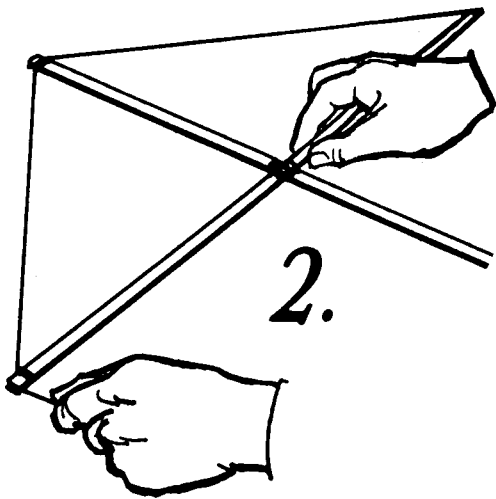


Making Ben Franklin's Kite - #141

From an article by Charles Garlet, published in *Early American Life*, April 1974

The construction of the kite Benjamin Franklin used in his electrical experiment in 1752 is quite simple. Here are Franklin's seven instructions: "Make a small Cross of two light strips of cedar, the arms so long as to reach to the four corners of a large thin silk handkerchief when extended; tie the corners of the handkerchief to the extremities of the cross, so you have the body of a kite; which being properly accommodated with a tail, loop, and string, will rise in the air, like those made of Paper; but this being of silk is fitter to bear the wet and wind of a thunder-gust without tearing."

Paul E. Garber, Historian Emeritus and Ramsey Fellow of the Smithsonian Institution's National Air and Space Museum, recently built a kite to Franklin's specifications. Paul, 74 years old and semi-retired, is the kite expert at the Smithsonian. He advises that the kite-maker gather these materials and tools:

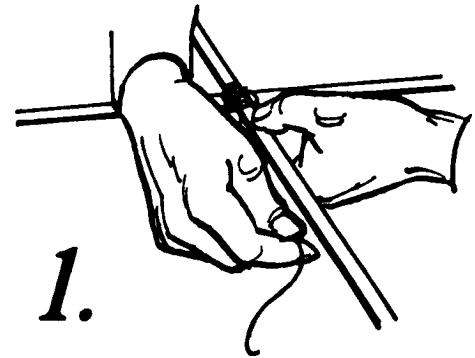


tail. To start, the tail should be about twenty times the diagonal dimension of the kite. Glue, It should be flexible and quick drying.

Tools. Scissors, needle, yardstick, penknife or small saw (a broken hacksaw blade will do).

Construction

1. Using cord and glue, lash the sticks at their center so that they are square to each other and will not slip.



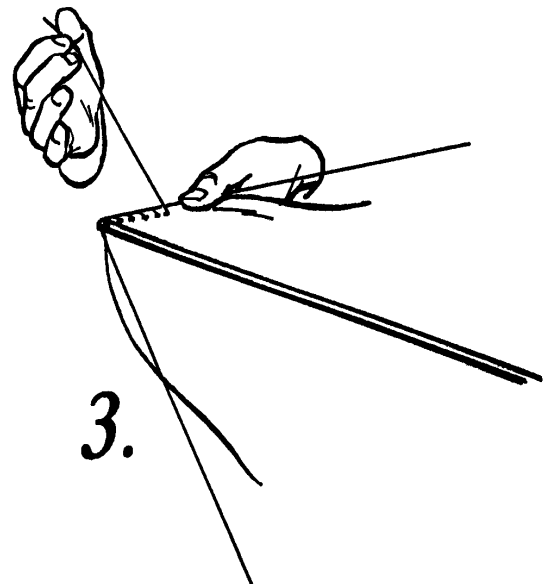
Silk Handkerchief: If you can't find silk use one of the sheer synthetics but not too sheer lest it fail to hold wind to fly. It should be about thirty inches square.

Two sticks of cedar, spruce, or fir, each long enough to reach the diagonal extremities of the scarf or handkerchief and about 1/8" by 3/8" in minimum cross section.

String. A good, strong cord for joining the corners of the frame and for flying the kite. Franklin probably used hempen cord.

