-flight and canopy skills year-round. He focuses on providing top-quality instruction with respect and professionalism, sharing valuable insights and creating resources to support lifelong enjoyment of the sport.