



Potter Kite

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The Potter is a historical kite designed by Mr. Samuel Potter in the late 1800's. It was used for meteorological research. Some had 2 cells, this design has 3. The original kites were made from cotton canvas and wood spars. Our replica uses ripstop nylon and carbon spars. Fly your kite in moderate wind with 80 - 100# test line. In high winds, remove the wings and fly only the 3-celled box. Our dimensions are from Kites & Friends 06/2004. We have taught the Potter Box kite at 2 different kitemaking retreats. These are the instructions along with a supply list and drawings.

You will need:

12 inches of 3.9 ounce Dacron for reinforcements
11 yards of 1" wide 3/4 ounce black ripstop nylon tailing, split it in half lengthwise.
62 feet of pre-stretched black 100# braided line
8 RLG2300L rods
3 RLG1880L rods
5 ferrels cut from a C30 FG rod
12 CLEFSD19 T-connectors, modified to attach to the cell spreader rods
10 stubby nocks (NST2300)
1 vinyl end cap, cut into 4 rings
4 yards 3/4 ounce ripstop nylon for sails, sleeves and bag
24 sleeves (2.25" long x 1" wide cut from scraps of your ripstop nylon)
8 pony beads, available from craft stores
2 innertube bands about 1/2" wide cut from the intertube of a road bicycle tire such as a 700 x 20/28C
(Any part numbers listed are Kite Studio numbers.)

Other materials needed: matching thread and black thread. Helpful optional items: 1/4" wide double sided tape, a short, thin wood dowel, 2 or 3 chip bag clips or spring clothes pins, beeswax, silver permanent pen, transparent tape.

Sewing procedure:

Wing reinforcements Sew the reinforcements onto the back of the skin. Make a right and a left wing. Sew only the inner edge. Use matching thread if available. Zig zag stitch.

Cell panels Fold each of the 6 cell panels in half crosswise and make a hard crease along the fold. Sew two panels together with a 1 cm seam allowance, making 3 long strips for the 3 cells. Use matching thread if available. Straight stitch. Finger press the seam allowance to one side.

Edge Binding Use black thread. Locate the edge-binding strips in your kit marked for the wings. You have 2 long pieces, one for each wing. Fold a section of the strip in half and lay it around the wing edge. The edge of the wing must be on the fold line; fold the strip over and zig zag or straight stitch. Cut the strip off and continue binding the second edge. Cut and do the 3rd side. Edge bind both wings.

Locate the strips marked for the boxes. As with the wings, fold the binding and sew onto the long edges of the cell skins. You will sew one scallop, back tack and cut the binding off at the end of each scallop before sewing the next. Hint: use double-sided tape to

secure binding if you have problems. Optional: Before starting to sew cut the edge binding into pieces 48cm (19 inches) long. You need 24 strips. After sewing a strip, trim the end of the strip before sewing the next.

Wing lines and loop Zig zag stitch and be sure to back tack all starts and stops.

1. Sew a loop at the **top** of each wing. Use a 10 cm line. 3 cm of each end of the line goes on the kite with the middle of the line at the tip, forming a loop. Be careful not to make the loop too long.
2. A 35cm line goes at the **spreader tip** of the each wing. Start the end of the line at the inner edge of the reinforcement. The remainder is off the tip of the wing and is used to tie the spreader in place.
3. Use a 60cm line for the **trailing edge tip** of each wing. It is sewn in the same manner as the wing spreader tip.

Second cell seam Stitch the short ends of each panel together, completing 3 cells, with a 1 cm seam allowance. Use matching thread if available. Straight stitch. Finger press the seam allowance to one side.

Cell loops and connecting lines Cut four 200 cm lengths of line. Use thread matching the cell color if available. Zig zag stitch and be sure to back tack all starts and stops. Sew all lines on the inside of the cells. It is nice to line up the seams of the cells from one box to the next. **Measure VERY accurately. This is vital! It is the most critical part of sewing this kite.**

1. Start with one cell and one line. Form and stitch securely a loop at the **top** of the box, at one of the seams or one of the fold lines. Use 3 cm of line on the kite, make the loop (be careful not to make the loop too long; a 2cm loop is fine), dropping the line back down into the cell and continue sewing over the line to the other end of the cell. Stitch over the line, staying on the seam or fold line as closely as possible. Back stitch. Repeat this procedure with each of the other three 200 cm lines. Each loop needs to be the same length.***
2. Mark with a straight pin or a silver pen the point on the line that is **exactly** 35 cm from the end of the cell. Mark all 4 lines.
3. Position this mark **exactly** at the start of the 2nd cell with the line on the inside of the cell. Sew over it as in step 1. You will not be making the loop. Back stitch both ends. Repeat with the other 3 lines. ***
4. When done with Step 3, you will have 2 cells attached to each other with 35 cm of line between them. There is a loop at the top and a long length of line at the trailing edge.
5. Repeat step 2, marking the line **exactly** 35 cm from the edge of the second cell.
6. Repeat step 3.
7. You now have the cells permanently connected together and spaced correctly.

