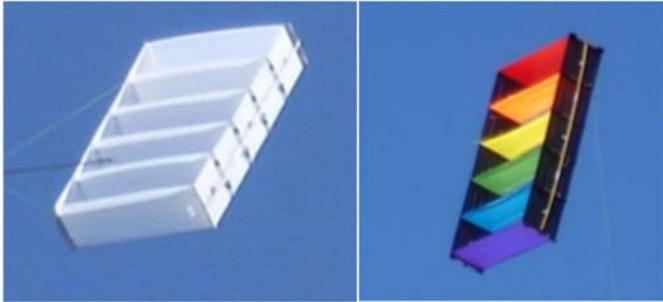


## Ladder Kite 5 Celled Design—Mark Harding

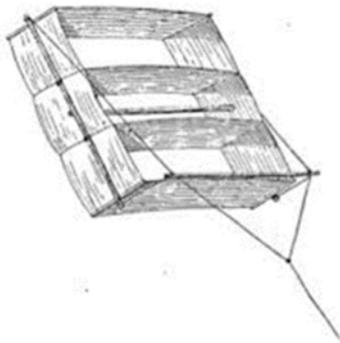


Traditional White

Rainbow Colours

Lecornu's original 'Etagere' (meaning shelf) kite consisted of 3 rectangular cells stacked on top of one another it is also referred to as a 'Bookcase' kite.

It is more commonly known as a 'Ladder' kite.



Lecornu's Ladder Kite 1898

In my design I decided to increase the number of cells to five.

### Materials:

- Ripstop nylon for the sails
- Wooden dowels for the spars (I recommend using pine dowels as ramin is hard to get now)
- Plastic tubing for the joints
- Garden bamboo cane for the inserted spines
- Aluminium ferrules (optional for greater collapsibility).

### Construction

- Cut 6 pieces of ripstop measuring 8in by 24in (piece A)
- Cut 10 pieces measuring 8in by 8in (piece B).
- 6 of the 10 will need a hole made in the centre to allow for the horizontal braces to pass through.
- Also an allowance of  $\frac{3}{4}$ " at either end will need to be added to make sleeves to take the bamboo spines.

- If edges are hemmed then an allowance will also need to be made.
- Start sewing from the bottom or top part of the kite, the 4 central A pieces are sandwiched in between two B pieces.

### Spar and Bridle

- 3 horizontal spars measure  $25\frac{3}{4}$ " approximately
- 2 side vertical spars measure  $41\frac{1}{2}$ " approximately
- With the vertical spars I have cut these into 3 pieces and ferruled them for greater collapsibility, but this is optional.
- Bamboo spars that will go inside the sealed pockets measure approximately  $7\frac{3}{4}$ " - you will need to cut 12 of these.
- To hold the spars in position 10 brace locators will need to be cut from plastic tubing these are about an inch long.
- To tension up the 4 middle planes of the sail I have used Dacron tape, nylon line and buttons to adjust tensioning.
- On the four outside corners I have sewn tab pockets to take an 8in piece of dowel which will hold a brace locator for the vertical spars.
- I have made small holes in either end of the dowels in order to sew them to the tabs.
- For the tab pockets, these are  $1\frac{1}{2}$ in by 3in and on the 3in length,  $\frac{1}{2}$ " either end is sewn to the sail which leaves a 2ins allowance for the open ended pocket.

When the kite is assembled bracing lines will need to be tied into place in the 2 cells where a spar does not pass through.

The bridle on this kite is a compound type 4 leg to 2 leg and also has a cross bar to stop distortion of the kite, the bar measures approximately 24in.

With this type of bridle I have found that small adjustments can be made for different wind speeds by adjusting the position of the bar.

This is a kite for stable winds of between 8 to 15mph if the winds are not stable it will tend to dive.

See the next page for close up construction details.

Good Luck,

Mark Harding

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Different pictures of the kite showing how it is made.



Layout of kite, the bridle lines with space bar and attachment to the kite.

