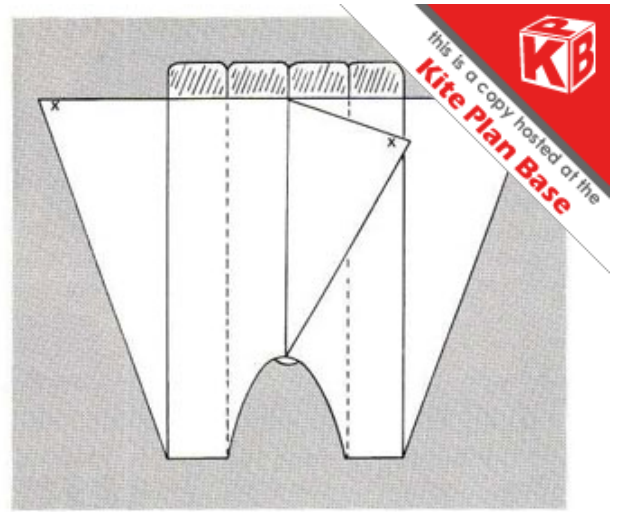
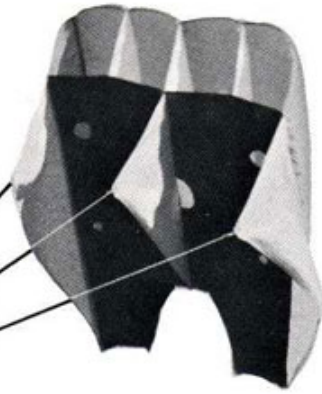


# Design Workshop

## THE FLOW FORM KITE

By Ed Grauel  
and Margaret Greger



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If you have enjoyed making and/or flying Parafoils, the great originals by Domina Jalbert, you'll be interested to know about a variant of the kite which involves several changes, permitting it to fly in higher winds without a drogue. The changes were evolved by Steven Sutton of Toronto and are covered by a U.S. patent.

To make the kite is a fine exercise with a sewing machine and isn't recommended for anyone not familiar with sewing two pieces of material together so that they both come out exactly on pre-marked straight lines. In other words, this kite is for sewing machine mavens.

### GENERAL TIPS

Lay all pattern pieces on the straight grain of the material. The top of the pieces in the layout will be at the top (leading edge) of the constructed kite.

Transfer pattern marks to the cut pieces. This makes it easier to follow seam and hem lines.

One-half inch is the seam allowance on all edges. All seams are double stitched.

The iron is the fabric kite maker's ally. Be sure to test *your* iron on scraps. It is very easy to melt synthetics. Try the lowest setting at which the iron will steam. White tissue paper is a good press cloth. Hems may be turned by pressing before stitching.

Keel tips should be reinforced before the grommets are set in. A bit of iron-on patch material or an extra layer of fabric firmly stitched in place will do it.

This kite is bulky to work on. Keep extra fabric out away from the needle when stitching or it may fold back on itself and get into a seam where it doesn't belong.

*Tireless experimenter Ed Grauel drew up the first instructions for the Flow Form; then kite teacher Margaret Greger made the kite and suggested additions for the finished story. More Greger ideas appear in her books (see Classifieds).*

### CUTTING

Start by marking and cutting out ten pieces of lightweight rip-stop nylon, as shown in the diagrams. This step is time-consuming, but it must be done carefully and accurately or the pieces won't fit together properly. It is important to note that the back section is five inches longer than the front section, in order to form scoops at the top of the air channels.