Sleeves The sleeves go inside the boxes and will control the longerons. They need to be stitched near the top and bottom edges of the four corners of each cell. (8 per cell.) Stitch on the long edge of the sleeve and push up the sleeve a little bit to make a slight tube rather than sewing the sleeve flat to the box. See sample. *** You may sew the sleeves into the first box right after you sew in the lines, before adding the second cell. Do the second set of sleeves before adding the third cell.

Rods: To prepare the rods for assembly take the three RLG1880L rods and cut them in half. Glue one of the T connectors onto one end of each cut rod.

Take two of the RLG2300L rods from the kit and cut them in half. Glue a nock onto one end of each RLG 2300L. (Total of 10).

You **must** fit the box spreaders into the kite before gluing the second T connector to the rod. Cut as necessary. When you glue the T connector in place, make sure it lines up with the other one. The box spreaders are approximately 60cm long. (RLG1880L rods)

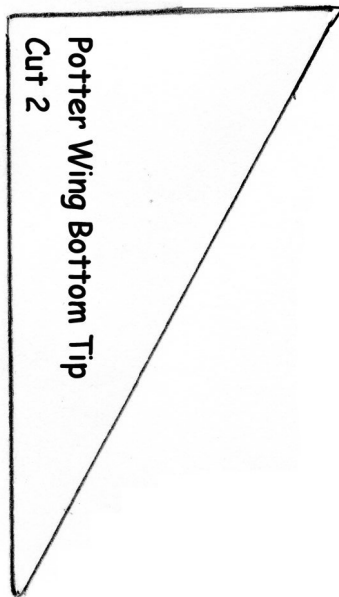
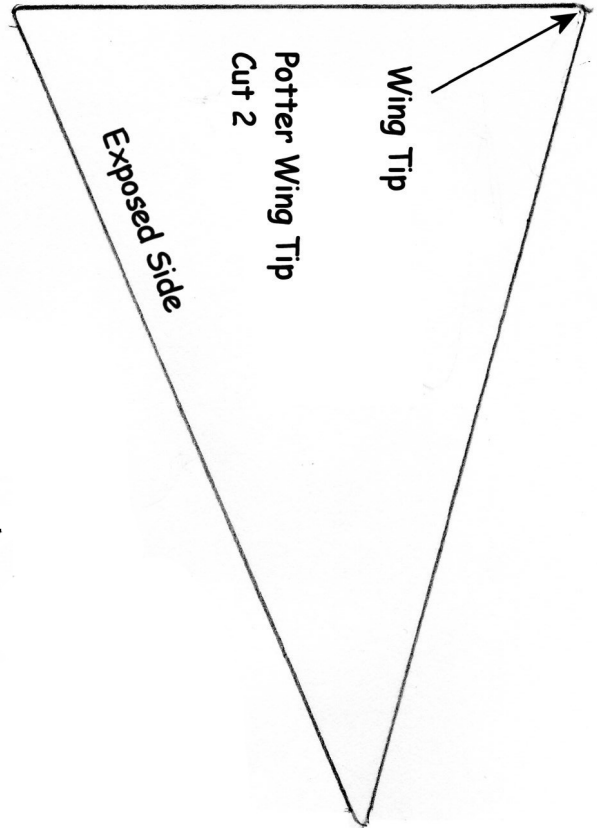
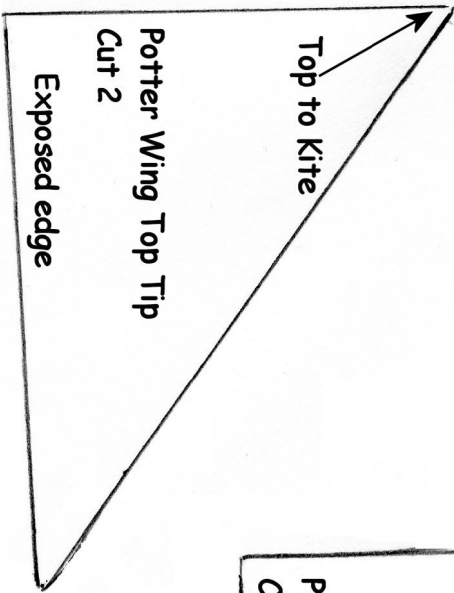
Longerons: Install ferrules to a depth that is half the length of your ferrel on four of the full length (RLG2300L) rods. These will be positioned at the top of the kite. The four short longeron pieces are approximately 58cm overall. When assembled, each longeron has an arrow nock at both ends. When you put the rods into the cells, a circle of intertubing goes on 2 opposite longeron rods between the top and middle cell. They will be used to secure the wing spreaders in position. Cut the vinyl end cap into 4 rings. These will go over the arrow nocks and will hold the cell loops in place at the top of the kite. Once put into the cells, the longerons always remain in place.

Cut each wing spreader (RLG2300L) to 104cm; install one rod into the ferrule to a depth that is half the length of your ferrel.

