

Delta wing kite

Materials:

About 15cm heavy duty PVC hazard tape or gaffer tape

4 dowel sticks

1 thin white bin liner

1 thicker black bin liner

Kite line on a reel

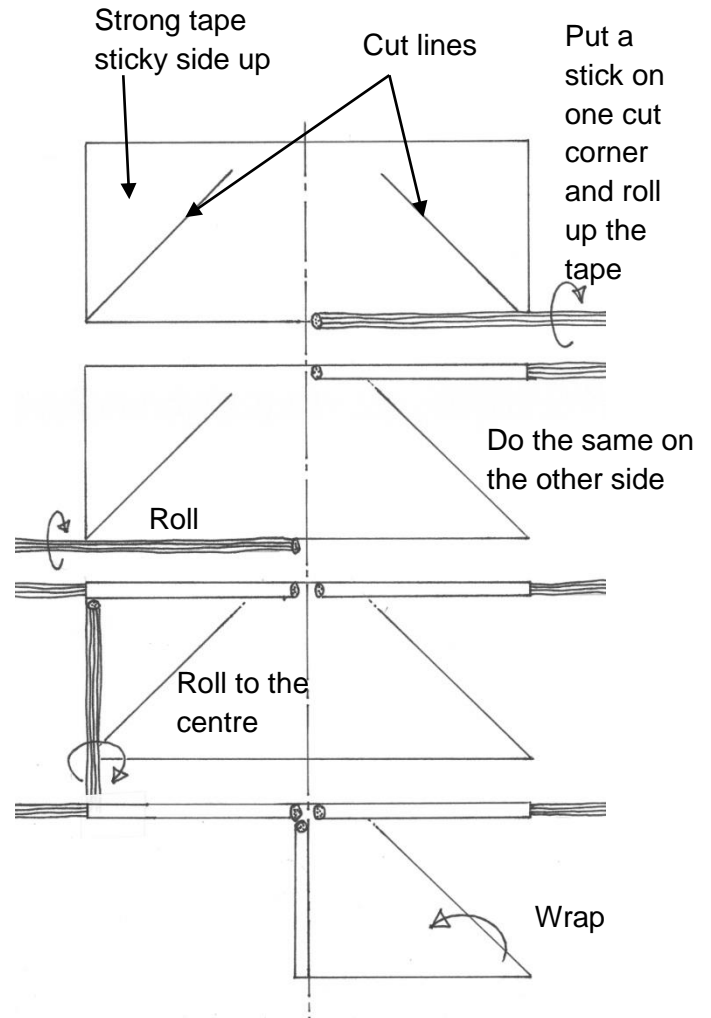
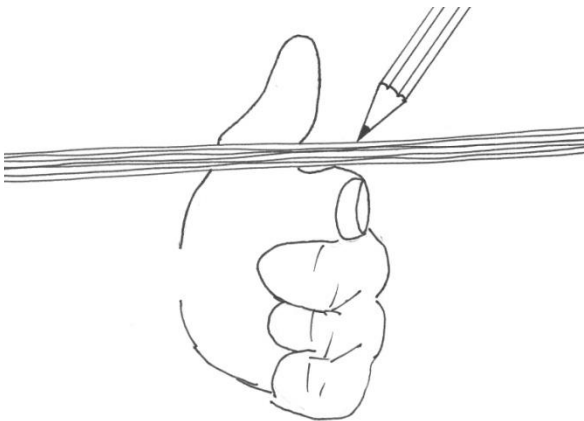
Swivel

Sellotape

1. Use the strong tape to make the kite nose. Make diagonal cuts from 2 corners of the tape towards the centre.

Put a dowel rod halfway across and parallel to the long edge and roll it into the outside triangle.

Do the same on the other side then roll a third rod towards the centre parallel to the short edge of the tape. Wrap the last tape triangle around the third rod.



2. Fold the kite frame so all the sticks lie together and use your finger to find its balance point. Mark this point on all 3 sticks.