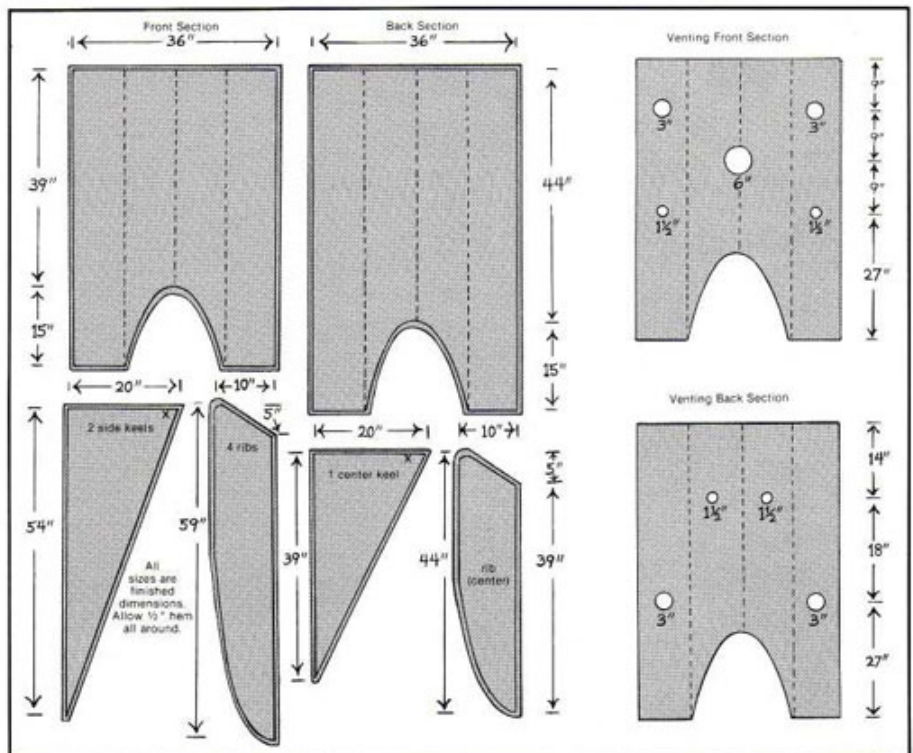
The next step is cutting out the five circular vents in the front section and four in the back section. These can be marked with a compass and cut out with a hot knife or pencil soldering iron.

### STITCHING

Sewing the pieces together must be done in the proper order or you'll find the sew-

ing machine somewhere in the middle of the ten pieces and no way to get it out! Follow the eight numbered steps *in order*:

1. Hem: (a) top and bottom edges of front and back; (b) top and forward edge of three keels; (c) top of five ribs.
2. With right sides together, pin and stitch the long, curved edges of two of the ribs to the outside edges of the back. Stitch all seams from top to bottom through all thicknesses 1/4" from first stitching.
3. Match seam lines and pin and sew the remaining ribs to the back. Double stitch by sewing the outer raw edge of the seam to the kite.
4. Pin and stitch the center keel to the face, hemming the edge of the keel as it goes across the center vent. At this point, edge stitch the raw edge of the seam to



the face of the kite.

5. With right sides together, sandwich one side keel between the side rib and the kite face. Stitch. Stitch again 1/4" from the first stitching.

6. Match seam lines, pin and sew the second, third and fourth inside ribs to the

face, double stitching each seam as in Step 3.

7. Pin the remaining keel to the outer rib, with right sides together. Wrap the free edge of the front around the kite so the right side of this edge meets the wrong side of the keel. (What you're doing is sewing up a tube, with the whole kite on the inside.) Pin all edges together, stitch and double stitch. Turn tube right side out. Voila!

8. Sew the bottoms of the front and back sections together, except for six inches at the center of the trailing edge which is left open as a vent.

### BRIDLING AND FLYING

By now, if all has gone reasonably well, your Flow Form should have taken its proper shape and requires only bridling. Eyelets or grommets should be affixed to the three keels at the points marked "X." Bridles should measure at least five feet from each keel to the towing point.

A good way to bridle and allow leeway for adjustments is to attach each end of an 11-foot cord to the two outside keels. Hold the end points of the two keels together and extend the cord to find the exact center. Now tie an overhand knot into a loop an inch or two from this point. Attach another cord about six feet long to the center keel, extend it and tie a regular overhand knot to the end of the loop formed at the center of the cord connecting the side keels.

The length of the line to the center keel should be about two inches shorter than the lines to the side keels, to permit the side keels to billow out when filled with wind. This two-inch variation may differ somewhat with each kite, but can readily be adjusted since it is held only by a simple overhand knot.

If you have come this far, you should now have a most sophisticated kite which will perform stably and reliably in winds from 5 to 35 miles per hour without the need of a drogue.

### VARIATIONS

The only trouble now that you've finished making your Flow Form is that you have only a few challenges left to demonstrate your kite sewing abilities. One of them, though, might be making another Flow Form in half size—which happens to be one of my favorites. ◇