

# KITE PLAN

The Ginga kites are single line freestylers steered as fighter kites but also able to glide and make all kinds of figures depending on your skills and imagination. Hence their name: ginga, the basic move of the Capoeira, the Brazilian martial art that combines fight and acrobatics, exactly like these kites. They are larger and more curved than fighters. They are well balanced, able to glide, to flat spin and more. Let it glide away with a gentle tension control on the line, then block and pull, the kite will turn and rise. Other figures are possible, like belly launch, dive and land, up and over, half-looping/half barrel and glide away, looping, circle around yourself. Try different bridle tuning: from as flat as possible to have it gliding to its max but unstable, to as heavy as possible for steady flying like a fighter. The trick comes from the bow that combines carbon fibre leading edges with a central glass fibre section that acts like a spring: keeping the fabric tensioned and the wings spread for smooth gliding, but also when pulling/releasing, the wings will bend inwards, giving directional stability. Last but not least, when releasing the line, the wings will flap to propel the kite in a horizontal or vertical loop.



central cross fitting that is ideal to snap the spar into it. In fact, any (modified) fitting, opened central cross, that will act like a hook should work.

## Building Steps

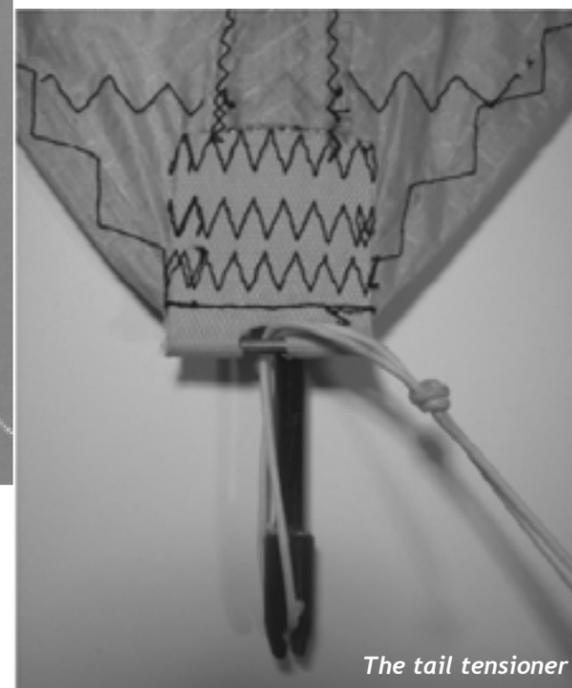
- Print, assemble the plan and make the cutting template. (Templates are available online in the *Kiting+* page at [www.aka.kite.org](http://www.aka.kite.org).)
- Lay two layers of fabric on each other.
- Lay the template in the fabric, aligning the straight grain of the fabric with the leading edge.
- Pencil the central curve (spine), assemble both layers along the central curve with a soldering iron, making thin dots.
- Cut (with a blade, not hot cut) the leading and trailing edges.
- Cut along the central curve, 1/2cm away from the pencil line/soldered dots.
- Straight stitch along the pencilled central curve.
- Open both wings, open the left 1/2cm and crease it flat on both sides of the central stitch. Keep it flat with a

triple zig-zag stitch.

- For the vented version, you must first prepare the two



future wings by pencilling the shape on the fabric, including the ventilation holes, cut these holes out, and stitch the grids. Then lay those two wings on each other, lay again the template on top and cut the leading and trailing edges, then solder, cut and stitch the central curve as explained above.



