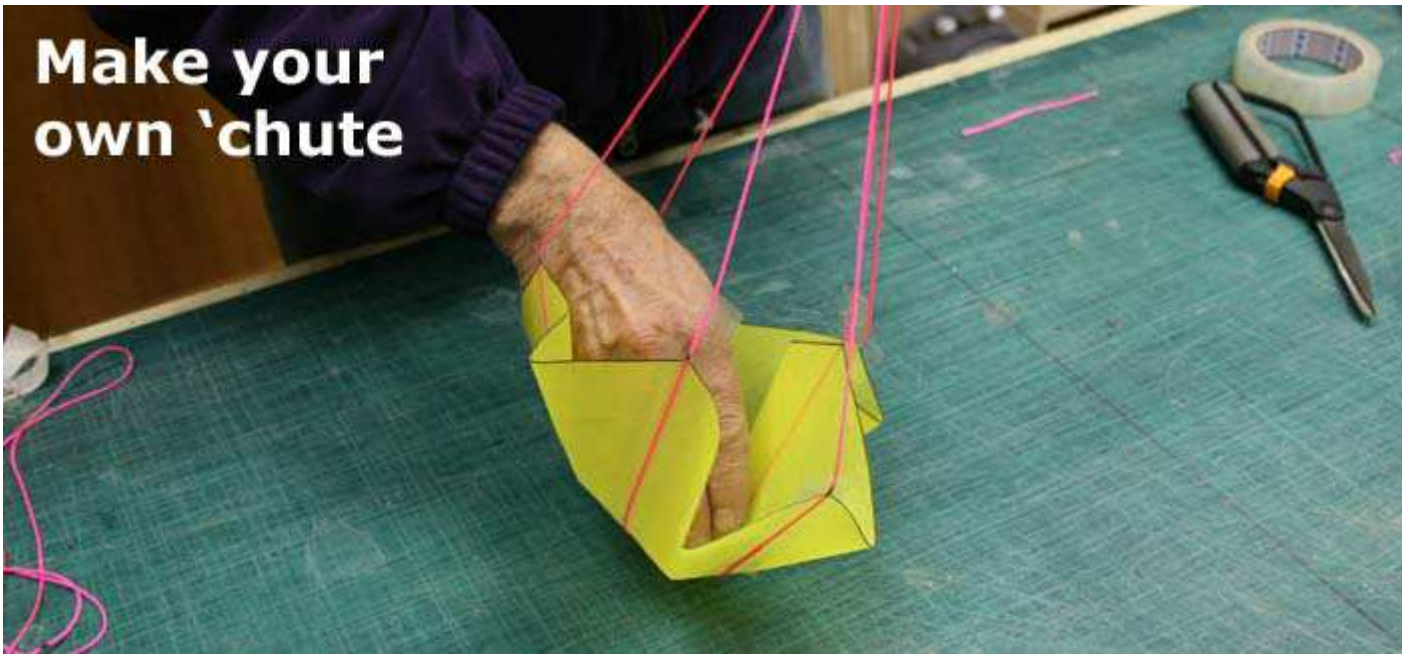
Make your own winch parachute



The photos and captions should give you a good guide to how to make your own parachute that is inexpensive, rugged AND pops like a rifle shot after a good ping.

This version is single colour which we have found is fine in terms of visibility.

Items needed:

- Plumber's line/ plaited nylon (fluoro pink for visibility while making it)
- Ripstop sailcloth
- Paper template

Tools:

- A jig (a piece of wood and 2 nails hammered in)
- A fine marker pen

- Rule
- Pencil
- 3m77 adhesive spray or similar OR masking/sticky tape
- sewing machine
- scissors

