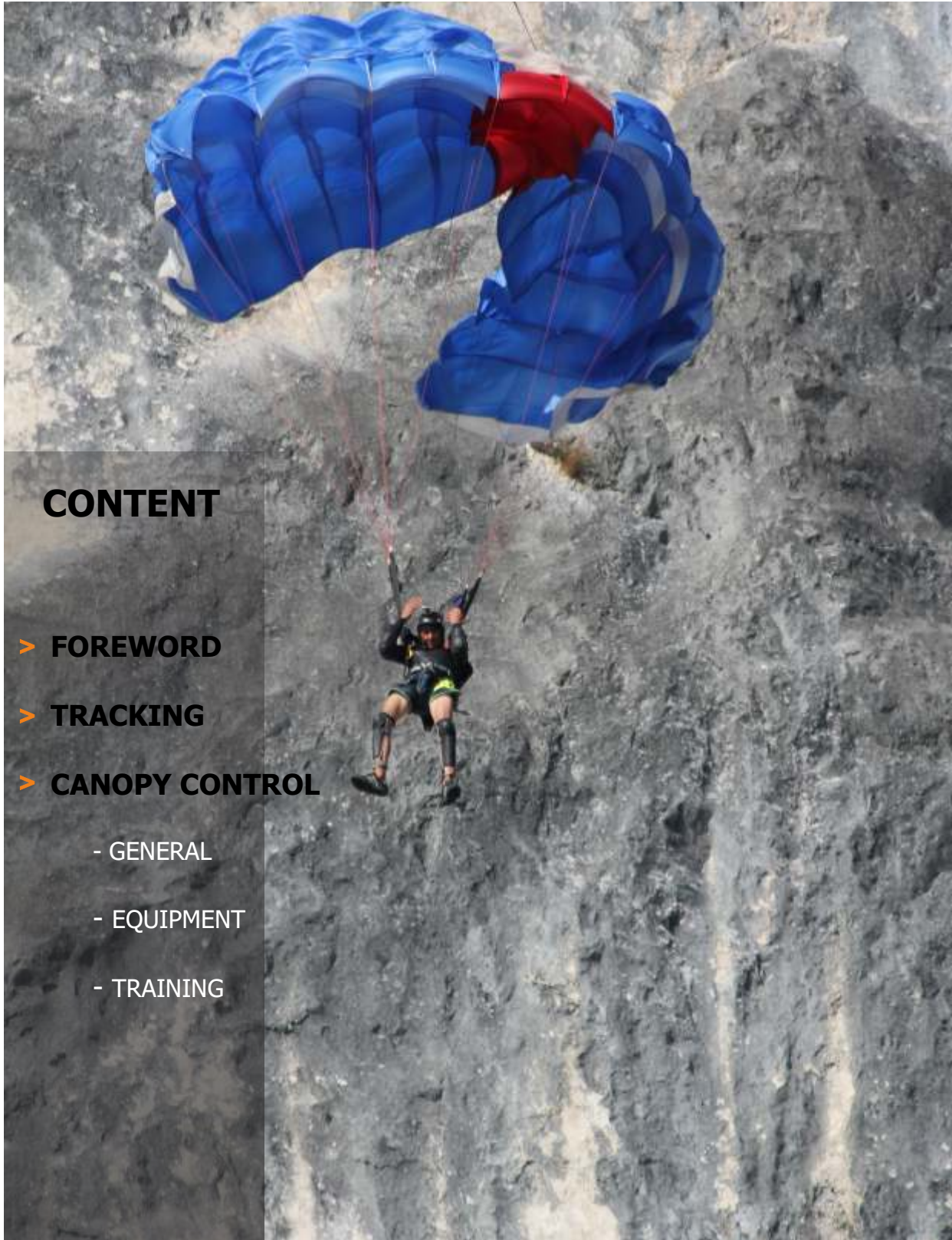




PRE COURSE TRAINING



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FOREWORD

This manual is NOT an introduction on how to perform a base jump! It is as a recommendation for beginning base jumpers in how they can prepare themselves for BASE jumping while minimizing the risk of injuries.

This manual is intended to be pre-course reading for jumpers who are planning a PRESSURIZED first jump course.

TRACKING

Good tracking is a prerequisite for BASE jumping. Experienced trackers start noticeable forward motion after just 3-4 sec; the sub-terminal track. One of the most important points is to perform a good transition from exit to sub-terminal tracking. This is not an easy task and is best performed first from a hot air balloon.

