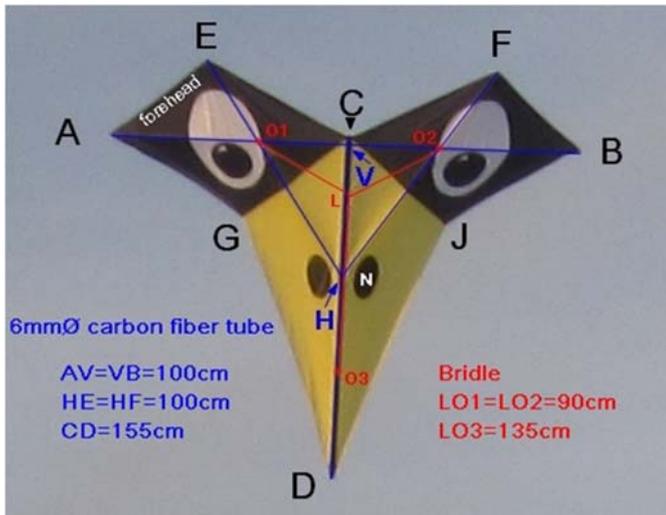


Big Beak



Association Fécamp:
Atout Vent

In tribute to skillful kite designer and buggy master Charley Watson from New Zealand, we bring to you a version of his BIG BEAK, a bird's head recalling a toucan's.



It is 2m wide and long, weighs about 245g for a sail area of 1.4sqm. It supports a wind window from 1 to 3 Beaufort. Gildas THOMAS re-examined the design and suggested this kite plan for a collective workshop.

Drawing the Plan

All dimensions are in cm. The kite is symmetrical according to CD.

- Draw DC. At 140cm from D raise a 100cm perpendicular to mark point A.
 - With C, then A as centres, draw the arcs of 62cm radius intersecting at E and G.
 - Draw GD.
 - Point H is the centre of a 100cm radius circle through D and E (and F symmetrical to E).
 - The axes of the "white of the eye" cross at the intersection of the diagonals AC and EG.
 - The Ø18cm pupil is tangent to AC in its middle.
- Add 2cm for hems (AE, EC, AG, CF, FB, and BJ) and 1cm for assembly seams (CG, CJ and CD).

Warning: the spreader AB is curved, it passes in V; bridle points O1 and O2 may be determined only after complete assembly of the frame, spreader being bowed (about 35cm between V and the tensioning line).

O3 is the location of the third leg of the bridle tied to the spine. The weave direction is shown on the plan.

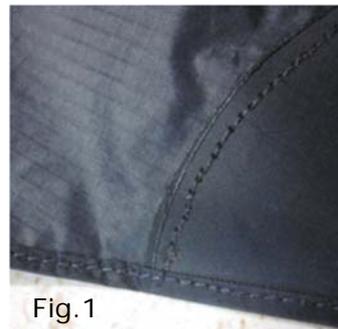
SEWING TIPS:

Each will use one's familiar method to put together the various parts. However, and especially for newbies, here's a description of proceedings you may adopt to avoid ending up with too much fabric to pass under the arm of the sewing machine, or annoying "ripper" sessions.

Hems, reinforcements and pockets for the spars are on the upper surface (sky side).

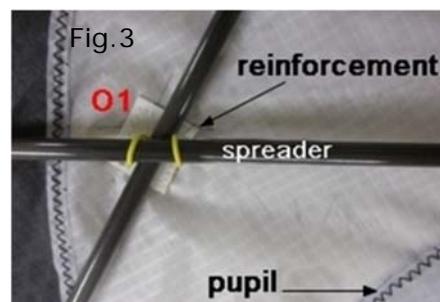
1. Sewing the Hems:

- Sew all left "forehead" seams that is AE, EC, AG and right forehead BF, FC, BJ) inserting the reinforcements A, E, F and B inside hems (folding twice 1cm). (See Fig.1)
- Sew the half-beaks hems namely GD on left half-beak and JD on right half-beak (do not sew reinforcement D for the time being).



2) Sewing Eye and Nostrils:

- Sew the pupil on the "white" of the eye (upper side) appliqué style using short and narrow zigzag stitch (if possible meet the alignment of the weave for the superimposed parts) (Fig.2)
- Sew the same way the "white" of the eye on the upper surface of each half-forehead.
- Cut out the under skin alongside the stitching line (inside the ellipse)
- Remove the extra fabric from the upper side (outside the ellipse). (Fig.3)



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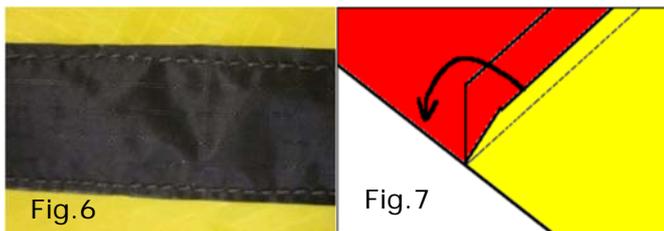
- e) Sew the two nostrils on each half beak (on lower surface for dark fabric and upper surface for light colour fabric).