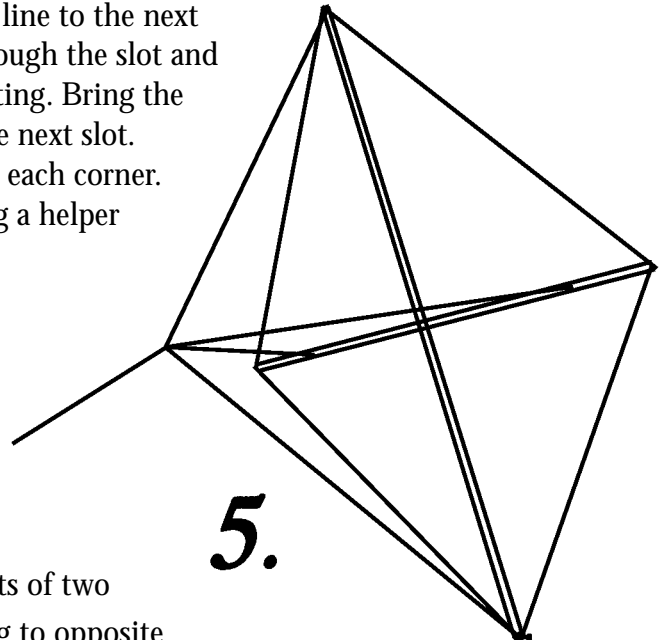
Thread to sew the scarf to' the frame.

Cotton cloth torn into strips an inch wide and two feet long to form the



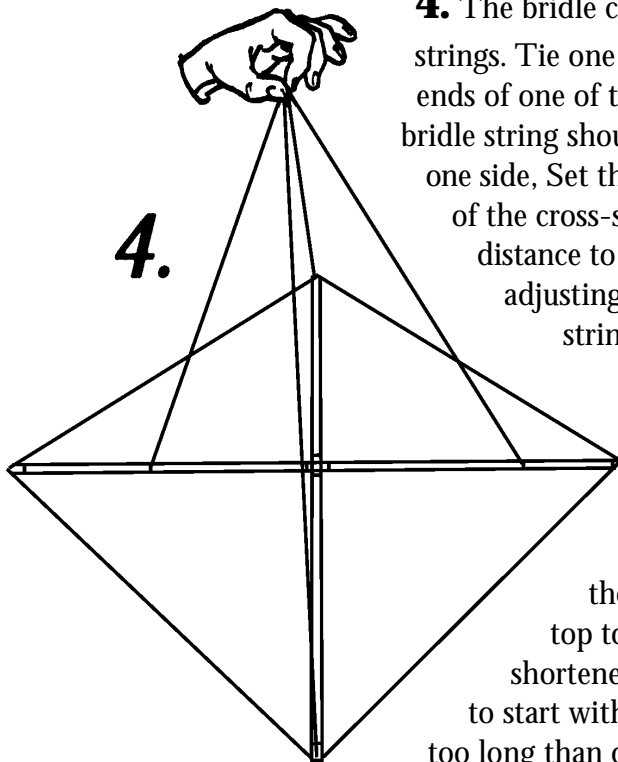
2. Frame the crossed sticks with cord. First saw a slot about a quarter-inch deep in the ends of the sticks. Then tie a knot about three inches from the end of the cord. Insert the cord in the slot, pull the knot up to the slot, continue the line to the next stick or corner of the frame. Pass the cord through the slot and wrap it around the stick twice to prevent splitting. Bring the cord back through the slot and continue to the next slot. Finally, tie to the original end. Be sure to glue each corner. Make sure the frame remains square by having a helper hold the sticks as you work.

3. The frame is now complete. Sew the silk scarf to the string frame. This is an overhand stitch. Take care to make sure the stitches are as close to the string as possible.



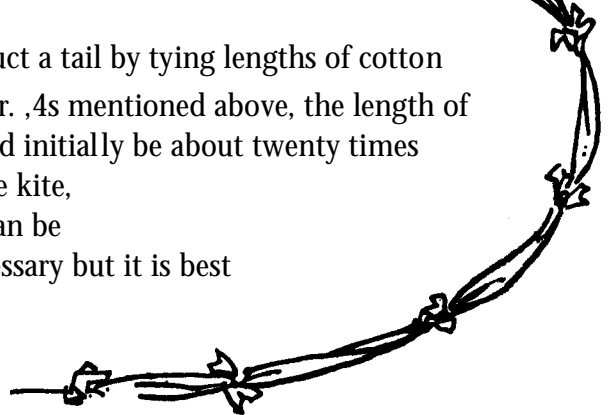
5.

4. The bridle consists of two strings. Tie one string to opposite ends of one of the cross-sticks. The length of this bridle string should be equal to twice the length of one side. Set the other bridle string in from the ends of the cross-stick at approximately one third the distance to the center. Balance is achieved by adjusting the bridle as you tie it with the flying string so that the kite hangs at a twenty degree angle to the floor



4.

5. Construct a tail by tying lengths of cotton rag together. As mentioned above, the length of the tail should initially be about twenty times the length of the kite, top to bottom. It can be shortened later if necessary but it is best to start with a tail that is too long than one that is too short.



Bridle strings attach to the silk side (front) of kite. Pass them through silk and attach to stick in rear. 