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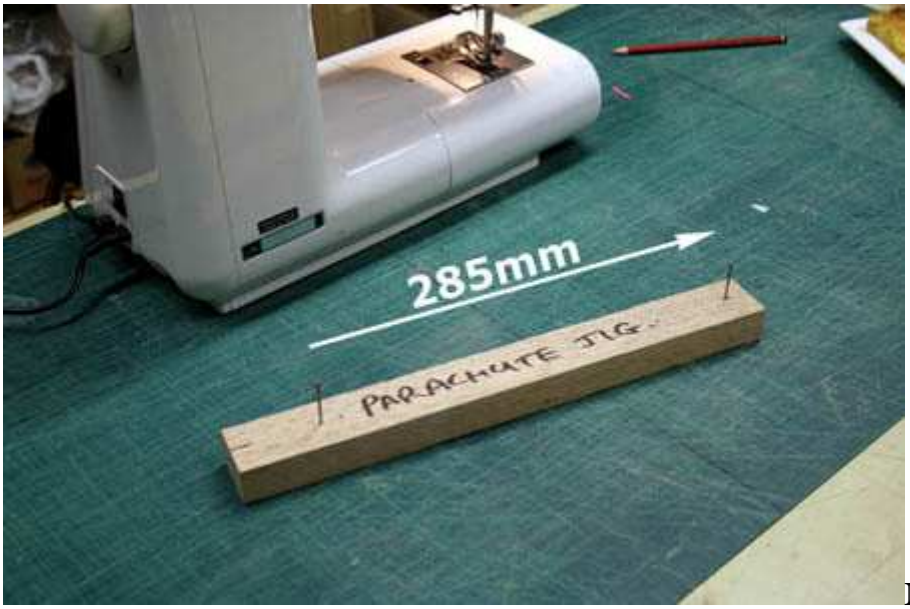
 The paper template is a hexagon, 285mm diameter.

F3B rules dictate a "5 dm minimum area".

Just use a compass, draw a circle and then draw 3 lines across the centre and then join the adjacent perimeter lines producing 6 equilateral triangles.

Use the template to cut out your 'chute material:



Make a simple jig to help you mark out 9x 285mm lengths of line:

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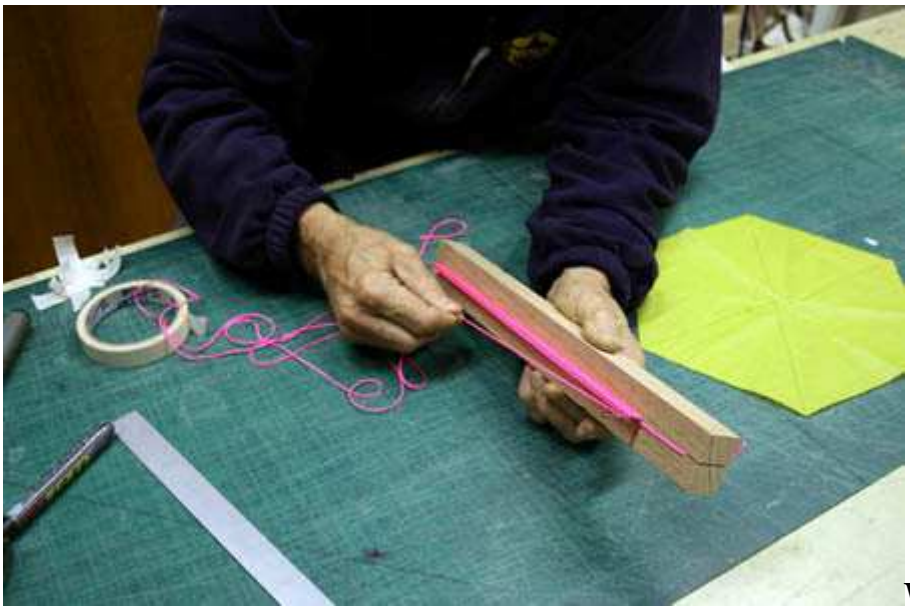
Wind line around the nails to give you 9 lengths of 285mm:


Mark the line at each nail. Then unravel the line:

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Use pencil guides to assist in laying-out the line on the 'chute:


Use masking tape to hold the line down while you lay it out:

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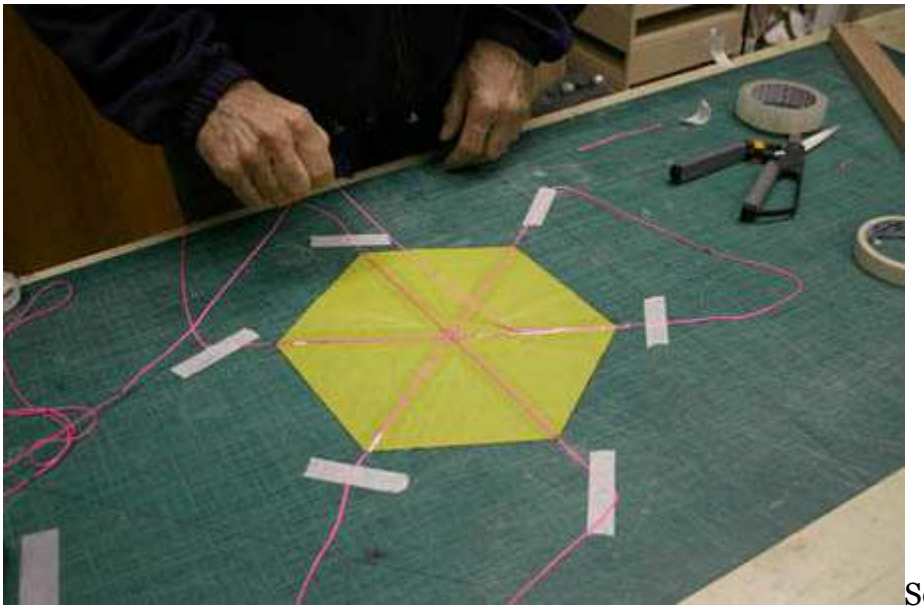
Your aim is to ensure all lengths are equal; get it wrong here and your chute can rotate on launch/ in the air and spin the lines which can reduce line lifespan:


See the 3 loops? The final run is to return to the origin:

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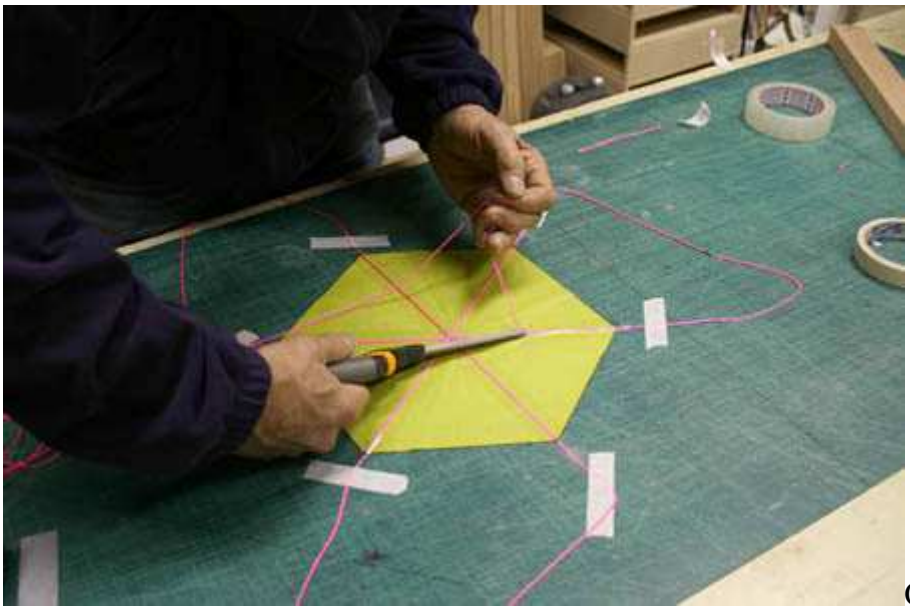
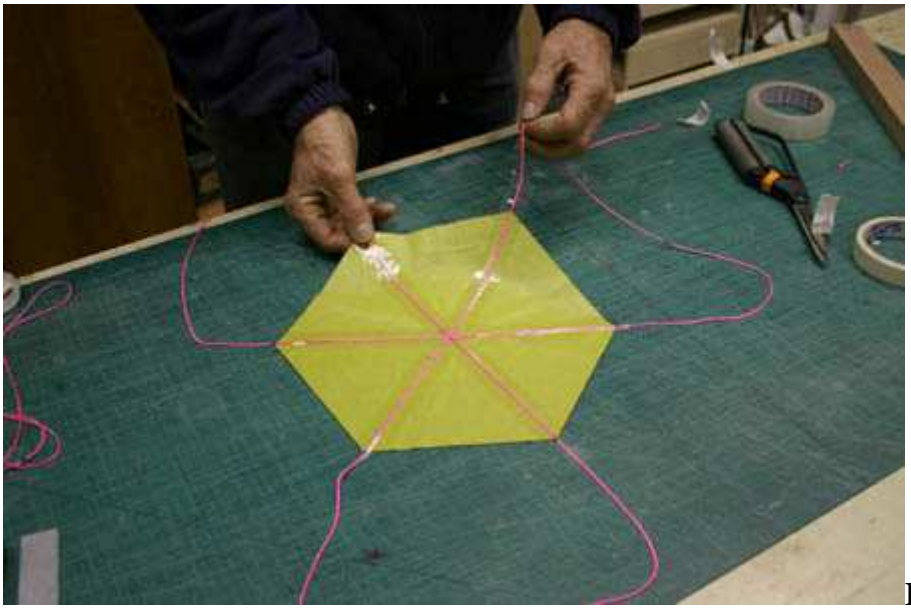