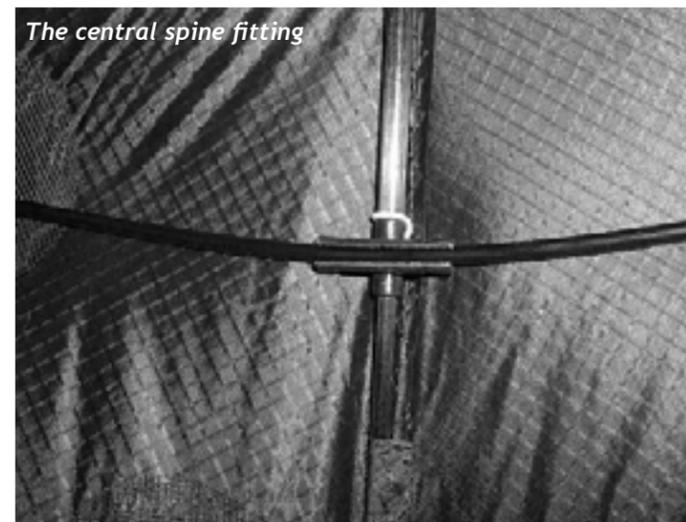
The tail tensioner

- Apply reinforcements at wing tips, tail.
- Hem the trailing edges.
- Apply the mylar reinforcement along the leading edge: between nose and spar pocket.
- Make the leading edge spar pocket (minimum 5cm wide) and close the end with some Dacron.
- Make the nose with 3.9 ounce Dacron; it must be bulletproof as it will take the

whole tension of the sail, plus the crashes.

- Make the central spar pocket. The trick is to straighten the sail on a curved surface and then to apply the pocket. This strip of fabric is cut in the bias of the fabric.
- Make the tail tensioning system with a piece of strap and some 2mm carbon fiber. Make the thread loop as seen on the pictures.
- Apply the battens; they are pointing towards the nose just to make it easier to fold the kite. They then align with the central spar. Note that the small Ginga has no battens.
- Make the central spar, 4mm (3mm for the small one) carbon fiber, insert it in the central pocket, stretch the sail as much as possible and cut the spar 5-6cm longer. Adjust the length of the tensioning loop so that the sail is strongly tensioned and the compression on the spar makes it bend!
- The central cross is kept at the right distance of the nose with a segment of 6mm spar positioned over the 4mm bar.
- Make the bow: carbon fiber of the same length than the leading edge pocket. Then make the length of the central glass fiber segment in order to have the bow intersecting the central spar approximately 1/3-1/2 of the nose—central connector distance. Push the bow into the central connector. Now the kite has gained its 3-D hollow shape. If you feel that the tension is excessive, shorten the central segment (half a centimeter at a time). If the kite remains flat or with too many plies along the central spar, make a new central glass fiber segment somewhat longer.

The central spine fitting



The length of the glass fiber segment depends on its stiffness. The stiffer the shorter, but if too stiff, the kite will not bend as required in flying conditions, hence use the softest possible glass fiber.

The bridle is as simple as it can be: two points. It should be as long a possible but short enough not to be tangled in the wing tips. A three point bridle works too. On some pictures you can see a three points bridle that is another option.

If you have questions or would like to share pictures, contact me at [chtournay@yahoo.fr](mailto:chtournay@yahoo.fr). For more building tips, look in the "Kite Plans - Reviewed" section of the Kitebuilder's Forum. Thank you to Marion Steeves for her assistance with this plan. Good winds, bon vent, have fun. K



They of course fly in steady winds but are also great fun with a shorter line in unstable winds because they will react to any wind shift but keep on flying. You should be able to fly them in parks behind trees or any place that you would normally consider unsuited for kiting. The more wind shifts, the more fun as you'll have to continuously recover the kite.

There are different versions:

- the small one, compact and agile
- the standard, for light winds, fast flying
- the standard vented, for medium wind, or gentle flying in light winds
- the stretched one: maximum glide, slower flying, for lighter winds.

The plan is a series of pages that have to be assembled to create the template. On the plan you'll find the three sizes and the design of the ventings. The recommend fabric is Chikara or ripstop nylon, with some mylar (or Dacron) reinforcement at the leading edge. The spars for the standard and stretched ones are 4mm carbon. The central glass fibre section of the bow is also of 4mm. For the small one, all spars (carbon and glass fibre) are 3mm. The central connector is an open

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