Kite part suppliers:

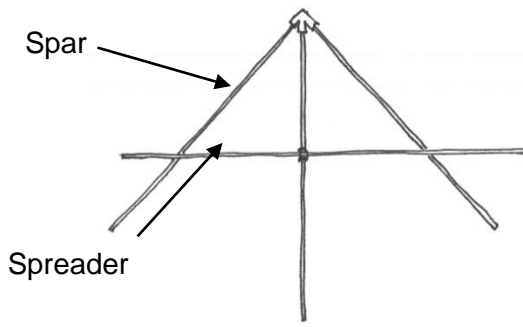
Lines and swivels: Cochranes of Oxford Ltd www.cochranes.co.uk

Dowel: Outreach uses a non-retail supplier but googling 3mm hardwood dowel uk produces many hits.

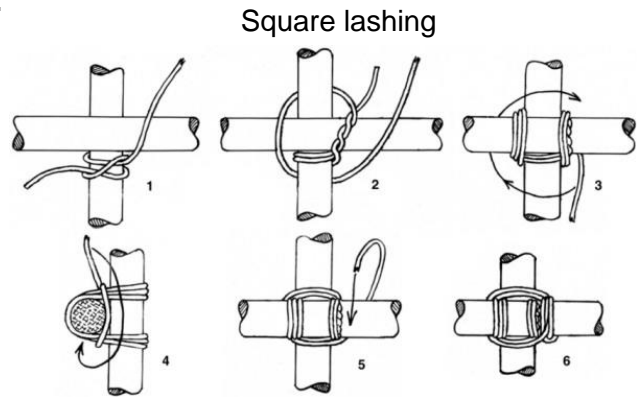


UNIVERSITY OF
CAMBRIDGE

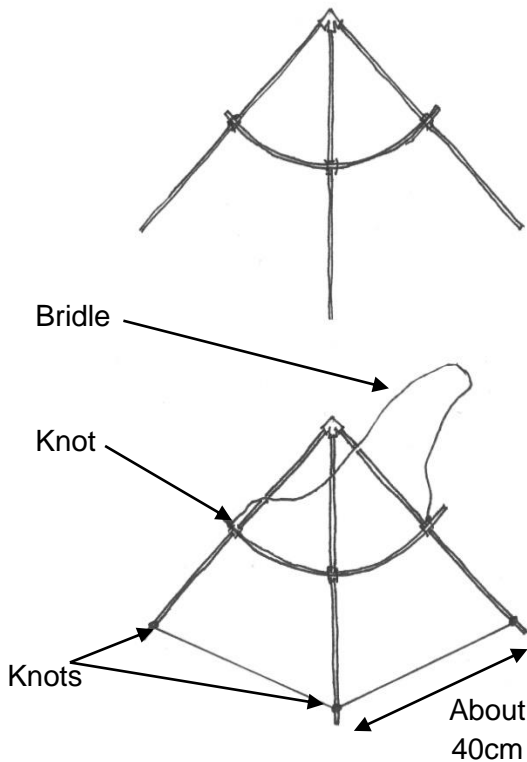
Department of Engineering



3. Cut 3 pieces of kite string about 40cm long. Use this string and square lashing to tie your 4th stick to the balance point on your middle spar.



Use the same knot to tie the outer spars to the spreader at their balance points. You might need a friend to help with this. Slide the spreader on the lashings so your kite is symmetrical, then reinforce your knots with a blob of glue



4. Cut 1m of kite line. Tie the middle of this string to the centre spar about 2cm from the end. Tie the free ends to the outer spars and try to keep symmetry. This is the spread limit string.

