SIGMA II 370 TANDEM MAIN

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370 Specs:

1. Wing Span: 33.1 ft.
2. Wing Chord (End Cell): 8.48 ft.; Wing Cord (Center Cell) 12.64 ft.
3. Aspect Ratio: 2.724:1
4. Canopy weight: 16.5 lbs.
5. Pack Volume: Will fit in TV 13,14 and Sigma containers
6. Recommended weight range: 200 - 500 lbs.
7. Max suspended weight: 500 lbs.
8. Material type: Zero P3, except F-111 Slider
9. Line type: A/C = 600 lbs.; B/D = 900 lbs.; Lower Control lines = Outboard 1 500 lbs; Inboard 900lbs

Flying the Sigma Tandem Canopy

General:
This document compares the openings, flight performance, handling, and landings of the new Sigma II 370 tandem canopy to the EZ-384.

The Sigma II 370 canopy is an all zero-porosity elliptical nine cell, quite a bit more elliptical than the EZ-384. It is sized slightly smaller than the EZ-384, mainly to make packing in the same sized container a little easier.

The primary goal of the Sigma tandem canopy developmental program was to provide exceptional opening and landing performance while reducing the pilot's workload as much as possible. Keeping toggle pressure low while maintaining great landing performance was quite a design challenge, and the final result is a canopy that does the job nicely while being quite fun to fly. It is definitely a pilot's canopy that requires good piloting skills. It is not a sluggish truck, but rather a spirited workhorse.

Packing:
Now that zero porosity fabric has been in the field for more than ten years, the methods to keep control of an all zero porosity parachute during the bagging process are well known..

During development, most of the pack jobs were well-organized pro-packs, with the canopy S-folded between line-groups and the canopy S-folded normally into the bag. Sloppy pro-packs normally resulted in more dancing around during the snivel. Controlling the line tension throughout the packing process is important, as for any tandem canopy. Rolling the nose is not required.

Conventional flat packs were also used with good results as well, though bagging the canopy was more difficult for some packers. We do not recommend roll packing or flop-packing, as this type of pack job can lead to inconsistent openings.

Openings:
Openings are similar to the EZ-384, with a slightly longer snivel and a slightly slower inflation. Assuming the pack job is reasonable, the Sigma tandem maintains heading during inflation quite well.

Straight flight at full glide:
The Sigma II 370 Tandem has a flatter glide than the EZ-384, with a lower descent rate and a slightly higher forward speed.

Straight flight in deep brakes:
The Sigma Tandem will float along very well in deep brakes, with a very low rate of descent and a moderate forward speed.

Turns:
One of the most dramatic differences between the Sigma II 370 and the EZ-384 can be found in the control response in turns. The canopy is very light and agile on the controls in turns. All of the early users of the canopy commented on how fun it is to fly..

Medium banked turns with primary control toggles:
The toggle pressure is very low during the initiation of a typical turn on the Sigma II 370 Tandem. Turns from full glide require much less toggle movement than on an EZ

Highly banked turns with primary control toggles:
The turn rate really picks up when the toggles are depressed even a few inches farther than is needed for a medium bank.

Turns with both primary and secondary control toggles:
Turning with both primary and secondary toggles results in a somewhat flatter turn for a given turn rate.

Landings:
Very nice! As is typical of modern canopies, the Sigma Tandem is designed to level off into a ground skimming landing, stopping the descent rate entirely, well before the forward speed is minimized prior to touchdown. It is not designed to plop your student onto the ground vertically like an old seven cell accuracy canopy, but it will do a passable job of landing this way if you have a pretty good headwind.

Control range:
The canopy has a similar control range to an EZ-384, but the toggle pressure builds up less during the flare, and this build up occurs in a lower part of the control range.