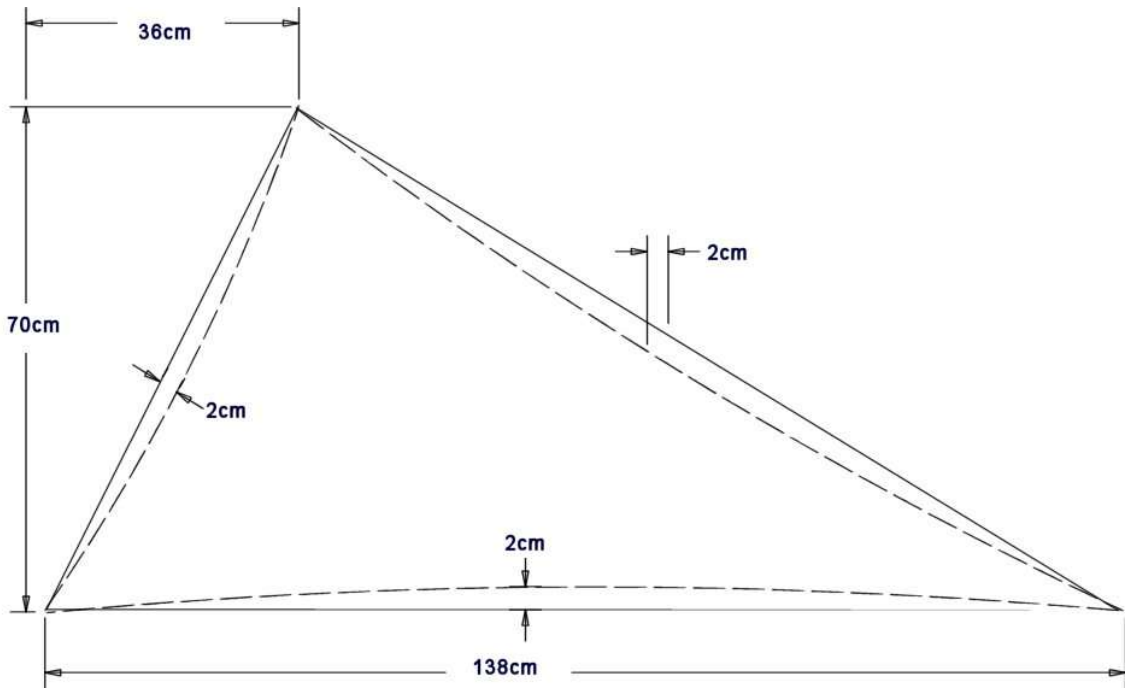
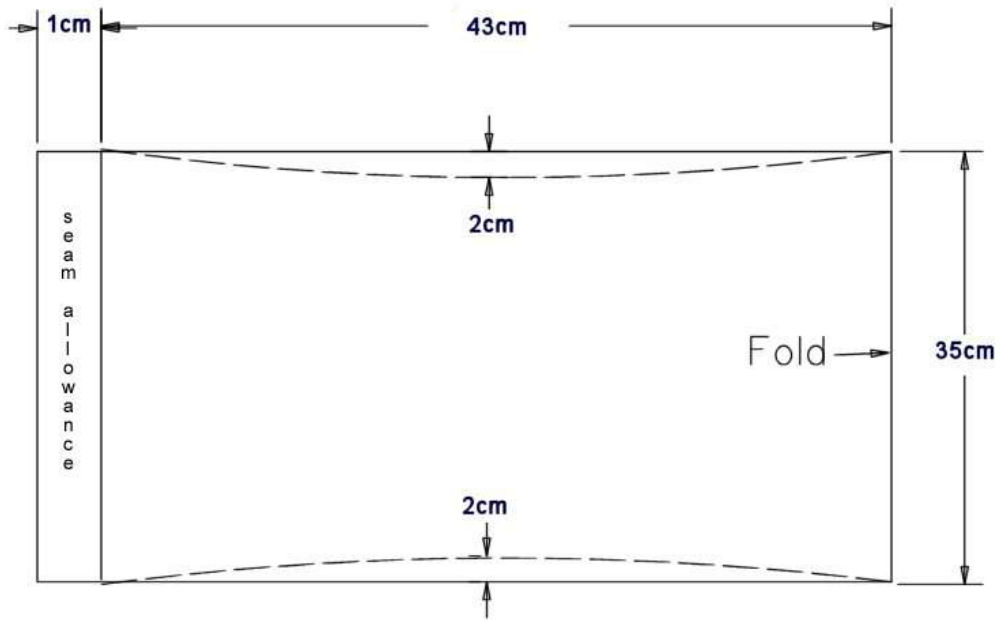
Bridling Cut four 30cm pieces of line and one 50cm piece. Make loops of each. Set aside the long loop and attach 2 of the short ones to the boxes on a longeron without the intertube loops. Position 1 at the top of the kite and the second above the bottom box. The remaining two short loops are attached, one each, to the lines extending from the wing bottom tips via a Prussic knot. Two turns is usually sufficient.

Use the remaining line for your bridle. Tie a loop at each end. Attach it to the loops you put on the boxes with a lark's head. Lark's head the final loop to the bridle. This is your tow point.

Done! Enjoy flying your replica Potter kite.



Potter Kite reinforcements



Potter Kite dimensions