Low Freefall My Thoughts

By Greeny

The 2 canopies I jump and have most of my low freefall experience on are 2 similar, but different FOXs. I have also put various vented FLICKS (242, 266 & 280) into freefall from 173ft all with good results.

Canopy 1)
Fox 265
ZP Top skin
V-Tec Vents
Multi bridle attachment
5th Break line mod
In a Vetex 2 container

This canopy has been used for every thing from Terminal Freefall and Wingsuits down to Freefalling from 173ft with flared standup landings. This was my first FOX and I Have about 300 Jumps out of my 425 total BASE on this canopy. I put my early jumps on a MOJO 260 but chose this FOX as its replacement after watching a friend jump an identical one off a low object.

Canopy 2)
Fox 245
ZP Top skin
V-Tec Vents
Multi bridle attachment
5th break line mod
In a DP container

This is my low freefall rig and has been modified purely for delays of less than 1 second. I have about 45 jumps on this canopy.

One size smaller was chosen, as a smaller canopy weighs less, the pack job needs to lift less, as the lines are shorter and less air is needed to fill the cells. Therefore all else being equal a smaller canopy will open quicker.

The V-Tec vents were doubled in size and also added to the center cell. The larger V-Tec allows more air to enter the canopy through the bottom skin and therefore helps to pressurize the canopy more while it is still moving down and hasn't yet transitioned to forward flight. The down side of the enlarged V-Tec is that on delays of more than 1 second so much air enters the V-Tec and fills the canopy that the air starts to spill back out of the nose. This air spilling out of the nose drives the canopy backwards as it opens. This is very noticeable in the 2-3 second range, but the canopy was not built for any thing other than instant delays and does not back up on a 1 sec delay.

The lines were all shortened by 10% to increase the curvature of the canopy and therefore trap more air under the opening pack job forcing it through the V-Tec rather than allowing it to spill out of the sides.

The 5th Line was added to pull down more of the tail of the canopy while opening in breaks, another way of trapping more of that much needed air under the canopy. As this canopy was being built with a 5th line Mod it made sense retro fit the same mod to my FOX 265 so both my canopies would fly and flare the same way.

The Multi Bridle attachment was fitted to the FOX 245 as I have had very good results with it on my FOX 265 through out all my jumping. Both my FOXs have ZP top skins, a ZP pack job has less friction to hold it together and therefore can deform / come apart as it is lifted to line stretch if not done evenly. Not such a problem with F111 canopies as they hold the pack job shape better, but with ZP it makes a difference. With my Multi I get nice consistent on heading performance from my ZP top skin FOXs.

The idea was to build a dedicated low freefall canopy but one that once open would still out fly mountain taluses and flare acceptably. This canopy could be made to open / quicker but I need a balance between opening and flight

I also had APEX build me 2 dedicated PCs. A 48zp and a 52zp, both built with less reinforcement tape. The aim being to lighten the top skin of the PC's thereby enabling them to inflate quicker in lower airspeeds. These PC's will deteriorate and lose there shape in less jumps and will not take the forces involved in high airspeed openings, but they were not built for that use. I do not believe vented PC's are a good idea for very short delays as I believe all the air entering the PC should be trapped inside it and used to inflate it. These vents are used mainly to help stop osculation, if the PC is centered on the bridle and launched directly above the jumper the osculation is minimal.

Over the last year I have Freefalled 26 times from the same 173ft E with another 3 from a lower 160ft exit point on the same rock and a 1 sec delay off the Top exit at 190ft. I also have 1 freefall jump from a 143ft S.

Over Those 30 Freefall jumps I have noticed that the biggest variable in altitude used to gain an open flying canopy has been in the time it takes for my PC to inflate. This then directly relates to the time it takes for my pins to be pulled and my rig to deploy.

When Freefalling below 200ft I no longer jump and pitch the PC horizontally to the side as I do on higher jumps, I use one of 2 techniques:

The first and the one I have used the most is to pitch the "S folded" PC, normally a 48zp vertically up to bridle stretch using an under arm pitch. The PC is thrown as my second foot is leaving the object. For this I have always used a 9ft bridle. The aim of this pitch is to get the PC to bridle stretch vertically above me, just as I start to descend and therefore have the PC roll over and inflate as the tension comes on the bridle. This is where I have seen the 30ft variable. When it works well my pins are pulled just as the PC passes the exit ledge, but 1 jump in 10 my PC snivels past the exit ledge and fails to pull my pins for up to another 30ft. When Freefalling my set up from 173ft a 30ft lower opening still gives me a flared landing. But to come lower this variation needed to be minimized.

