

THE BRUHZILIAN

An adaptation of a Brazilian fighter kite design by DAVE YOUNG

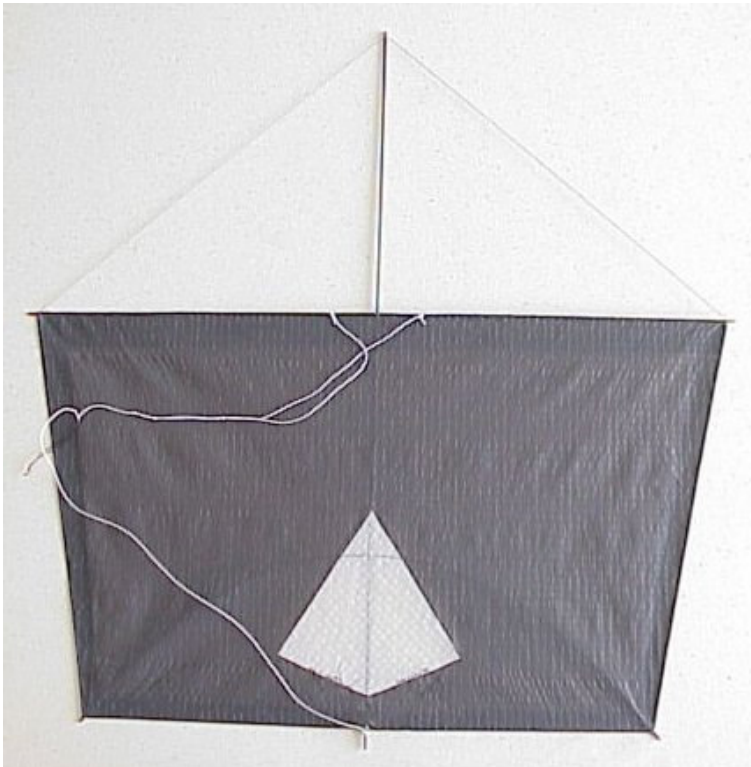
The details, photos and full sized template are presented by Bruce Lambert with Dave Young's permission:



A few years ago, during the process of Dennis Crowley and me creating The 'Fighter Kite Book', I met through email, a very talented fighter kiter from Oklahoma, Dave Young. He had made beautiful fighter kites from plastic films using a heat-sealing process to bond the film!

In 1998, at Muncie, IN at the AKA convention, I met Dave in person and had the opportunity to see first hand, not only what a great competitor and good hearted person he is, but also what a creative kite maker he is!

He had a boxful of kites, all original, many of them made from tissue and bamboo, some made of plastic films of many varieties, but all beautifully made and all were competition class fighters!!



In 2002 I received an unexpected package in the mail and in it was a Dave Young original...his BRUHZILIAN kite.

Dave has been fascinated by and builds traditional fighters from all over the world, and came up with his version of a Brazilian; he calls it a Bruhlizian. I think it is a cross between a buka and a Brazilian, but whatever it is called, I had first heard about it in an email from Dave Bacque in Houston, who had been give one of these beauties and was very impressed.

In the package, Dave included a template and instructions for me to make the kite

plus he included two finished kites, one with an Orcon skin and carbon fiber spars, one with a tissue paper skin and bamboo spars! Both fly great!!

As you can see to some extent in the following two photos of the kite ready to fly; the kite is under tension when it's flown. The line that runs between the ends of the horizontal leading edge spar and the top of the nose of the spine creates that tension. Here's how it works; before flying the kite, you wrap the line that runs from the end of the leading edge spar to the top of the spine around the top of the spine at the knot. You do this with the line on each side of the spine and use one or more wraps to create a slight bend in the both the leading edge spar and the spine, usually only one wrap with each line will suffice. This is one of the most unique aspects of this kite; the bowing in two directions from the application of tension in one place. And I think it is this slight bend in two planes that gives the kite its wonderful flight characteristics!



When I first flew the kite, I was really impressed with its speed, the way it turns and spins, its ability to quickly change direction, its ability to get way beyond the edge of the wind window and how lightly it pulled on the flying line! When flying this kite in 8 mph winds it feels like there is only about a 3mph wind blowing on the kite, it has that light a feel to it.