The first real BASE exits should then be performed from a suitable cliff; one offering great height and a substantial overhang.

The farther a jumper is able to track, the less likely a cliff strike will be after a 180° off-heading canopy opening.

Objects with more than 500m vertical drop can usually be out-tracked by good trackers; this means the jumper's separation from the wall is so great that there is almost no possibility of hitting the cliff. Cliff strikes after a 180° off-heading opening are the leading cause of accidents in BASE. They can often be avoided just by good tracking.

Tracking suits enable the jumper to begin horizontal movement sooner and to generate a far more effective track than would be possible with conventional clothing. Faster and farther separation from the object greatly enhances safety, but also requires adequate training with the suit. **Training out of the plane is essential!**

>>> Tracking

Train out of plane first. The recommended body position will be the following.

- > Body straight
- > body tension
- > knees locked
- > upper body straight or slightly de-arched
- > roll shoulders slightly to the front and down when speed increases
- > head hides between shoulders; chin to chest.

Everyone's body has a different shape. Try to find the body position which works best for you.



When tracking out of the plane make sure you check if your knees really are locked. Adjust your flight angle just by rolling your shoulders and try to find the flight angle which generates maximum forward movement. When experiencing a good track with high forward speed you will feel the lift on your back. A glance on your altimeter won't ruin your track. A GPS will give you hard facts and will help improve your performance.

CANOPY CONTROL

The canopy ride is a very important part of BASE jumping. The majority of BASE accidents happen not in freefall, but under an open or at least partially open canopy.

After slowing down from freefall, the first thing to do is to react to possible malfunctions or off heading openings. A 180° off-heading opening is possible on every jump – and one will happen sooner or later. The worst case scenario in BASE jumping is a 180° combined with line twists – the canopy is flying towards the object and control will be very difficult.

After a clean on-heading canopy opening the jumper must not lose concentration; focus is still required to come back to earth safely. A canopy ride over a forest can instantly turn into an exciting ride if the jumper hasn't calculated enough safety height or flies into sinking air. Always plan for extra height to reach your landing area. Jumps in alpine terrain often don't make landings easier: A 10x10m landing area surrounded by big sharp rocks with an awkward wind direction is not an uncommon scenario.

The jump is not complete until you're standing on the ground!

EQUIPMENT

Canopy skills are easy to train in skydiving. Ask accuracy jumpers at your DZ for advice in this skydiving discipline. If you have your own BASE canopy you can put it into your skydiving container (if the container is large enough). This will familiarize you with your canopy and will help you significantly in the BASE environment later.

Accuracy and BASE canopies are 7 cell canopies of similar size. The wing load is about 0,8lbs/ft² and should not much more or less. Higher wing load results in more speed, the canopy flies more aggressively, and it gets much harder to perform accuracy landings. A canopy which is too large (too low a wing load) is less pressurized and more susceptible to wind gusts. End cells may collapse during opening and flight.

Generally BASE canopies are more sensitive to land than accuracy canopies, as the range between sink and stall point is less. BASE canopies on the other side offer more glide due to a thinner airfoil.



TRAINING

Opening

To correct a 180° off-heading opening in close proximity to an object, fast reaction is required.

- >>> When skydiving you can train a fast reaction. Reach to the toggles as soon as the risers are out, un-stow the toggles and bring the canopy under control. It's important to be fast but deliberate when reaching for the toggles. If you miss you will have to try again or worse you could lose the toggle. You can also grab the rear riser itself for direct riser input – be aware that riser input is more aggressive than toggle input.

Important: When reaching up too early for the toggles or risers your hands can be hit by the risers. This can hurt your hands.

Reaching up for toggles/riser can also bring you out of your perfect body position and cause off-headings (when you twist your shoulders for example)

For BASE jumping it is really essential to know the limits of your canopy. You should exactly know when you reach the stallpoint and how the canopy reacts. As a BASE jumper you should be able to land your canopy without brake line control, just with your rear risers.

Flat turn

A 180° off-heading opening close to the object requires a fast reaction. If there is enough space, you should perform a half braked flat turn.

- >>> **Flat turn**
Fly the canopy in half brakes. Pull one brake – the direction you want to fly – harder while reducing input on the opposite toggle. The canopy turn rate will increase. After the canopy is flying in the direction you want, release both toggles. Using rear riser input you may be able to turn almost in place.

