

## **'SLIK'Kites' (acronym for SINGLE LINE INTERACTIVE KITE) (assumes some knowledge of basic kite making skills) By Douglas Cann**

During the past few years I have been experimenting with different styles of single line 'fighter' kites after I was introduced to the finer points of North American style fighter kites. I was flying kites at the Fort Worden parade field when another kite flyer gave me a North American style fighter kite. Although this kite was very similar to the shape and style of a traditional Indian fighter kite, it was constructed from a material called Orcon and used a 0.05" carbon fibre rod for the bow and a piece of bamboo for the spine.

I have since experimented with various shapes and styles and as I was using 'western' materials when building my kites, I wanted to achieve a kite design that when flying was more reminiscent of a turn of the century Eddy or Malay bowed kite. As a result, my final design was a little taller and slightly narrower than a more traditional fighter kite.

Although this design, whether constructed from Orcon or ripstop nylon is quite stable, it also offers the benefits and maneuverability of a more typical fighter kite.

I use either Orcon or ripstop nylon for the sail and carbon fibre rods for the bow and spine. Although Orcon is a material that resembles Mylar, it has a grid of fine nylon threads applied to it that makes it very strong and almost tear proof compared to Mylar materials. Orcon is used by the airline industry in the interior of passenger jets as a protective film between the outer skin and the interior plastic trim of the fuselage.

The kite begins as a piece of material that is approximately 24" square. A line 22" long is drawn for the spine and a 20" wide line for the location of the wing tips is drawn across the material at right angles to, and intersects the line for the spine 8" down from the tip of the nose.

I use various diameter carbon fibre rods for the bow and spine depending upon the wind speed. Generally I use a 0.05" bow with a 0.06" spine or 0.06" for the bow and spine for low to medium winds and for stronger winds above approximately 7 mph, I have used combinations of 0.06" and 0.07" carbon fibre rods for both the bows and spines. When there is no wind and for use indoors, I have used 0.05" for the spine and 0.04" for the bow.

Although I measure and cut the leading edges of the kite first, I re-check and trim the leading edges if necessary to the same length after installing the spine with contact adhesive and hemming the leading edges with the double-sided tape. I find this method a little easier than using a pre-cut 'half template' as a guide.

Upon completion of the kite, the trailing edges from the wing tips down to the tail are cut to a 30" radius curve in order to improve the flying and appearance of the kite when it is in the sky.

Along each leading edge I place two parallel pieces of Scotch 'Permanent' ½" wide double sided adhesive tape that are separated by slightly less than a 1/16<sup>th</sup> of an inch. The piece of tape that is attached to the outside edge of the sail is then folded over to stick to the inner piece of tape in order to create the ½" wide flat leading edge 'hems'. The double layer of double-sided tape adds some stability and stiffness to each of these leading edges.

Once the leading edge hems have been trimmed to the same length, self-adhesive photo corner pockets are stuck to each wing tip in order to hold the bow in place. Small pieces of double-sided tape are wrapped around the pockets for additional support of the bow at the wing tips.

In order to add the small amount of bend that is required in the spine, I insert the top end of the spine all the way into a 5" long piece of aluminium tubing before the spine is glued to the sail. This will allow the appropriate bend towards the tip of the carbon fibre spine to remain in place. Unlike bamboo, a carbon fibre rod will not stay curved on its own, hence the piece of aluminium tube that is glued in place with crazy glue.

Once completed, the kite is approximately ¾" shorter due to the ½" fold along the leading edges.

The bridle is made from 20lb waxed Dacron line and is a standard 'three point' bridle. This allows adjusting the towing point along the direction of the spine and from left to right across the bow in order to fine tune the balance of the kite so that it flies straight when under tension from either pulling in the line or from the wind. The top yoke portion of the bridle is attached to the bow 1½" on either side of the spine and the bottom end is attached 7" up from the bottom tip of the spine. The yoke of the bridle is a loop that is approximately 9" long and the main part of the bridle is made long enough so that it will nearly reach the wing tips but not become entangled over the ends of them.