After flying the Bruhzilian, I knew many other fighter flyers would love to have the opportunity to make and fly it too. So I asked Dave if he would mind if I took some photos and wrote some info to put on the FKC web site. He was delighted I wanted to do it. Thank goodness Dave likes sharing his kite ideas.

So here's some details on how to build Dave Young's Bruhzilian.

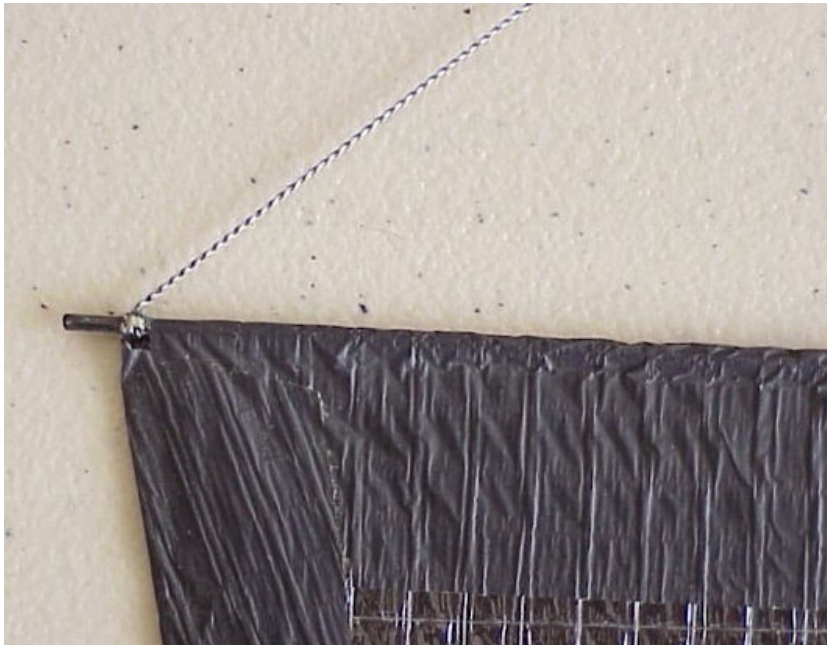
I hope in the various photos of the finished kites you can see enough of the details to assist in your building this kite. Following the photos there are 3 pages that when printed, cut out and taped together make one half of the full sized kite template.

The leading edge spar and the lower bent spar are both tied to the spine in the center of the spars.

One aspect of this kite that is not readily apparent is the perimeter line Dave installs in the hem of the kite skin. Dave actually ties the leading edge spar and the lower bowed spar to the spine first with the perimeter line. He wraps the continuous perimeter line around the end of each spar, tying each connection point with clove hitches. He starts with a clove hitch at the bottom of the spine with an equal length of line on the right and left. The line on each side of the spine then goes to the lower bent spar ends, then continues to the ends of the leading edge spar and ends at the top of the spine nose. He wraps and ties the line as he goes and uses a spring clothespin to help hold the various points on his template while he is constructing the perimeter line. The template is made of heavy cardboard and is an integral part of the construction method.

You'll notice that all the spars extend beyond the frame or skin of the kite by about 1/4" on each side. This is to allow a tie point at each end of each spar for the perimeter line.

