

Dunton Taylor Delta Box Kite

Seen on Kitebuilders forum (www.kitebuilder.com). Some insights to the history of the Dunton Taylor Delta Box.

First, the spar sizes in the plans are optimal for the 31inch size (height), PROVIDED you use Graphite rods. Actually, you could use fiberglass for the box as they serve about the same purpose as spars in a sled. There is very little bending as the fabric distributes the load from the bridle.

Even FG in the leading edge is probably ok as there isn't a lot of bending there either but it will be heavier, which is a consideration when flying indoors (more about that later). But the spreader is a different matter. Graphite, or some other solution like loops, is crucial here. Even a very kite-friendly breeze of 10-12mph will cause significant bowing in a FG spar of this size. With Graphite the kite is just getting it's first wind at that speed. Laughing With the plan spars I've flown this kite in 0 to 25mph winds. Granted, it is REALLY ugly at 25. Even Graphite bows a lot at that speed. But the bowing is important as it acts as both a shock absorber and a wind pressure relief valve which helps greatly with stability.

It would be worth an experiment to buy a 125 Graphite rod and try it, but don't run it through the loops. Compare that setup with the FG and loops. I believe you will find that the kite flies more steadily in strong, gusty winds with unrestrained Graphite than it does with FG and loops. In really high winds, the FG is going to bottom out on the loops and will no longer be dumping wind pressure as well. I expect this will result in a squirrelier flight. I might be wrong, but it's certainly easy to test now that you already have the loops.

As far as scaling, this kite scales very well, as do all deltas. A bit of history on the DT Box. Originally, my Dad found plans in a magazine for a kite called a Hod Taylor Box Delta (which was really just a Delta Coyne). Hod Taylor lived in Ohio (he died in the late '80's I believe) and discovered kiting after he retired. By this time his eyesight was failing so he build these box deltas large (12-20 foot trailing edge) so they certainly do scale.

My Dad, on the other hand, was a tyvek, tape, and hardwood dowel kind of guy. So he scaled Hod's plans down so that a 1/4x36 inch dowel would serve as the spreader. This is where the 31 inch height came from. He also made a few other modifications to the Taylor plans. He cut off the wing tips to give it a different look, and because building a box section with a hole in it was harder than building a solid box, he tried solid first. He found that a solid box with equal length spars did not promote very good air flow through the box, so he shortened the front spar which helped quite a bit.

The trailing edge was initially left straight across and he flew this kite, made of type 14 tyvek, for 50 or more hours. This resulted in a rather tattered trailing edge, particularly near the middle. So, one day he took his scissors and applied the TLAR curve to the trailing edge (That-Looks-About-Right). This removed the frayed tyvek and gave the kite it's ultimate look. This trailing edge mod also had the beneficial side effect of moving the stabilizing flutter from the middle of the kite out to the tips where it is a bit more effective.

My Dad built smaller versions of this kite, but never larger as that would have required larger, longer dowels. He once built a version using 1 mil mylar with a 1/8 inch dowel for the spreader. This was his ultra-light. He won the altitude sprint at the Wright Kite Festival in 1982 or 83 with this rig. The winds were about 2-3mph and everyone else's kites refused to climb even a little. He had a homemade winder with 3 lb mono line and as he would wind backwards, the kite would dance up into the sky. After about 20 seconds of watching this we (the other competitors) gladly conceded him the victory.

As Harold mentioned, I did build a slightly larger DT once. It was 40 inches tall based on the width of the nylon we could get back then. I used FG tubing but don't remember the size off-hand. It flew fine outdoors, but indoors was like flying a truck as opposed to a sports car, and flying these kites indoors is where the real fun begins. I really think the 31 inch size with Graphite spars and polyester sail is just about perfect for indoor flying. It is quick, nimble, climbs briskly and sails nicely. If you haven't tried it, find a basketball court and give it a go.

Here's my technique for indoor flying. Spool off about 50-75 feet of line and leave it lying on the floor. Your left hand (I'm a rightie) is mostly for keeping the line out of your way while the right hand controls the kite. To launch, I typically have the kite beside me lying on the floor on it's back with the nose facing behind me. My right hand holds the line at about waist height. As I step forward, I pull the kite up behind me and with a circular motion, throw it out in front of me. As it loses momentum I put gentle pressure on the line with my right index finger to spin the kite around. Pulling in line quickly then causes the kite to climb up 15-20 feet and sail behind me. Basically, you control the kite with quick pulls, light line pressure, and arm motions (for axels and figure 8s).