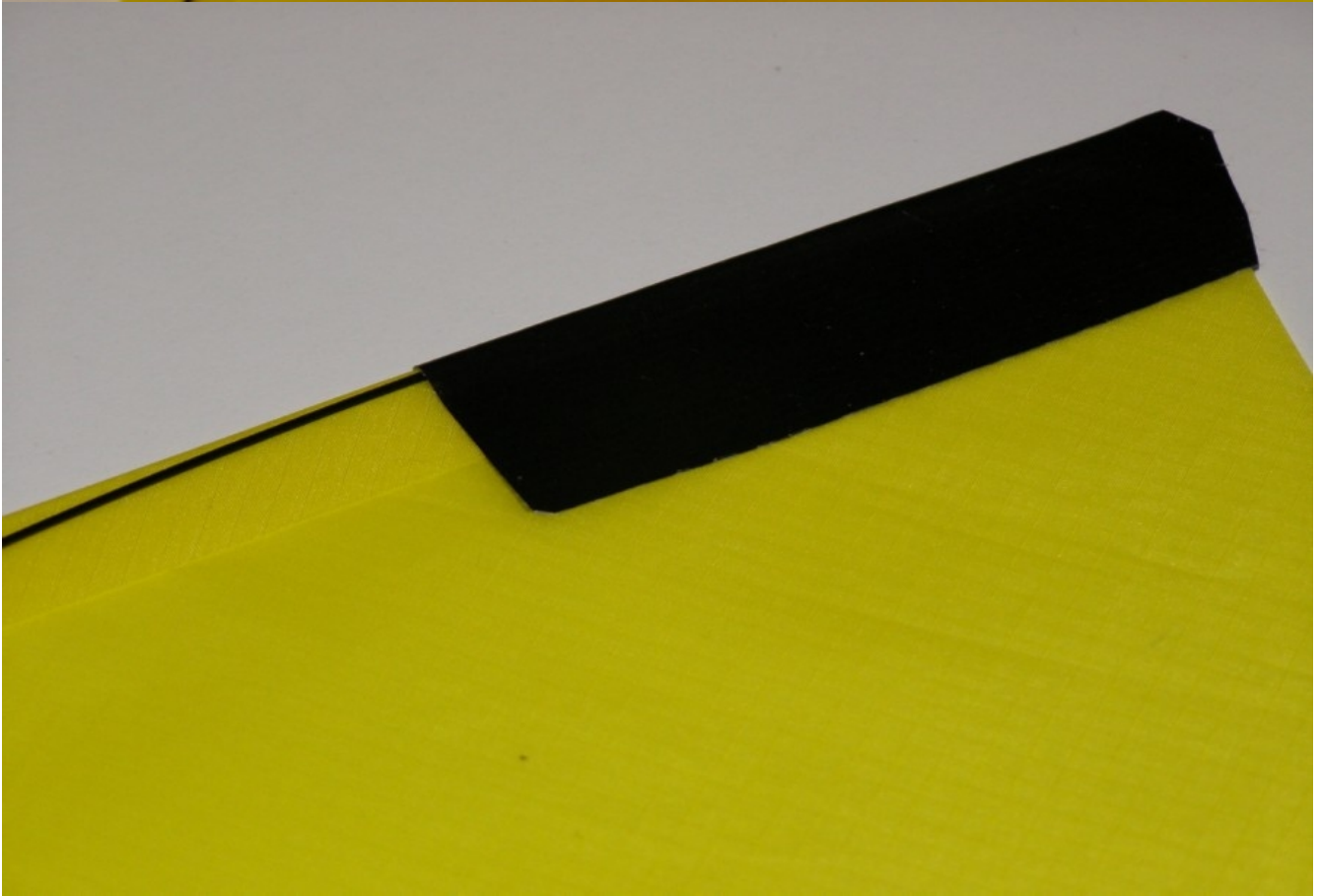
The carbon fibre rods are usually available at hobby stores and come in various diameters. There are two to a package in 24" lengths that is usually enough to make one kite.

