

The Flemish Splice

If you want it done right do it yourself! We have all heard that line before, but it always seemed particularly applicable in regard to bowstrings. Store bought endless strings are often too long or too short and cannot be adjusted for length. The serving on the loops often frays and leads to early string failure.

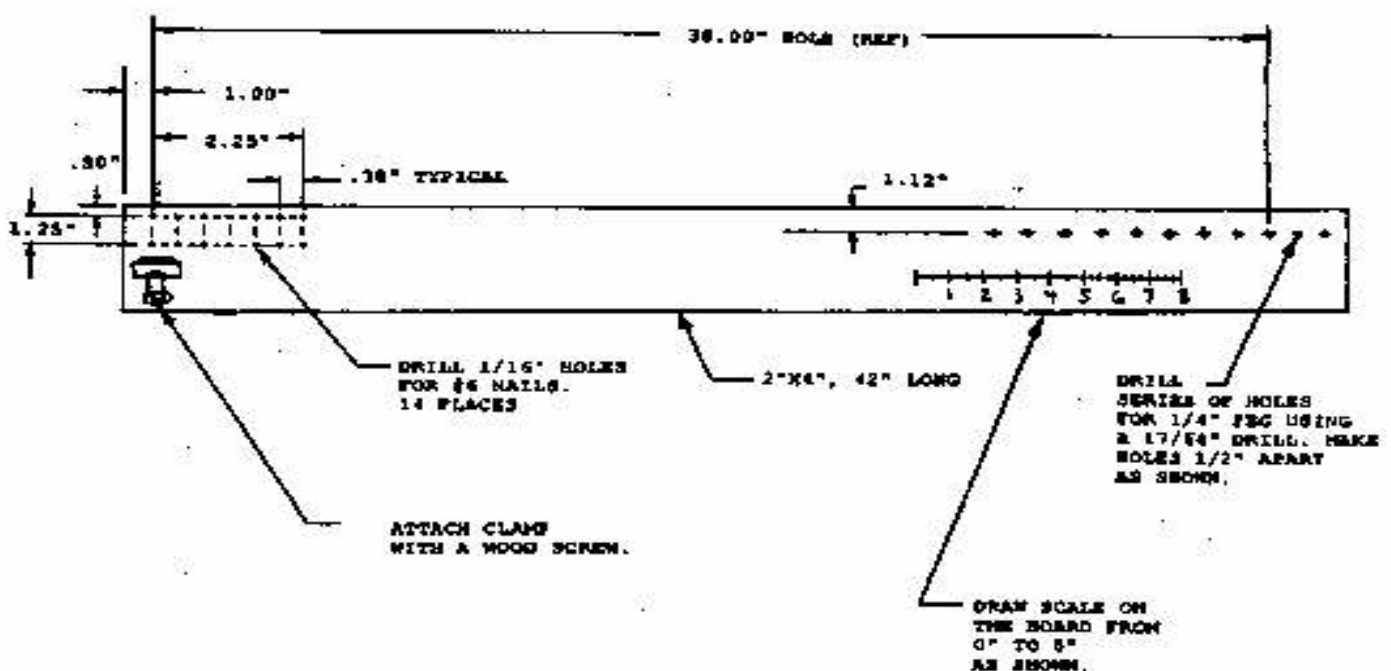
The Flemish splice string has several advantages over the common endless string for both recurve and long bow use. The loops of a spliced string are much stronger than those of an endless type. A fourteen strand endless has only seven strands passing around the nock. A spliced string has all of its strands around the nock and they are braided like a rope for increased strength. A spliced string can be adjusted for length by twisting to shorten or untwisting to lengthen. Spliced strings are not usually found for sale in local stores because they do not lend themselves to mass production.

Bow strings are one of the easiest of archery accessories to make. By doing it yourself you can gain some self satisfaction as well as getting a tailor made string. Also, for about the price of one purchased spliced string, you can buy the materials to make ten or so.

If you want to try splicing a string yourself, the following instructions will show you how. It's a lot like tying a shoelace. Difficult to explain, but easy to do.

String Materials and Tools

1. Bow String Thread Dacron
 2. Serving Thread Nylon
 3. Bowstring Wax
 4. Sharp Knife
 5. C-Clamp
- String Jig



THE FLEMISH SPLICE STRING JIG

FIGURE 1

String Jig Materials

- ? One 42" length of 2"X4" (pine shelving 3 1/2" by 42" long is OK)
- ? Fourteen #6 finishing nails
- ? One 1/4" peg - 2" long
- ? One small paper clamp