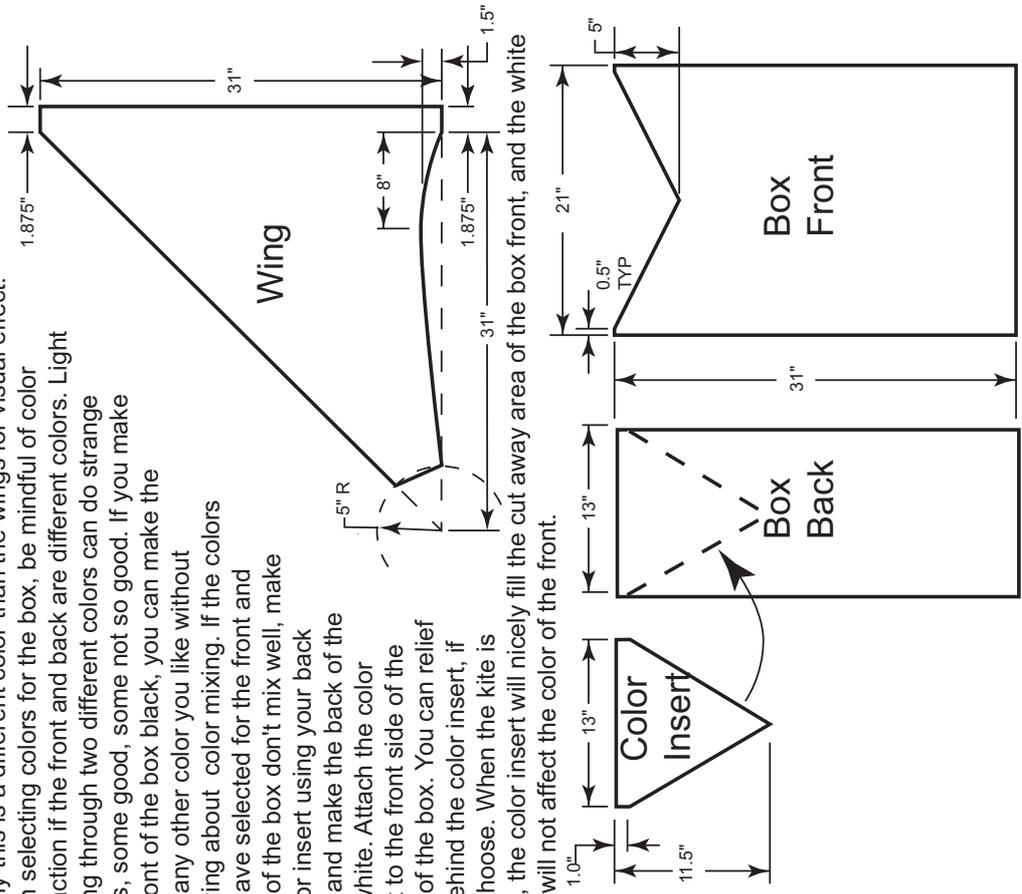
If you haven't built one, you really should. If you have questions I'll be glad to answer them. You can email me at cvdunton@visi.net.

Sorry about the length of this post. I hope it was of some interest.

