

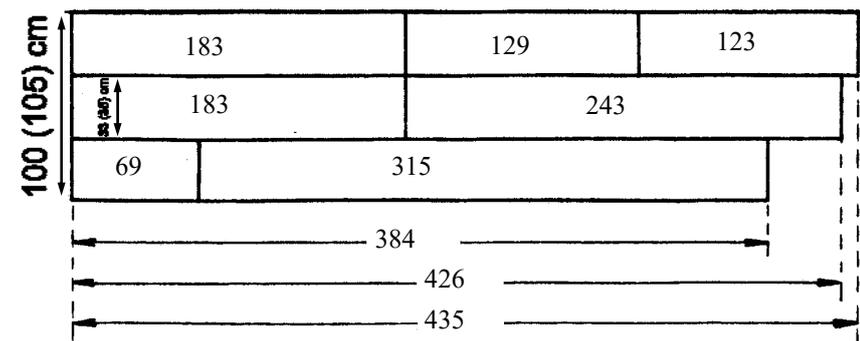
## The Gaufre (Waffle) Kite by Joseph LeCornu

About 1898, Joseph Lecornu, French engineer, created several types of multi-cellular kites known as "Ladder Kites". The kite shown here, is known as the "Waffle" Kite. It is fairly easy to build. It is made primarily of 16 cubic cells created by assembling seven rectangular fabric spinnaker strips. All the seams are simple and easy to sew and all the same for each cube as long as you follow the sewing order shown on the plan. Flying on the corner point, this kite has an surface area of 2.5m<sup>2</sup> and a weight of 560g/m<sup>2</sup>. It is designed to fly in a wind of 4 to 5 Beaufort.

To begin, allow 6cm of fabric for each pocket and 1.5cm for each seam. Mark and cut lengths of material as below. The first column of numbers refers to the numbers on the sewing plan, the length is derived from a 30cm cell size, the number of seams and the number of pockets required.

- 2-1-3 = 2 X 30 + 2 X 1.5 + 6 = 69cm
- 5-2-4-3-6 = 4 X 30 + 2 X 1.5 = 123cm
- 9-5-7-4-8-6-10 = 6 X 30 + 2 X 1.5 = 183cm
- 18-11-9-14-7-13-8-15-10-12-19 = 10 X 30 + 2 X 1.5 + 2 X 6 = 315cm
- 21-18-14-16-13-17-15-19-22 = 8 X 30 + 2 X 1.5 = 243cm
- 23-21-16-20-17-22-24 = 6 X 30 + 2 X 1.5 = 183cm
- 25-23-20-24-25 = 4 X 30 + 2 X 1.5 + 6 = 129cm

By dividing the width of the fabric into 3 equal parts, you obtain strips of 33cm or 35cm depending on whether it is 1m or 1.05m wide. If you use only one colour, and if you cut the 7 pieces as shown



below, you will need 4.35m of material.

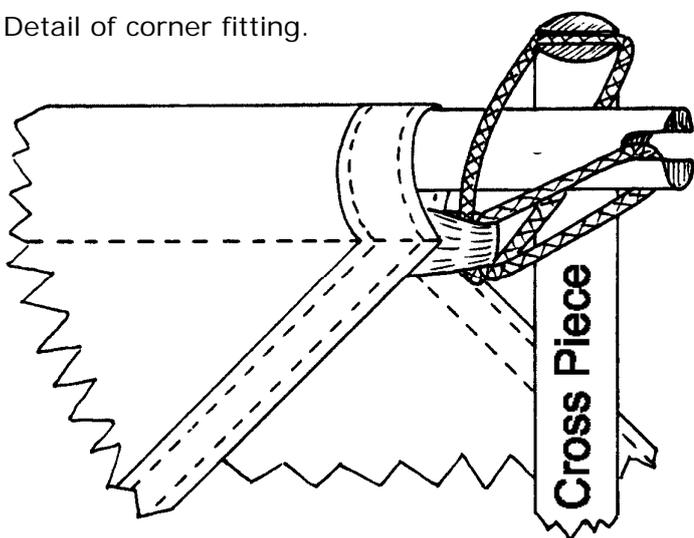
Start by hemming all the rectangular pieces over their lengths. Then take segment 2-1-3 make the pocket as shown not forgetting to sew in a loop at each end of the pocket as indicated on the drawing. 10 centimetres of ribbon are enough for each loop and leave about a centimetre showing of loop. These loops will be used to attach cords - again see

the diagram.

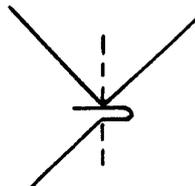
On the next piece, 5-2-4-3-6, mark the position of the seams 2, 4 and 3, and join to the previous piece along seams 2 and 3. Proceed in the same way for the remaining pieces without forgetting to

sew the pocket and loops at positions 11, 12 and 26. In addition also add loops at point 13 to be able to attach the cross spars.

Detail of corner fitting.



Seam Assembly



Seam 25 and 26  
Last seam of Kite

The spars of the kite are made of 4 small lengths of ramin 12mm diameter by 40cm length and 4 cross spars in ramin 15mm diameter by 1.90m. The spars will go into the pockets A, B, C and D; the cross spars are used to tighten the kite across diagonals AB and CD, two on the front and two on the back. All

the cells must be tight.

To finish add cords to the ribbon loops and make slots in the spars as shown in the diagram.

The bridle, total length 2.5m is attached at points A and E. (Top 160cm, bottom 90cm). At E, the bridle is attached to the loop of cord which passes through the ribbon which is holding the cross spars.

This kite can exert a pull of 15kg. Use a flying line of at least 60kg.