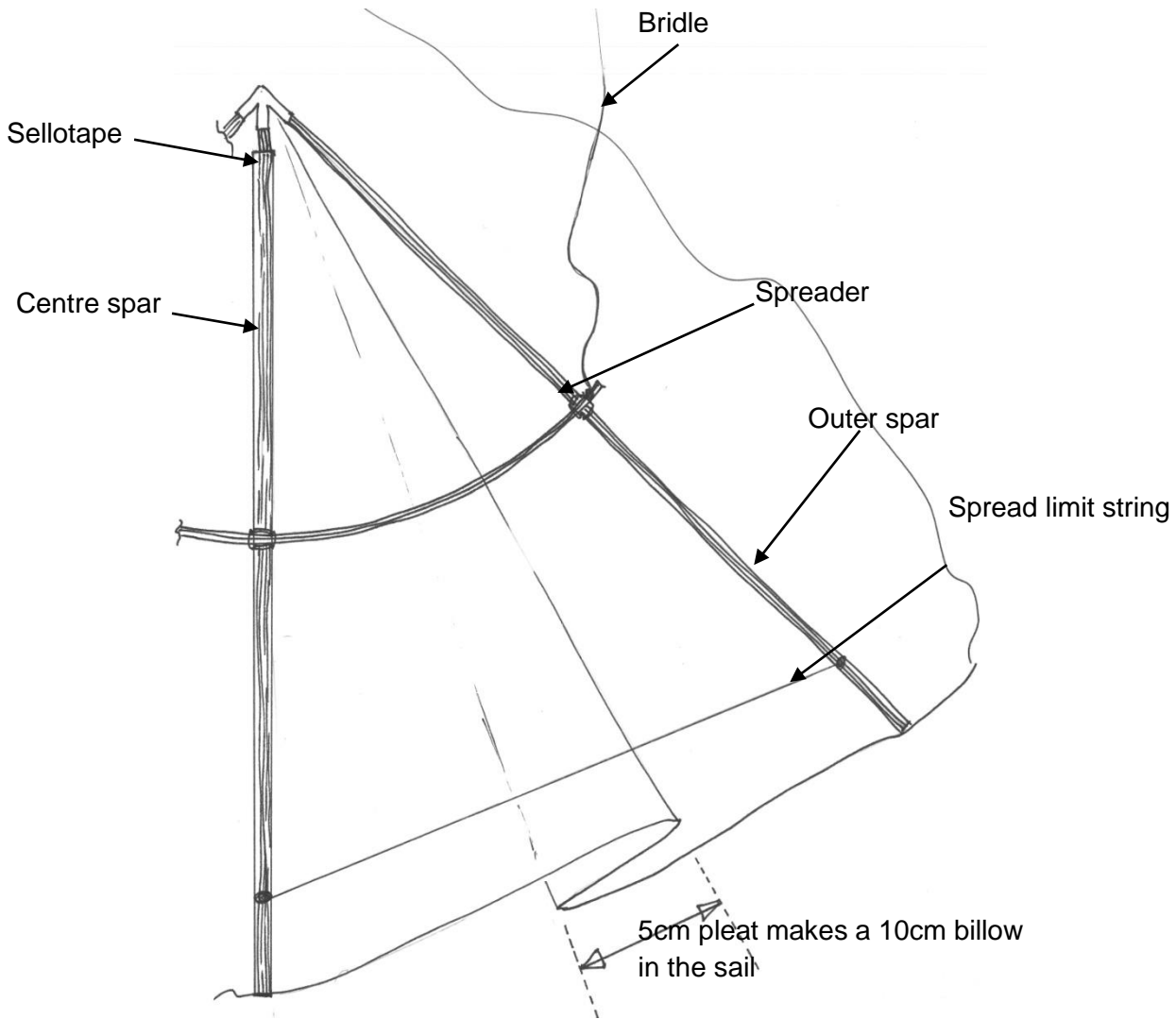


5. Cut another 1m piece of line and tie the ends of this string to the free ends of the spreader stick. This loose piece of string is the kite bridle, the flying line clips to the bridle.

6. Cut open a thin bin liner and spread it out in landscape mode and as smooth as possible to make your sail. Put the kite frame onto the sail bridle side up and sellotape the middle spar to the middle of the sail.