Charlie Dunton

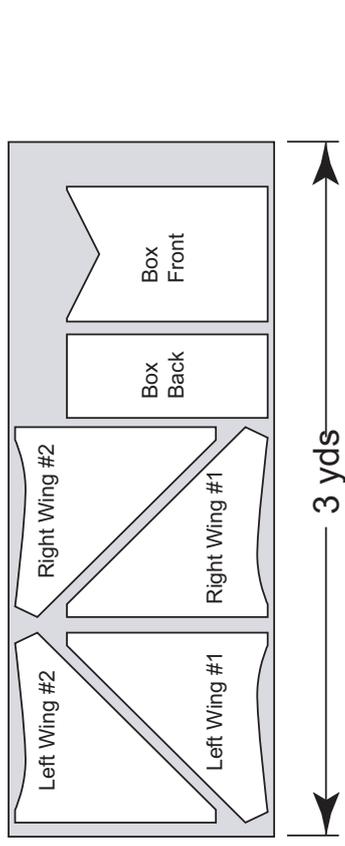
Dunton-Taylor Box Delta Pattern

All dimensions shown are finished dimensions. These plans call for edge binding and a separately attached leading edge. If both sides of your fabric have the same finish (most don't, North Cloth's impregnated finish fabric being one exception), you can get a set of wings from a yard of 41" fabric. Otherwise, you will need two yards, but you can get two sets of wings from 2 yards of fabric. The front and back of the box section will require an additional yard of fabric, but usually this is a different color than the wings for visual effect. When selecting colors for the box, be mindful of color interaction if the front and back are different colors. Light shining through two different colors can do strange things, some good, some not so good. If you make the front of the box black, you can make the back any other color you like without worrying about color mixing. If the colors you have selected for the front and back of the box don't mix well, make a color insert using your back color and make the back of the box white. Attach the color insert to the front side of the back of the box. You can relief cut behind the color insert, if you choose. When the kite is flying, the color insert will nicely fill the cut away area of the box front, and the white back will not affect the color of the front.



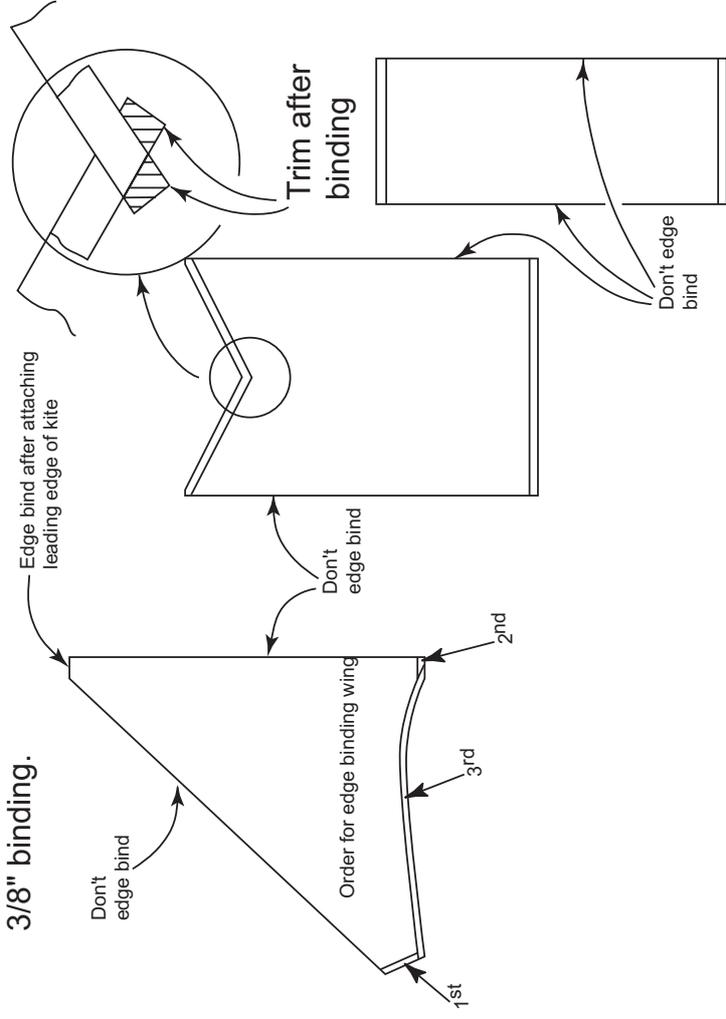
Dunton-Taylor Box Delta Layout

Layout where front and back of fabric are different.