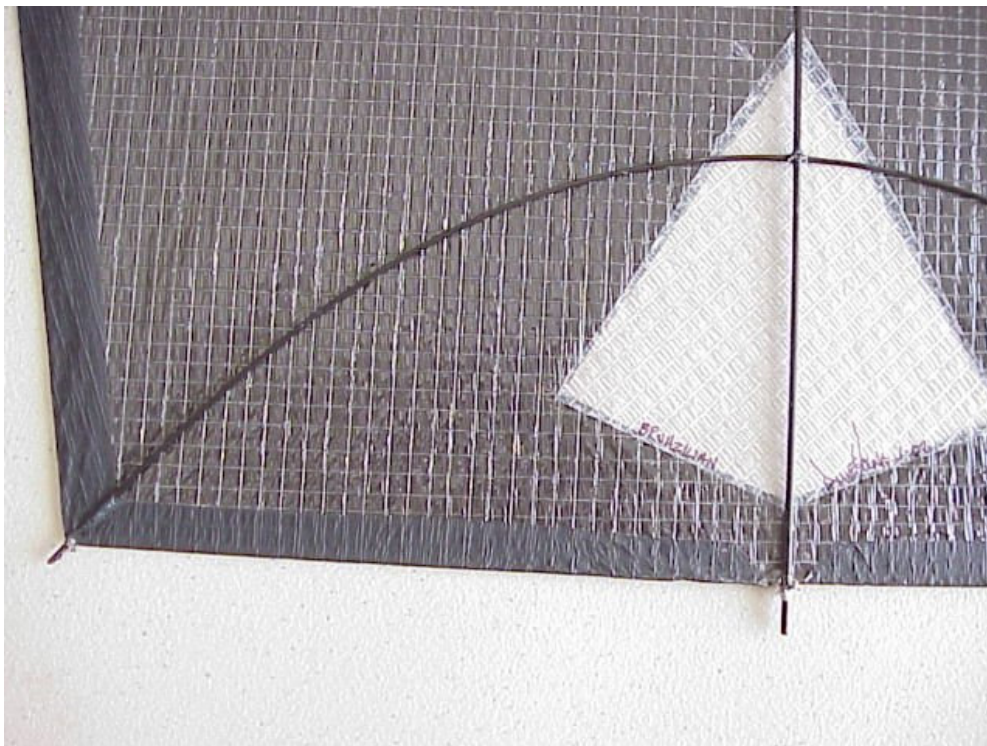
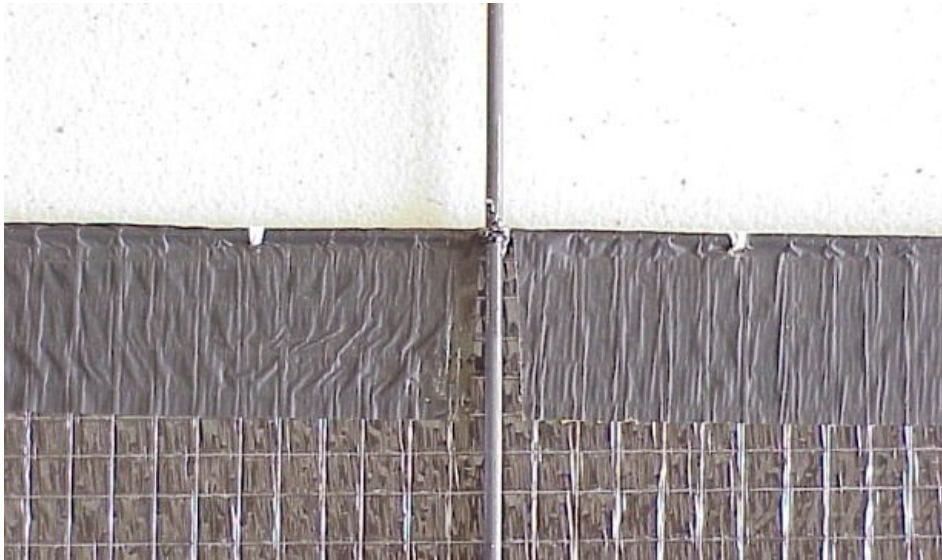
When the perimeter line is tied, he checks to verify the tension on the right side and the left side are the



same and that the lower spar is bowed equally right to left, and will adjust the clove hitches to create uniform tension. When the tension is uniform, he puts a drop of CA glue at all the knots and at the connection of the spine and the leading edge spine and at the connection of the lower spar and the spine.

NOTE: Both the leading edge spar and the lower spar are against the skin of the kite, with the spine being held away from the skin by both spars. In other words, the spine is in back of the spars, not in front as is done in making a buka.

When Dave's completed the perimeter line, he simply lays the frame on the cut out kite skin and folds and glues the hem of the kite skin over the perimeter line located below the leading edge spar and around the leading edge spar and he is ready to bridle the kite.



The bridle is a 3 point bridle. Dave puts the points of the upper yoke of the bridle 1" either side of the spine and the lower bridle point is the very bottom of the spine. You can see on the template, the "sweet spot", Dave identified for the location of the tow point of the finished bridle.