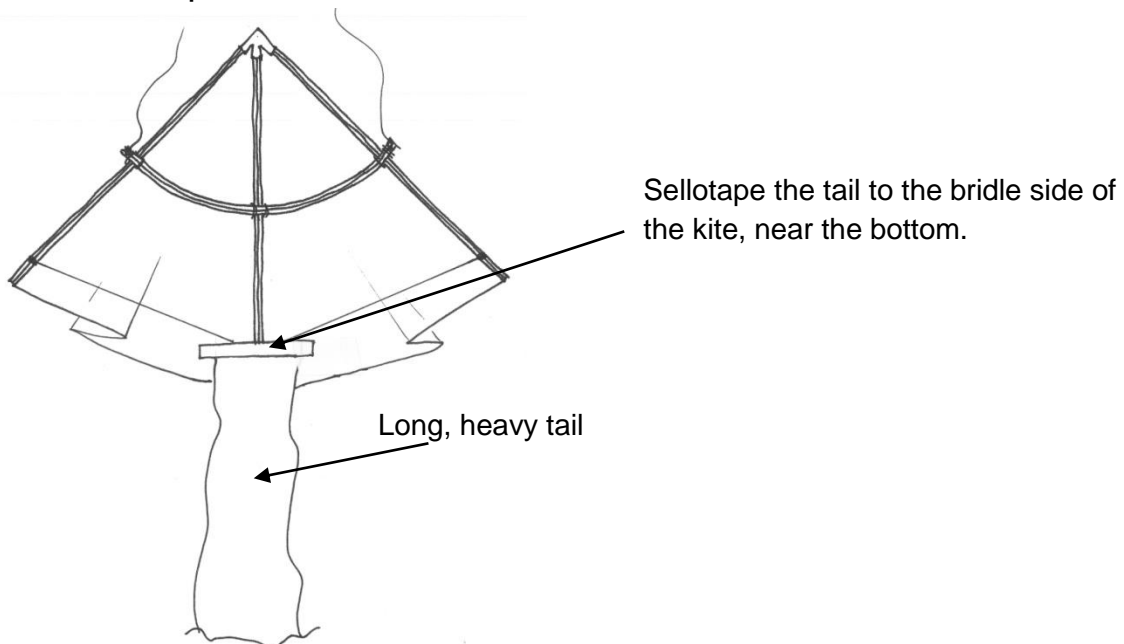
Hint: Ask a friend to hold the sail flat and smooth while you tape down the first spar.

7. Keeping the sail smooth, carefully fold a 5cm pleat near the spread limit string. Measure this carefully so your kite stays balanced. While your mate holds the slippery plastic in place, tape the outer spar to the sail. The pleat will make a 3-dimensional billow in your sail.



8. Do the same again for the other side

9. Add a tail. The kite will need a surprisingly heavy tail to balance it, use several pieces of thick black bin liner stuck together with sellotape or one long piece cut as a spiral.





10. Tie the rest of the flying line to the circular part of the swivel with a really strong knot. The other end opens like a stiff safety pin. Clip it on to your bridle and your kite is ready to fly!

Flying hints

Handle your kite VERY carefully, the dowel sticks are looking for a chance to break

Static test: Hang the kite from its flying line and check that the tail is heavier (lower) than the nose.

Flying site: Check there are no overhead power lines. Contact between you, your kite and a power line will kill.

Don't fly your kite if thunder was heard in the last hour. Lightning kills.

Find somewhere not too sheltered – Coe Fen, at the back of the Engineering Department is surrounded by trees and surprisingly wind-free. The castle mound outside the County Hall on Castle Hill is much better.

Wind out plenty of line – about 15m or the length of the kite building room.

Stand with your back to the wind and the untangled line at your feet. Lift up the kite with your dominant hand while keeping a firm grip on the line with your other hand. Put a foot on the reel for good measure. Hopefully, the wind will catch your kite and lift it in a stable flight. Pay out more line so it can rise higher.

Watch how your kite flies. Is it diving? Add a bit more tail to make the back heavier. Is it stalling – going nose up then losing lift? Reduce the tail. Triangles of sail material between the outer spars and the bridle may improve stability.