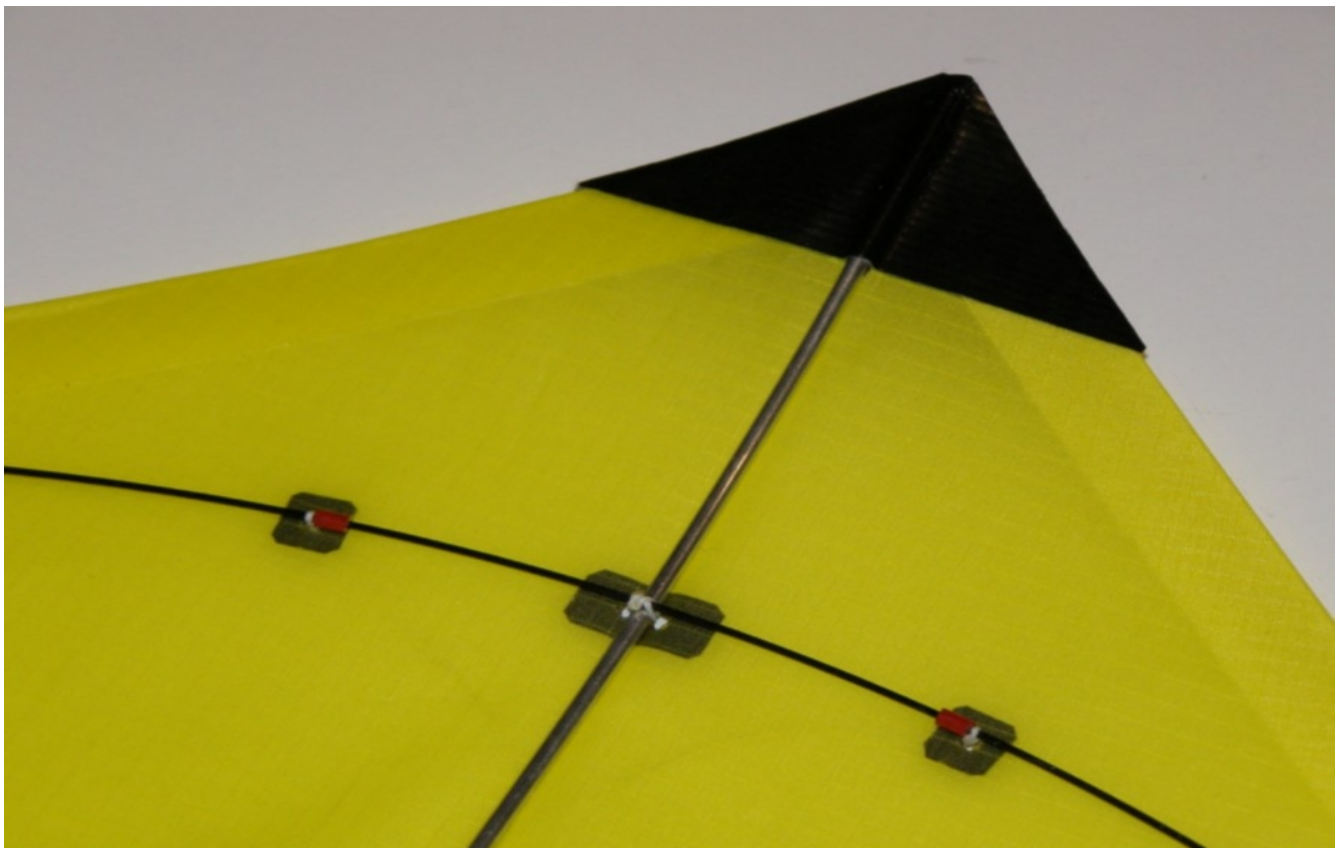
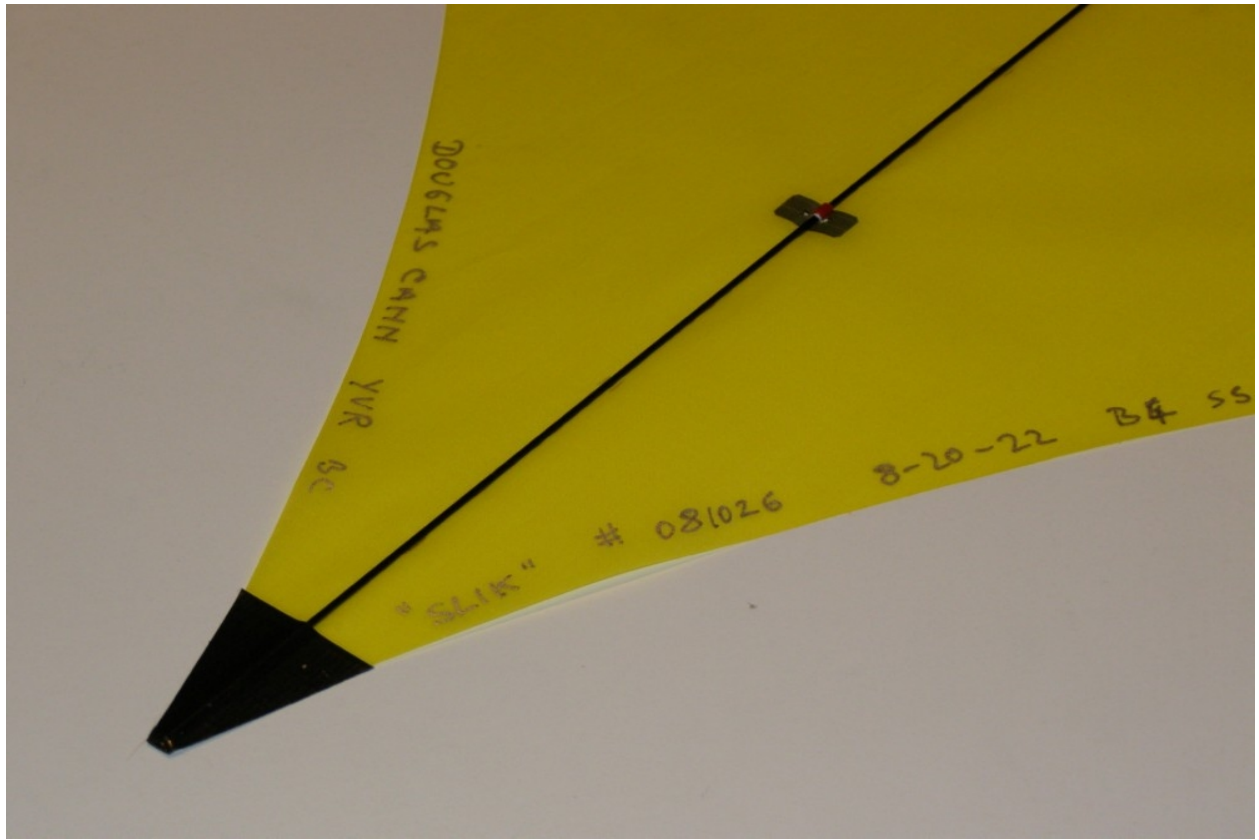
In order to protect the four tips of the sail, I place small pieces of black duct tape on both sides of the tip and tail of the spine and trim to shape with scissors. For the wing tips, I use a 3" piece of black duct tape that is folded in half along the leading edges and which also provides additional support for the ends of the bow where the photograph corner pockets are located.

The holes in the sail for the bridle are reinforced with small pieces of self-adhesive Dacron tape.

Please refer to the attached photographs that illustrate some of the foregoing details.

Happy Flying - Douglas Cann





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