The second technique I have used is to wave the PC to pre inflate it and exit just as it reaches the top of its up stroke. If a 9ft bridle is used here the PC although left preinflated has a tendency to roll over and deflate before the tension from the bridle comes on it and it then takes time to reinflates it after the bridle has gone tight. To over come this I have started to use a shorter bridle when perinflating my PC.

For my low freefall jumps I close my rig with my bridle routed first to the bottom pin and then to the top pin. My exits on these jumps are very head high and this routing is therefore more logical to me. It also keeps my bridle away from any snag hazards like getting caught under the bottom of my container. My pins are well primed with low tension on the CYPRES material closing loops. My pin cover and riser covers are all open. The aim is to have the pins only just holding the rig closed.

The short bridle is set so with my PC attachment point in my hand at full arms stretch my bridle has just 2 inches of slack between the attachment point and the top pin where it exits the rig. With this set up I hold the PC in 2 fingers by its attachment point and wave it up and down 2-3 times. The exit is timed when I am happy the PC is fully inflated and approaching the top of its arc. I just step off below it.

I know a 9ft bridle was designed that way to keep the PC clear of the burble, but in lower airspeeds the burble is considerably shorter and I use a Multi bridle attachment so as soon as my pins are pulled I gain nearly 3ft of multi bridle before my canopy is lifted from the pack tray. I free stow my Multi, meaning I use no rubber bands to stow it, I just S fold it on top of the canopy as I close. I also prime my Multi Velcro so that the sheath is barely held in place.

Also consider how you unstow your breaks and what your off heading procedures will be. It has been talked about on here a lot, but remember if you decide to unstow your break when you are low to the ground, the faster and more you let them up the more your canopy will surge forward and dive. Learn to unstow them but with out changing the amount of breaks your canopy is flying in, then let your breaks off slowly until it is time to flare from what ever position you reach. At 173ft I rarely get the canopy to full flight, it is much more normal for me to only reach half breaks before I flare from there to land. Small heading corrections can be made by letting you breaks up unevenly. There are times when I am too low and the only option is a gentle rear riser flare and accepting a rolled out landing. Preplan your off heading procedures. On the objects I have been jumping I decided it is better to strike the object with a little equal rear riser input and slide the short way to the ground, than it is to toggle or rear riser turn the canopy into the floor. All I am saying is think it through before the jump and don't just react the way you would when opening on your higher objects you could make things worse. I corrected a 90L with a little too much input off the 173ft E and ended up flat on my back in the Talus Think your options though before hand.

Body armour? Your jumps your choice, but I have hit the talus 4 times off that E.
1) Bad body position.
2) Brakes set too deep, opening stall never corrected,
3) 90L over corrected on risers,
4) unknown 90L from the 160ft exit, where I hit the talus 120ft below the exit point diving the canopy after releasing too much breaks to try and drive clear of it.
So far I have kept walking away mainly thanks to my armour.

There are 2 videos posted on the U-Tube site at:
~~http://www.youtube.com/321eyaba~~ (defunct)

The first is my modified FOX 245 Freefalling from a S I lasered at 143ft. It is set up as described above including the short bridle and you will notice me preinflate the PC before exit. I do not unstow my breaks but use a little rear riser flare and role the landing. There is about 2mph tail wind blowing under the S

The second is a compilation of footage of me jumping the 173ft E. The first jump the offheading was caused I believe by bad body position. It was my first freefall at the height all I get to do is stop the turn on rear risers and flare a little before impact. Then there are various jumps. The Black canopy is my FOX 265, The Red canopy is a FLICK 280, The Yellow canopy is a FLICK 242. All these jumps you see me throw the PC up on exit. The last 2 jumps are different angles of one jump. The Blue canopy you see is my Modified FOX 245 and I am jumping a 48zp PC on my short bridle, but instead of preinflating it I lay it over my hand before exit. That worked beautifully for the jump in the video but hesitated on the second attempt. That is when I started preinflating the PC.

I only have 30 Freefall jumps below 200ft, a lot of them were solos with no video evidence and therefore a most of what is above is based solely on my feeling of how the jumps went. Any questions are welcome PM me or email me or reply here, but please do question everything before you freefall low objects and if you do work your way down slowly. Anything you can add or disagree with please feel free.

Don’t not just go and take your normally packed rig and go and throw a 173ft exit point. I have heard of it working but the outcome may not always be so favorable.

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