

Canopy Skills Drills
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By Brian Germain

Learning to fly our parachutes is absolutely necessary for long-term survival in this sport. The philosophy that the canopy is simply a means to get down from a skydive is gradually becoming a thing of the past. This may be as a result of individuals with such an attitude dropping out of the sport due to canopy-related injuries, or from the insurmountable fear that comes as a result of a lack of control over their experience. Regardless, many jumpers have been taking an increased interest in flying their parachutes better.

Reading and talking about canopies is the beginning of this process. We must understand the principles that allow our canopies to fly. To make a real difference in our capabilities, however, we need to physically experiment with our parachutes in flight. We must practice in the real world.

Here are a few exercises that will increase your abilities to save your own life, and enhance your feeling of control while under canopy:

Pitch Control Exercises

- Manipulate the canopy on the pitch axis using the brakes.
- Look at canopy to notice the amount of pitch axis change.
- Notice the difference between "soft" and "sharp" inputs:

slow application vs. quick.

Why?

Controlling the pitch angle is how we manipulate the angle of attack of the wing. Without a dynamic change to the angle of attack, we will be unable to increase the lift of the parachute enough to change the direction of flight from its normal full flight glide to level flight. This maneuver is essential for safe landings.

Pitch Control With Bank Angle

- Begin a turn using a single steering toggle.
- Apply the opposite toggle while still in the turn.

- Experiment with soft versus sharp inputs to negate decent.
- Look at canopy to notice pitch changes.

Why?

Having the ability to control the pitch axis while in a bank is what gives the pilot the ability to control the decent rate while in a turn. The natural tendency is to lose altitude in a turn, but this is not necessarily the result of turning with bank angle. By increasing the angle of attack while in a bank, we can increase the amount of lift that the parachute is producing, and even alter the flight path to level flight despite significant bank angle.

Dive Arrest: Toggle Turns

- Place the canopy in a spiral dive using a single steering toggle.
- Arrest the dive as quickly as possible by sharply applying the opposite toggle as well as the inside toggle; the inside toggle is not applied until the two are matched in the degree of input. When the toggles are matched, a short stab of collective brake pressure is usually all that is needed to achieve level flight.
- Exercise both banked recovery and wings level recovery.

Why?

Turning too low is the preliminary cause of many injuries in our sport. Unfortunately, most canopy pilots assume that bank angle must be eradicated before arresting the dive. This leads many to waste valuable altitude in the process of leveling the wing. In situations with very little altitude remaining, this may delay the collective brake application until it is too late. By rehearsing a transition to zero decent while still in a bank, the pilot becomes accustomed to applying the toggle on the outside of the turn as a learned instinct, reducing the chances of a turn leading to serious injury.

Dive Arrest: Front Riser Dive

- Place the canopy in a dive using the front risers.
- Rehearse dropping the front risers and quickly stabbing the brakes.
- Rehearse both straight front riser dive recovery as well as turning dives.

Why?

While acceleration on final approach can be great fun and usually leads to longer swoops, the acquisition of speed is not really the hard part. What keeps us alive is the judgment and skills necessary to save us when we dive the canopy too close to the ground. If we rehearse the solutions to the dangers, the likelihood of a dive resulting in serious injury is reduced. Letting the front risers up slowly may be the best way to get a long swoop when the dive is rounded up slowly and with ample altitude. Unfortunately, this muscle memory may not serve us when we are really low. In the time it takes to smoothly let up on the front risers we may find ourselves planted in the ground like a shrubbery. Dropping the front risers allows the pilot

to keep their hands down, ready to stab the brakes aggressively to arrest a mortal dive. A short, sharp, shock on the brakes may be all that is necessary to place the jumper back under the wing, and to the higher angle of attack that saves their life.

Slow-Flight Practice

- Place the canopy in 90% brakes and hold for 60-90 seconds.
- Make controlled heading changes of 45-90 degrees.
- Notice the difference in responsiveness as compared to full flight turns.
- Notice that lifting a toggle on the outside of the turn reduces the risk of stalling the wing on the inside of the turn.

Why?

Most pilots spend the majority of their canopy ride in full flight. This means that the feeling of the canopy in this mode is most comfortable to most people. It also means that flying in deep brakes places many out of their comfort zone. This means that most people are feeling somewhat uncomfortable just prior to putting their feet on the ground every single jump. In fact, this anxiety often causes people to hold their breath, and then offset their steering toggles toward the end of the landing in order to get to the ground sooner. They simply want this part to be over. In order to land with great consistency, we must become intimately aware of the flight performance of our parachutes in very deep brakes. The more time we spend in this flight mode, the more comfortable we will be. If we are to land well, we must be as comfortable with deep brakes as we are with full flight.

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