Once back at the start, cut the cord flush:


Lines laid out and taped down. The tape is removed later after stitching. A better soultion would be to stick the line down with 3M77; the tape can cause the sewing machine needle to veer off:

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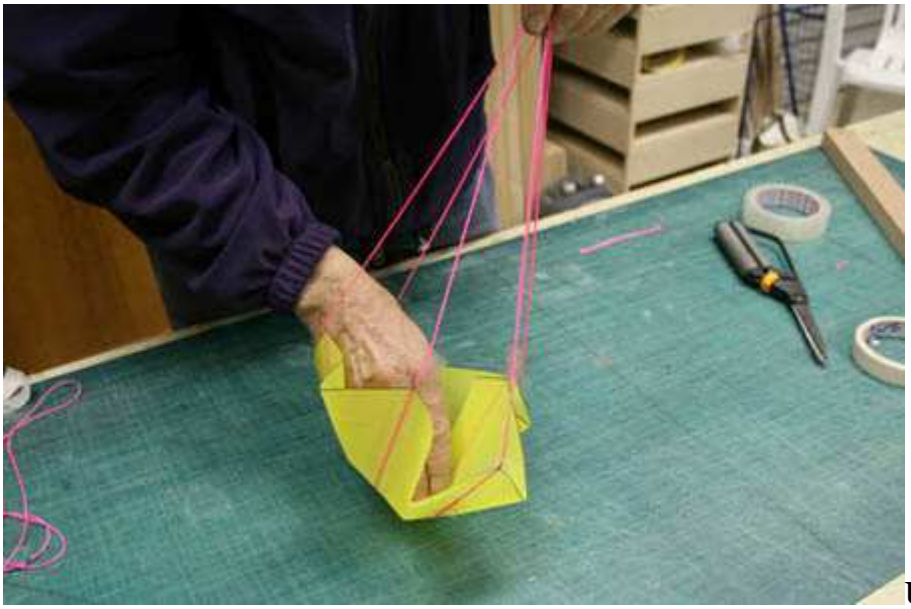
Unfurl the 'chute and check the geometry:

Use a straight-line stitch and attach the lines to the 'chute. Leave a gap of no thread across 25 mm of the uppermost cord at the chute apex; this is the loop through which you feed the hook-attachment loop:

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Once all lines are done, unfurl again to check geometry and re-do any poor stitching:


Reinforce the cord intersection. Also reinforce the high stress areas:

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To attach the 'chute to the line; firstly thread the line through a strand of nylon piping and tie off. 3mm nylon piping from marine stores with the centre removed works well for all lines up to 1.8mm.

 Arrange the 'chute cord to create a loop:

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 Loop made:

 Pass line through 'chute cord and secure as shown:

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 To attach line to fuselage follow these steps:


Feed nylon loop (shown in white) through unstitched apex of parachute and then attach to towhook:

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All done! The ' chute takes massive launches and reliably pops-off. The method illustrated allows the 'chute to cling to the fuselage on launch, thus reducing drag.

Credits:
Bruce Nye for design and techniques, Chris Adams for photos and captions.