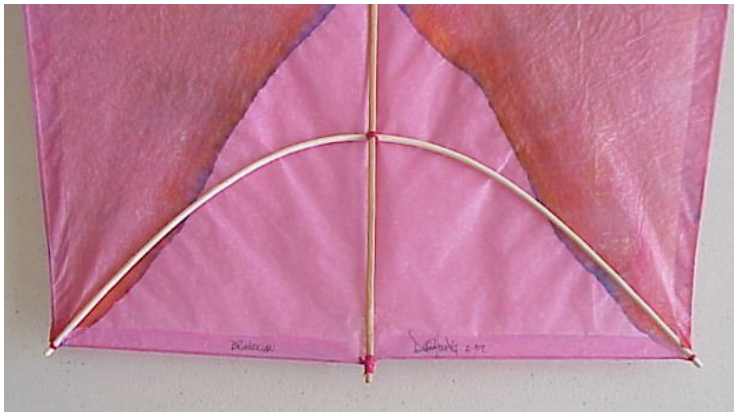
Dave suggests using 0.05 carbon rod for the leading edge and lower spar and 0.07 carbon rod for the spine. Using these sizes will allow the kite to fly well in 5-12+mph. Dave has done quite a bit of experimenting with various carbon rod sizes and combinations and likes the combination above the best for most winds. For ultra light winds he prefers a bamboo and tissue version.

If you have questions you can email me at kitefighter@nwinfo.net or Dave Young at fighterdave@cablone.net

I hope you make this wonderful fighter and have a grand time flying it!

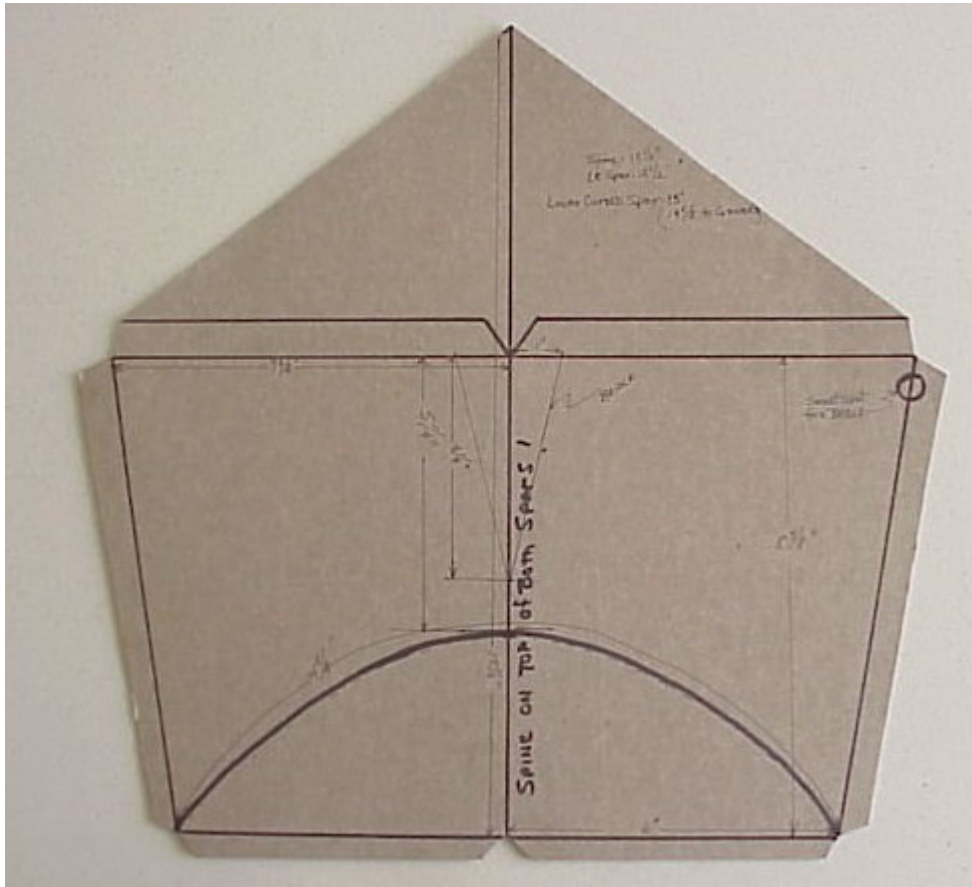


This is what the skin shape looks like before it's attached to the kite frame.