Stallpoint/ Stall

In case you find yourself facing the cliff after a 180° off-heading opening and there is not enough space to make a flat turn away from it, one possibility to clear the situation is a full stall. The requirement to perform a full stall is sufficient available altitude. You stop forward speed by pulling both brakes; the stall occurs and you keep your toggles in deep brakes. You will lose height and start flying backwards. During your backward flight you can make a 180° turn away from the wall. Releasing the toggles slowly will push you in flight again. The full stall can also be flown over your rear risers. If your canopy opens with line twists you may have to fly with the rear risers because you might not be able to change your flight path with your toggles. The twisted lines can fix the brake lines due to friction. Be aware you will lose a lot of height when performing that maneuver because of the increased sink rate.

**>>> Stallpoint**

Slow down your canopy with toggles. Watch your canopy and apply deeper brakes. The canopy will start moving backwards at one point. This is the stall point. At this point you release your toggles slowly and the canopy picks up speed again.

>>> Stall

After reaching the stall point you keep the deep brakes. The canopy will drop backwards. You can keep the canopy stalled as long as you want assuming you have altitude. Pulling the brakes more will cause you will fly backwards. Backwards flight is controllable but be aware that the toggle input required is opposite.

To make a 180° turn out of backwards flight simply release one brake. The canopy turns on place. After completing your 180° turn release the second brake and you canopy starts flying again.

Important: Also practice the stall maneuver with only rear riser input!

Riser Turn

Control over the rear risers is an important aspect in BASE. The 180° off-heading scenario close to the wall, potentially with line twists, requires a fast reaction. The canopy is still in half brake setting after opening and is flying slow. Grab the rear risers, stall, fly backwards and release one riser a bit for a flat turn on place.

There are other reasons which require back riser control: a broken control line, a tension knot, or a lost brake line when jumping slider down with free control lines.

Accuracy landings with just rear riser are tricky. Rear riser input will change the angle of attack. Brake line input will cause more airfoil deformation; drag and lift are less than with rear risers input. This is why you can't sink in the canopy like you would with half brakes.



>>> Steering

Grab your rear risers and gently control your canopy – rear risers will apply much more input than toggles. Also try to control with one toggle and one rear riser. Learn to perform the stall maneuver with only rear risers.

Important: A pull of only a few centimeters on the rear risers will result in great canopy input.

>>> Landing

Out of full flight you give rear riser input just before you reach the ground. With support of the ground effect flare out the canopy with your rear risers.

Landing

Being able to perform accuracy landings is a must for BASE jumping. You should be able to consistently land within a 10x10m area. You should talk to experienced accuracy skydiver at your drop zone about techniques. If you have enough height you should fly a classic landing: After the crosswind section fly the final part with half brakes. This will allow you to make your glide steeper or flatter. If your final section is too flat you will not reach the landing point if you encounter a wind gust or sinking air; If it's too steep you might stall your canopy. Stalling close to the ground is bad! If you find yourself in a headwind so strong that you are almost not moving forward, you have already made a mistake ;). In this case pull symmetrically on both dive loops attached on your front risers. Try to find a small body position which minimizes your exposure to the headwind. Try to create minimum drag. Using the **dive loops** will make you fly faster but also increase your sink.

If you have enough landing space let your canopy fly and flare it. For small landing areas it is often better to sink in with half brakes. If the landing area allows, always land flying into the maximum wind component. In BASE you sometimes have to land with side wind or even a tail wind. Use high ankle protecting shoes.

In alpine areas you sometimes have to land on a slope. **Always land parallel to the slope, never against the slope!**

If encountering a rear riser landing be aware not to stall your canopy. Land with enough speed and flare the canopy when you are very close to the ground.

**>>> Landing**

Practice accuracy landings; you should be able to land consistently within a 10x10m area.

We wish you a successful training for your BASE career!

Your PRESSURIZED Team

!!! WARNING !!!

BASEJUMPING IS EXTREMELY DANGEROUS! YOU MAY BE SERIOUSLY INJURED OR KILLED.

PARACHUTES SOMETIMES MALFUNCTION, EVEN WHEN THEY ARE PROPERLY DESIGNED, BUILT, ASSEMBLED, PACKED, MAINTAINED AND USED. THE RESULTS OF SUCH MALFUNCTIONS ARE SOMETIMES SERIOUS INJURY OR DEATH.

PRESSURIZED ADVISE YOU TO SERIOUSLY CONSIDER THE POTENTIAL CONSEQUENCES OF YOUR ACTIONS SHOULD YOU DECIDE TO PURSUE THIS SPORT.