3) Beak Assembly:

- a) Assemble the beak by superimposing the CD lines and sew (straight stitch) along the drawn line. Then sew the extra fabric margin on either side (zigzag.) (Fig.4)



- b) Fix the reinforcement D on the upper side. Sew an 80mm long velcro (hooks part) tunnel for the spine and the Velvet portion to be folded over onto the hooks, tensioning the sail on the spar. (Fig.5)
- c) Install the 25mm ripstop ribbon as CD over the three lower surface side seams (Fig.6)



4) Assembly of the Sail:

- a) Sew half foreheads on the beak using a folded seam towards the darker panel side (right side against right side sew a straight stitch on the superimposed lines).
- b) Open the panels, fold and fasten the flap by a zigzag hitch). (Fig.7 & Fig 9)

5) Sewing Pockets for Spars:

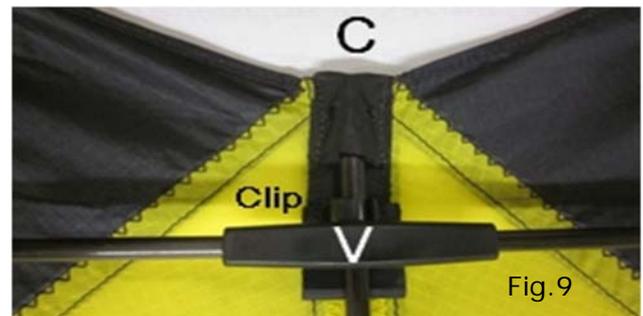
Attach pockets in A, E, C, F and B. (Use the spars to help find the angle that suits.) Hot pierce two small holes through pockets using a soldering iron either sides of the spreader at A and B to fasten the tensioner (as for a Sanjo Rokkaku kite).

6) Assembling:

- a) Thread the reinforced clear tube through on the spar at 1m from D. (Fig.8).
- b) Place the cross connector and clip in V (Fig.9).
- c) Insert the foot of the spine inside the scratch tunnel without folding the velvet strip.



- d) Place the EH and HF struts in the clear tube and insert the three ends of the rods in their pockets E, C and F.



7) Tensioning :

- a) Tension sail along the longeron from beak tip by folding the velvet strip over the hooks of the tunnel. (Fig.5)
- b) The reinforced clear tube should be pushed up to equalise tension upon "eyebrows" in E and F (wait for sail and the armature to be accustomed to each other to glue the clip).
- c) Once bent by the tension of the slide the spreader will bear on the clip which is to be bonded (cyanoacrylate) at 5cm from C. (a 5cm tube threaded on the spine between C and D can also do the trick)

8) Bridles:

See illustration on page1.

A sheet bend or weaver bend is recommended in L because it facilitates a left/right adjustment sliding towards O1 or O2 and trimming of incidence angle by lengthening or shortening DL.

As for Eddy Kites, Big Beak smarts a steadier flight when the sail is not too tight. If it sways too much, slide down the connector H towards D a little.

This plan is for non-commercial use.