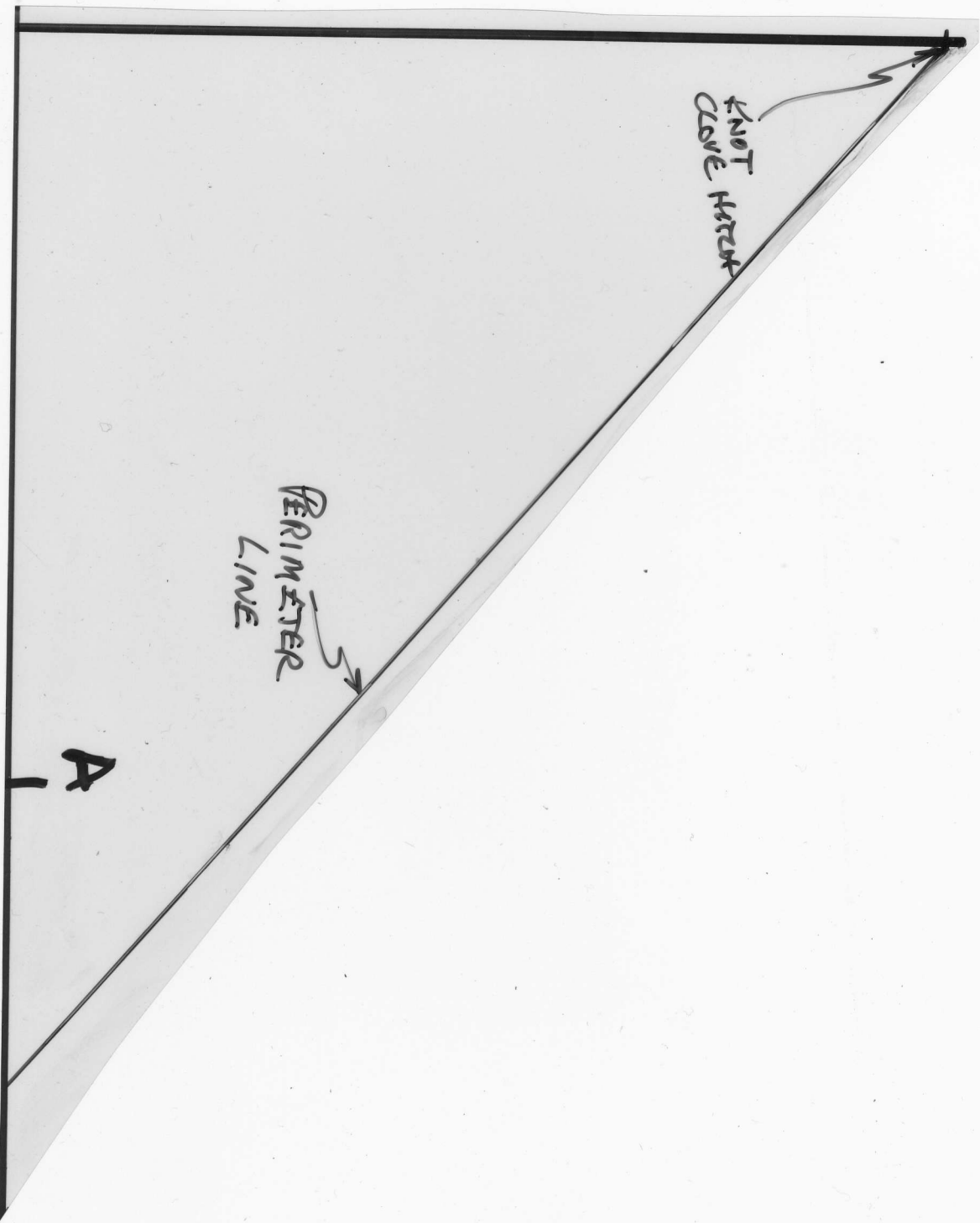


This is a view of the back of the bamboo/tissue version. The construction is the same with both versions.

Following is a photo of the heavy cardboard template Dave uses. The dimensions are written on the template although difficult to read in the photo. The template is the guide for cutting the skin and it is used as a building jig. It allows you to align the spars properly and hold them with a clothes pin to the template at the correct locations before tying with the perimeter line. This way the lower bent spar isn't under tension while you are trying to tie it, the clothes pin is holding it securely to the template.