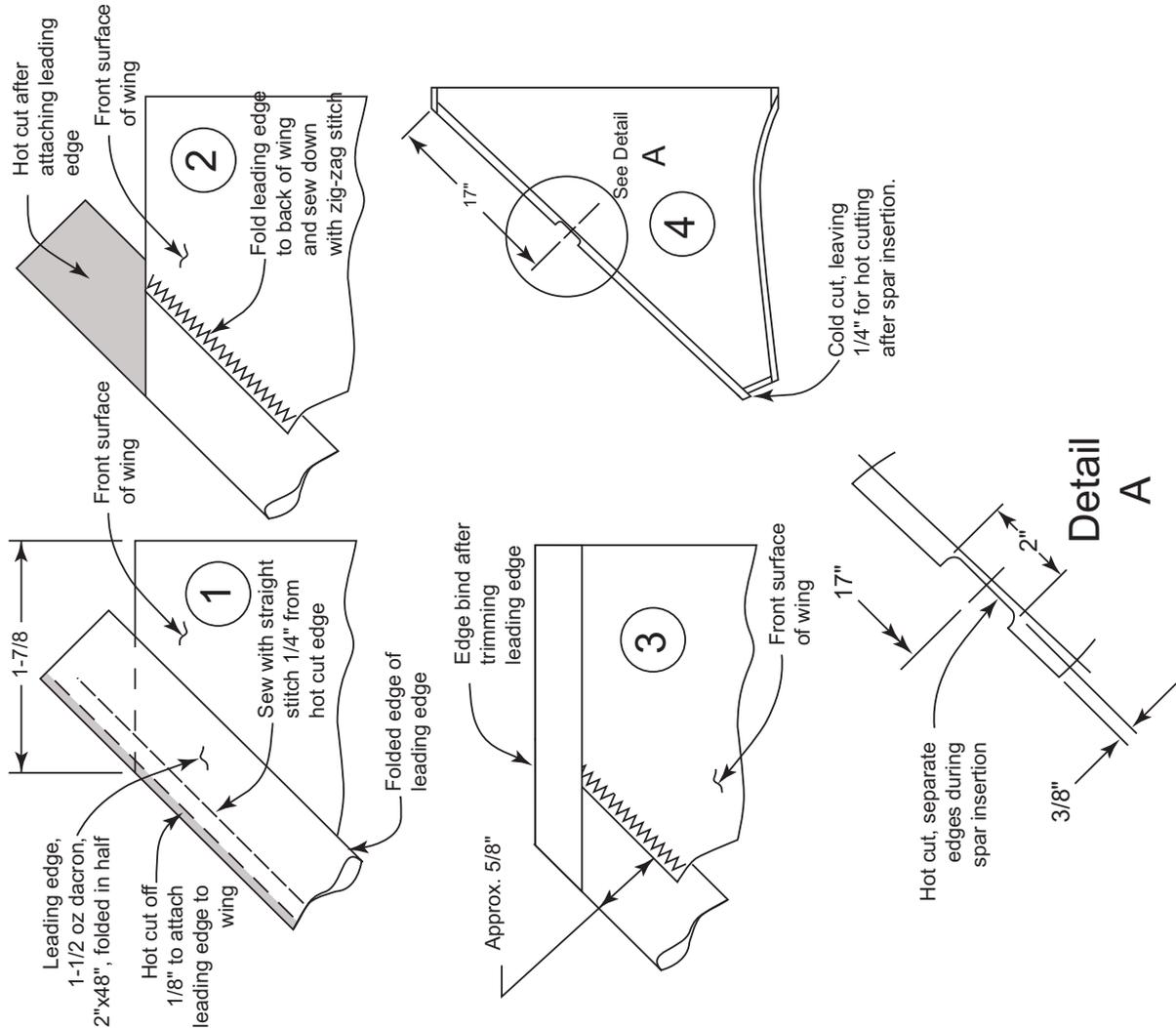


Edge Binding

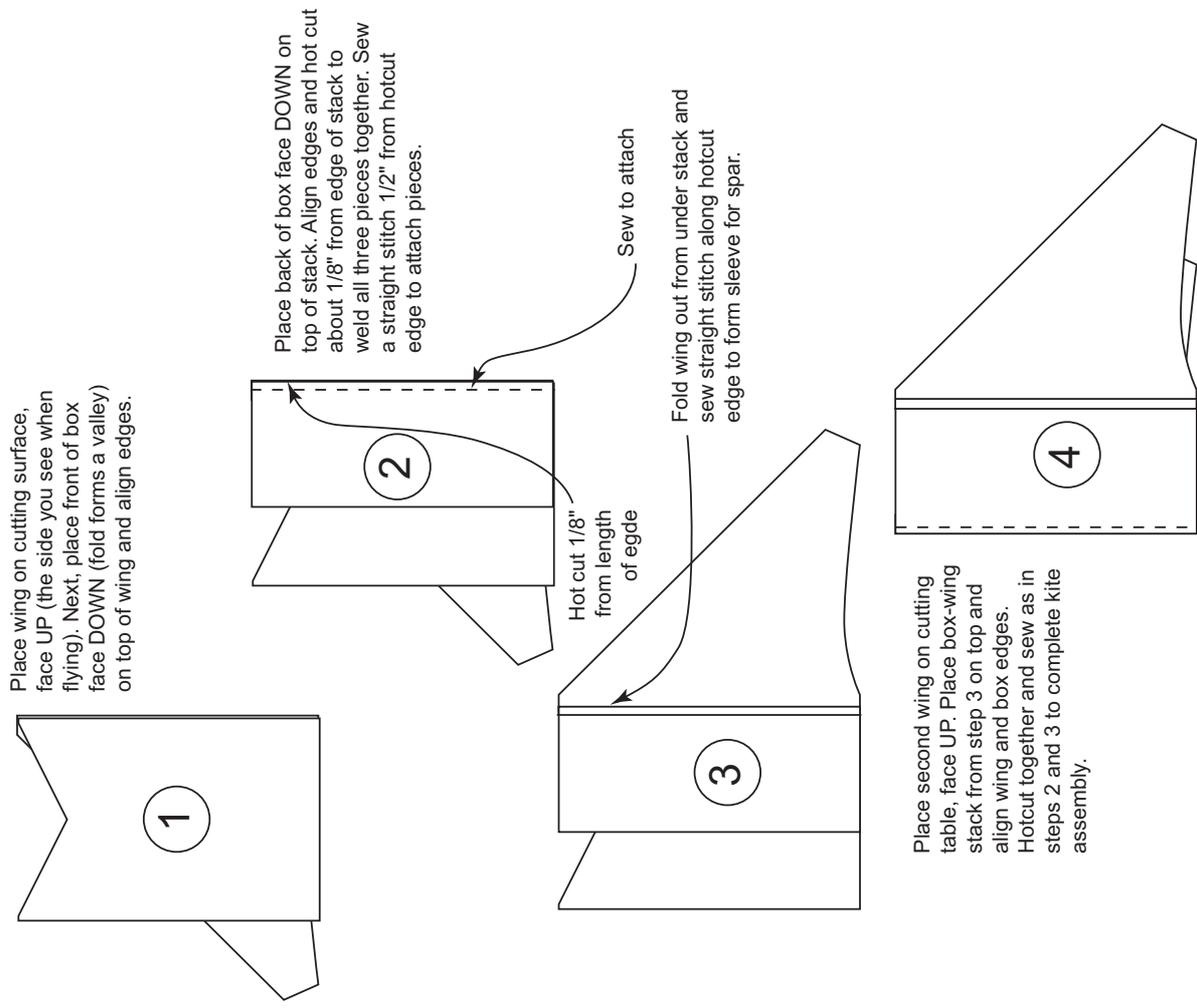
From 41", 3/4 oz nylon, cut 5 strips 3/4"x41" - Fold in half for 3/8" binding.



Dunton-Taylor Box Delta Leading Edge Attachment:



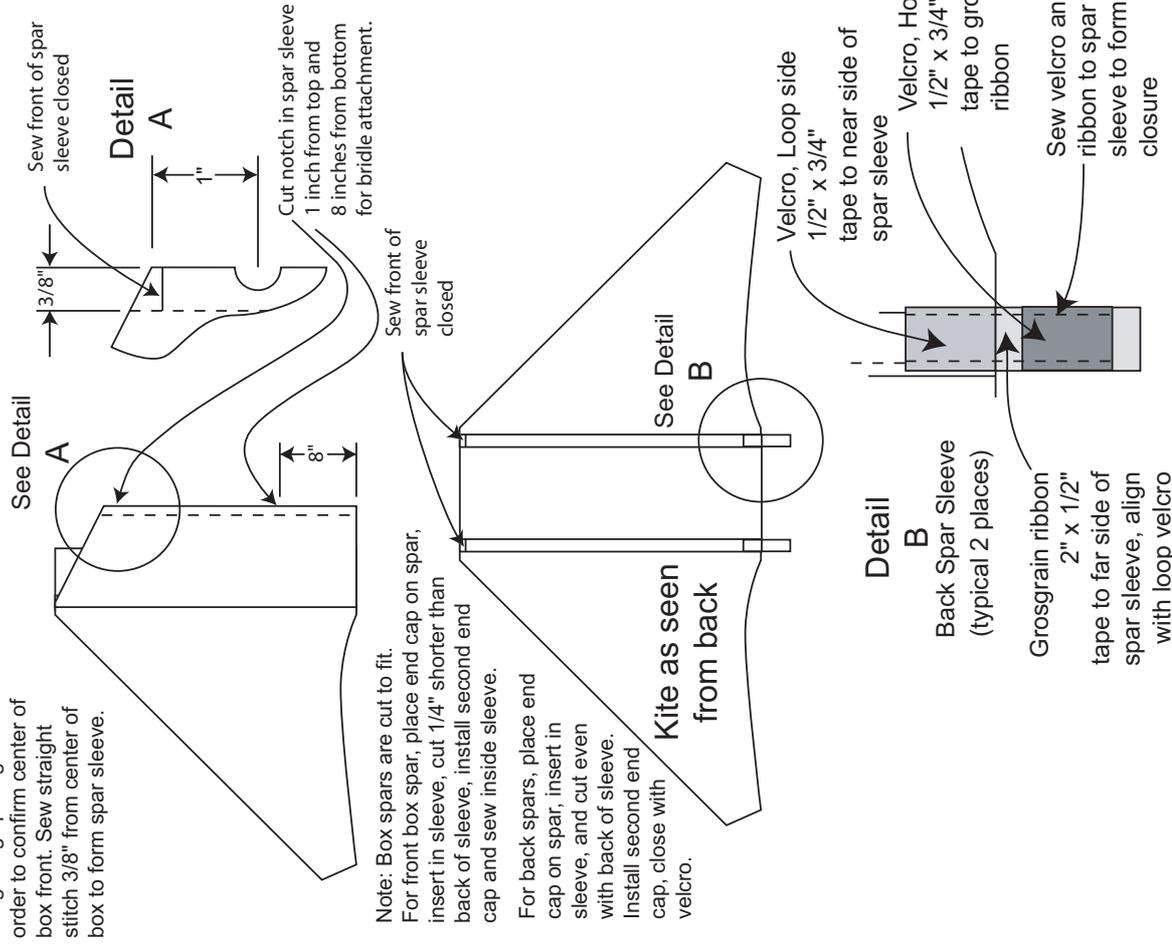
Dunton-Taylor Box Delta Sewing Together



Dunton-Taylor Box Delta

Spar sleeve details:

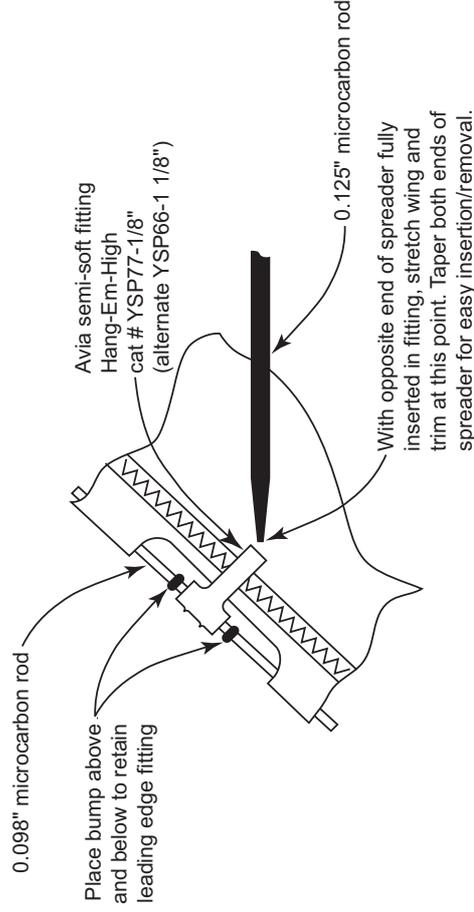
Bring wing tips together in order to confirm center of box front. Sew straight stitch 3/8" from center of box to form spar sleeve.



Dunton-Taylor Box Delta

Framing:

- Wing Spars — 0.098" graphite rod, 2 @ 31"
- Box Spars — 0.098" graphite rod, 2 @ ~31", 1 @ ~26"
- Spreader — 0.125" graphite rod, 1 @ ~36", trim to fit



Leading Edge Details