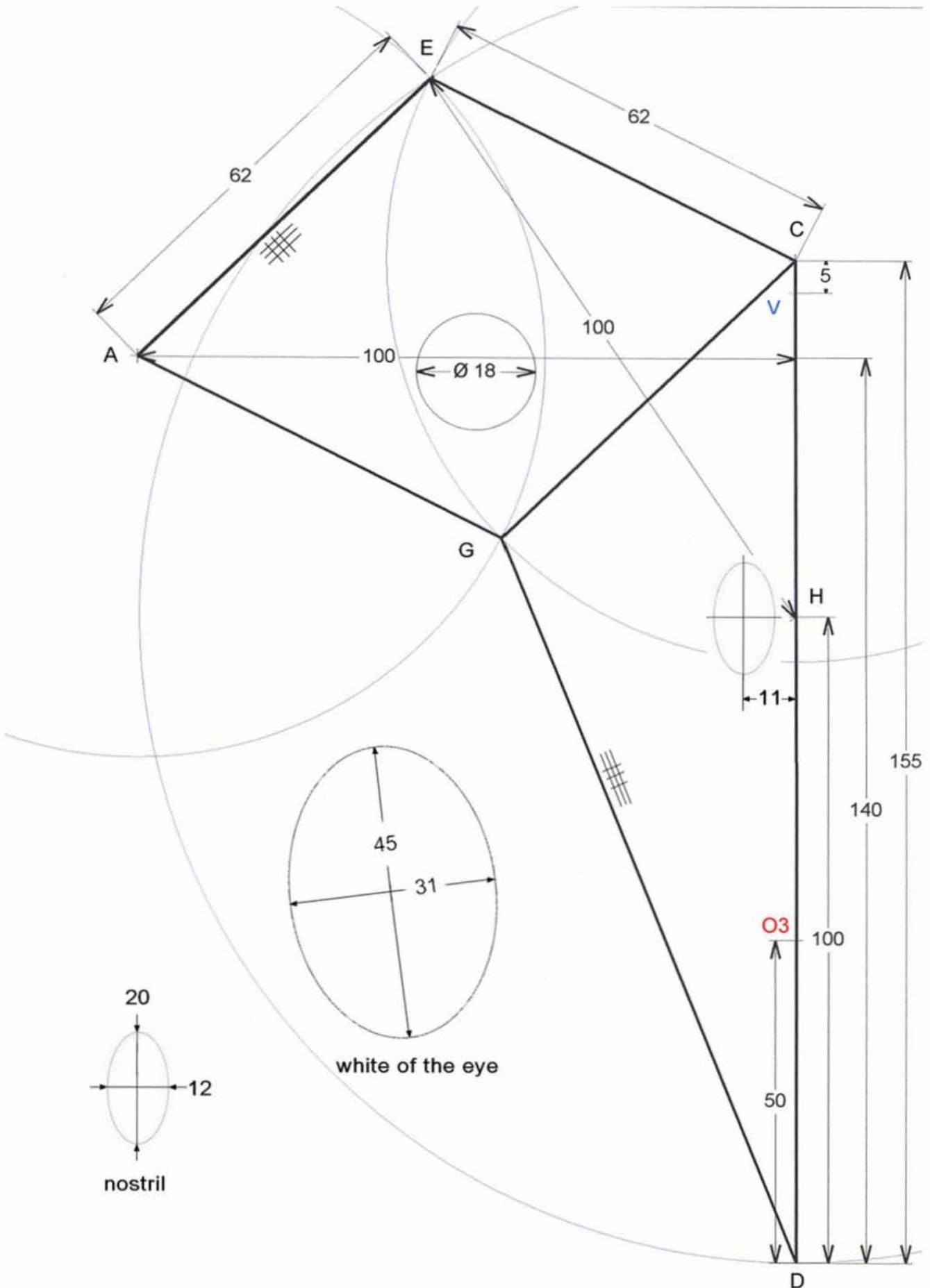
FECAMP : ATOUT VENT

Atelier-local « Espace Henri Dunant »
rue Henri Dunant - 76400 Fécamp

Courriel : fecamp.atoutvent@laposte.net

<http://fecamp-atout-vent.over-blog.com/>

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Ref. in picture	Parts	Items/size	Material	Colour
Forehead	forehead diamond	1G & 1D	Ripstop	chosen colour
CGD & CJD	half-beak	1G & 1D	Ripstop	chosen colour
O	eye	2	Ripstop	chosen colour
P	pupil	2	Ripstop	chosen colour
N	nostril	2	Ripstop	black (except black beak)
CD	beak axis	1	25 mm Ripstop ribbon L=155 cm	black
A - B	reinforcement cross spar	2	Dacron sector r 7cmx70°	black
E - F	eyebrow reinforcement	2	Dacron sector r 7cmx110°	black
O1 - O2	Reinforcement bridling point	2	3 layers ripstop 2cmX2cm	matching eye colour
D	reinforcement spine foot	2	Dacron sector r 7cmx50°	black
A-B-C-E-F	pockets for spars	5	25mm Dacron L= 8 cm	black
D	spine tension	1	20 mm Velcro L=20 cm	black
V	cross junction	1	Ø6	black
H - V	blocking clip	2	Ø6	black
H	vinyl tubing connector	1	Ø6	clear
	4 hole button (slide)	1	Ø20mm	
A B V	tensioning line	3.30m	polyamide braided line 45Kg	white
O1O2 - O3L	bridle	4.15m	polyamide braided line 45Kg	white
AV-VB-HE-HF	spreader & struts	4X1m	carbon tube Ø6	black
CD	spine	1.55m	carbon tube Ø6	black
AV-VB-HE-HF-CD	spar ends	6	polyamide	black