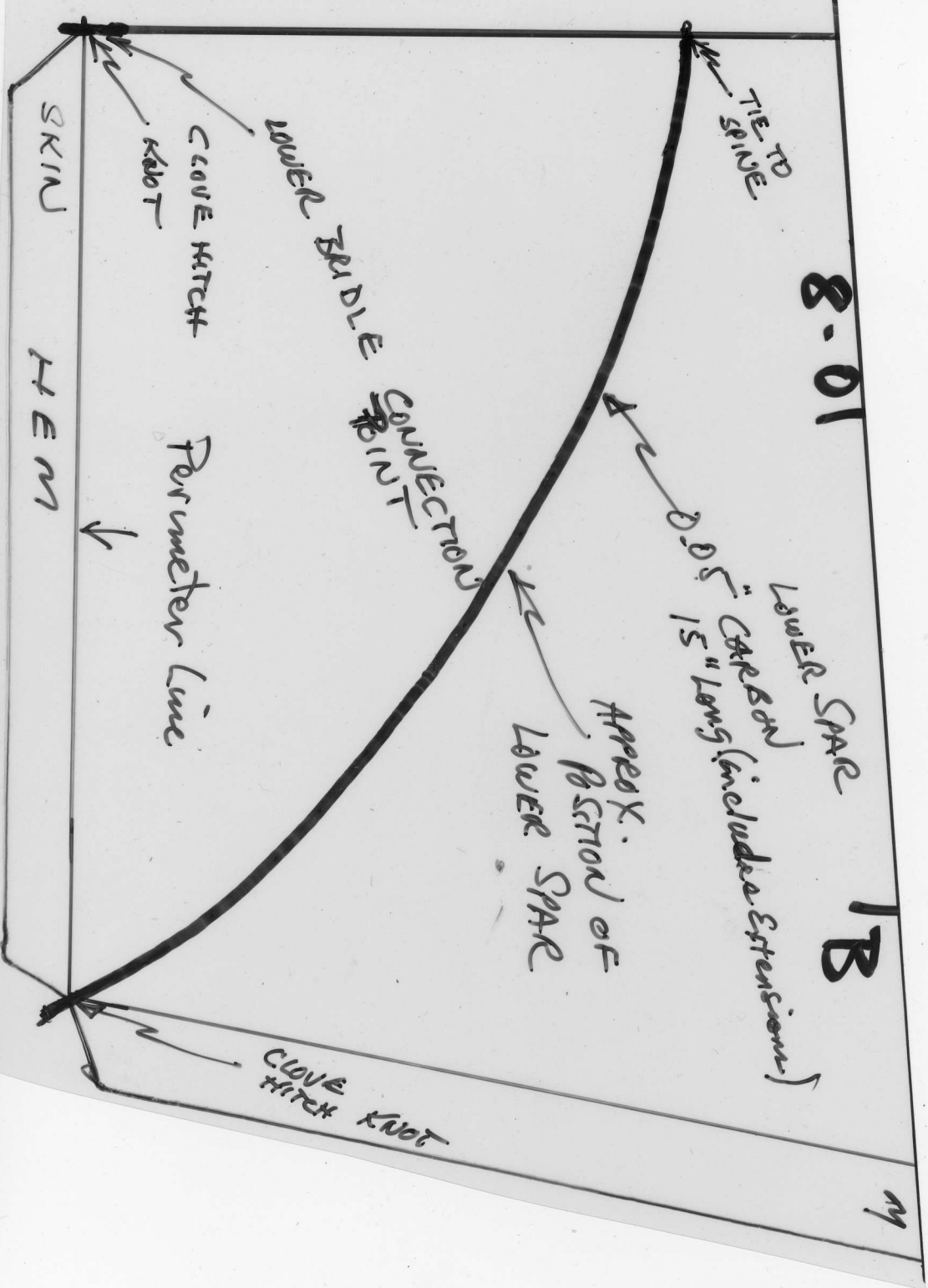
The following 3 pages are the pieces that make one half of the full sized template. When making the template pieces, I traced around Dave's original template shown in the photos.



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PERIMETER
LINE

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BRUNZILIAN
By Dave Young

