

Understanding Canopy Variables

If you ask pilots of fixed wing aircraft why they like flying, a common answer is that every take off and landing is different and so the excitement and challenge comes from trying to control an aircraft in these varying situations.

To become safer and more effective canopy pilots towards ourselves and to others we must realise that the same applies every time we land our parachutes. Think about it, a basic flight course to fly fixed wing aircraft requires a minimum of fifty hours – mostly with dual control. In some aspects it is easier to manage a light aircraft in comparison as the pilot can always open the throttle and return to the safety of the air if required. We do not have this luxury so we must understand that there are hundreds of variables that affect our descent.

List the Variables.

In order to become better canopy pilots we need to recognise that there are variables every time we fly a parachute, both physical and mental and of those some that we can control and some that we can't. Most people are aware of the obvious ones such as wind speed or wind direction. However what most people fail to realise is that there are hundreds and hundreds of variables affecting every canopy ride.

Managing the Variables:

A good canopy pilot is a disciplined canopy pilot. He is able first of all to identify what these factors are and then manage them as carefully as possible. Variables can be split into mental and physical and then between those we can control and those we can't. Incident reports in this way are misleading in that they can list only physical variables and normally only those we can't control.

A jumper without understanding these factors might turn up to a new dropzone which has a different elevation, with a new canopy to jump for the first time, planning to do a 180 degree turn into the landing area, after making a tracking jump so ends up deep when open, after a long flight so is tired...and so it goes on. Ask any dz operator – these type of things happen all the time.

A good canopy pilot will limit the amount of variables on each jump by comparison. Perhaps the first jump at a new dropzone the jumper might do a solo and pull slightly higher, maybe even on a different pass to avoid traffic. On the ground before the jump you would see this jumper carefully making a flight plan, taking obvious ground references and making decisions regarding wind direction.

Collecting Information

As a basic technique during the Safe Flight School Course, we require each participant to have the minimum 4 pieces of information before getting onto the aircraft:

1. a stopping point;
2. the landing direction;
3. a flight plan;

4. a last time an altimeter check is made.

These are all variables in themselves and you've guessed it, they are also affected by other variables so they need to be flexible - A jumper landing before you, stops on your stopping point; or maybe in light and variable winds the first jumper lands in the opposite direction to your plan; or maybe traffic is affecting the flight plan; and maybe the altitude does not allow for you to carry out the type of approach you had planned.

The first time you start to manage these four pieces of information it can feel like you are returning to basics. However by trying to control the four you start to get a feel for the variables involved in making a safe landing consistently. More importantly it means that each time you jump you have a structure for learning.

The jumper who gets onto the aircraft with the flight plan of ' I will land somewhere in the landing area into wind' will have problems learning, gaining experience and controlling the variables. This is because each approach and landing is a lottery. This jumper has no idea how he has travelled over the dropzone or how the variables (for example the wind) have affected his flight path. He has no reference of turn heights, or types of turn and as a result the muscle memory and his natural learning curve is limited. This jumper may understand all the theory in the world however has no demonstrable experience to learn from.

By comparison, the disciplined jumper has tried to fly to a set up point at a certain altitude, tried to fly a clear landing approach and has ground references in terms of direction and final stopping point. As a result, if this jumper did not land where he wanted to he can see for example how the wind has affected him or perhaps he turned too high onto finals and then overshot his stopping point – each time gathering information as to why certain things happened or did not happen. This jumper now has references and information to improve on the next jump again and again. Until you have the experience to do this by sight on the ground you must be methodical in your approach to canopy control.

I Hear Voices...

We all have an inner monologue and the good pilot understands that this is the best source of information for improvement out there. Everyone regardless of experience or whether they fly radically or conservatively will for example turn too low. However, normally your inner monologue will be screaming at you long before any dropzone owner will. So why don't we listen? We have the ability to recognise we are making a mistake or we are in danger - but not necessarily the understanding as to how we got there in the first place. This is because we generally choose to stick our head in the sand and ignore the voices. Your brain is telling you, "I don't like this canopy", or "I feel terrible from the night before" or "I'm worried about the spot because its windy". Listen to the voices and try and learn from them and ultimately make key decisions about whether you should be jumping, or whether you have the right equipment or whether you are happy with the weather conditions. Problems occur when these voices become so strong they cause panic and you make irrational decisions and big mistakes – an off

landing, power lines, suffering from a hangover, on a canopy that you are not familiar with, avoiding a downwind landing, not a lot of altitude left.....panic! and flying by the seat of your pants canopy control!

There are many other techniques available (both mental and physical techniques), which are covered on canopy courses to manage the variables of making a safe canopy approach. Find out what they are and become a safer canopy pilot as a result, but realise everything that occurs from the time you exit the aircraft until your final approach under canopy has an influence on how safe your landing will be.

Some variables for consideration:

Wind speed; Wind direction; Landing direction; Temperature; Hazards – fixed, moving; Canopy size; Canopy type; Number of jumps on that canopy; flight plan; type of turn; height of turn; Time since previous jump; Weight since previous jump; weight belts; Camera helmet; Elevation of dropzone; Turbulence; Other traffic; Opening point – bad spot?; Altitude loss during turns, spirals and any type of control input into your canopy; Mental conditions; Hungover?; Tired; Personal problems; Cold hands; Poor goggles or visor; Slider not stowed properly; Livestock (jump at Skydive Lillo and you will understand this one).

Brian Vacher is owner of the Safe Flight School (www.safeflightschool.com) which currently offers single, three and five day basic canopy control courses throughout the year at Skydive Lillo, close to Madrid, Spain. The course will also be travelling through some European countries during 2005. Email brianvacher@yahoo.co.uk or call +34 628 826 783 for further information.

Brian Vacher, The Safe Flight School.com