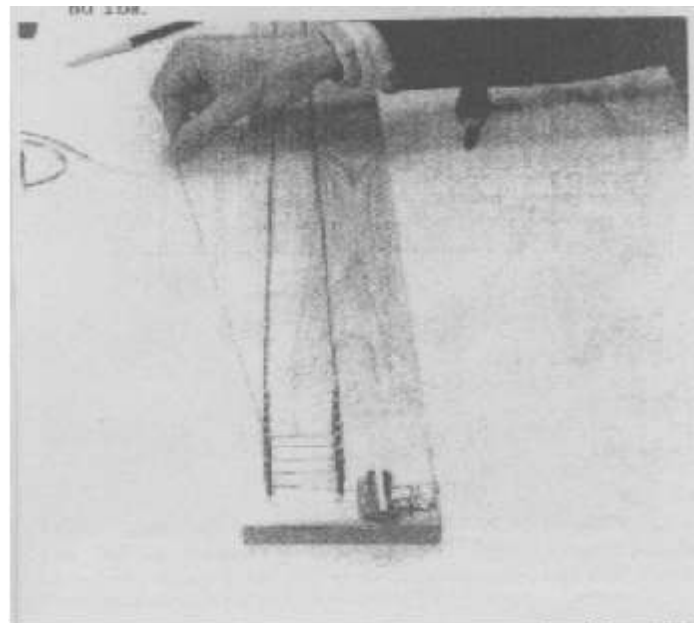
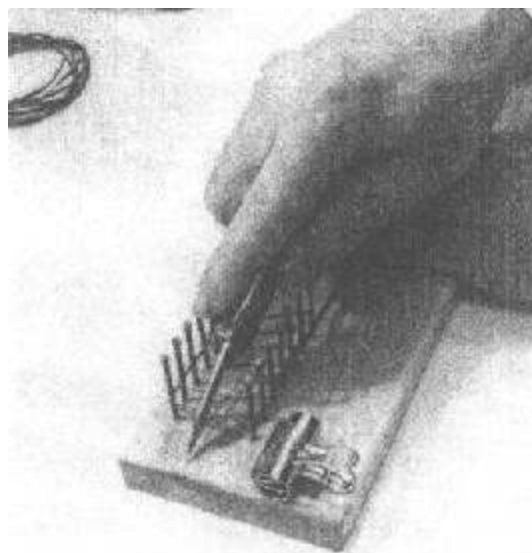
Procedure

1. Lay out the positions for the fourteen #6 nails as show in Figure 1. Predrill 1/16" pilot holes to prevent wood from splitting. Pound in the nails. Take care to keep them straight. Leave about 1 1/2" sticking out.
2. Drill a series of holes for the 1/4" peg using a 17/64 drill bit. Make the holes about 1/2" deep.
3. Attach the small clamp to the board with a wood screw in the approximate location shown in figure 1.
4. Draw a scale on the jig board from 0 to 8 inches as shown.
5. Look at the details of the jig in the photos of this article to clarify any questionable areas.

Notes

- ? Use a C-Clamp to secure the jig to your work bench.
- ? For a longbow 68" between the nocks, put the peg in the 38" hole.
- ? Moving the peg one hole will change the length of the string one inch.
- ? A fifteen strand string works well with bows up to 80 lbs.

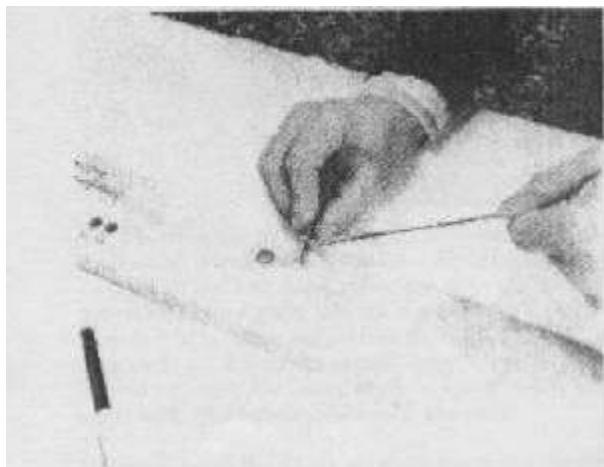
- 1) The work is begun by putting the end of the Dacron thread in the clamp. Wrap the thread around the outside of the nails and on down around the peg. Return to the nails and go back around the first set of nails. The second loop wraps around the second set of nails and the third around the third set, etc. Continue wrapping until



the required number of strands (usually 5) is completed. Keep an even tension on the thread at all times.

- 2) Clamp the strands against the Jig with the left hand and cut down the centre of the nails with a sharp knife. Sever all threads cleanly

- 3) Wrap one end of the thread set around the left index finger to retain the threads in the same position relative to one another. Leave 8 to 10 inches of the set sticking out. Press the string set against the jig with the edge of a sharp knife and draw the set sideways out from under the blade to 'thin out' the end. Be careful not to cut the end off.



4) While still holding the set, heavily wax the exposed end. Reverse the set around the left index finger and wax down toward the other end. Stop waxing when about 12" from the end and repeat step 3 to thin out this end.

5) After completion of step 4, coil the thread set and place it aside. Make two more thread sets exactly the same as the first.

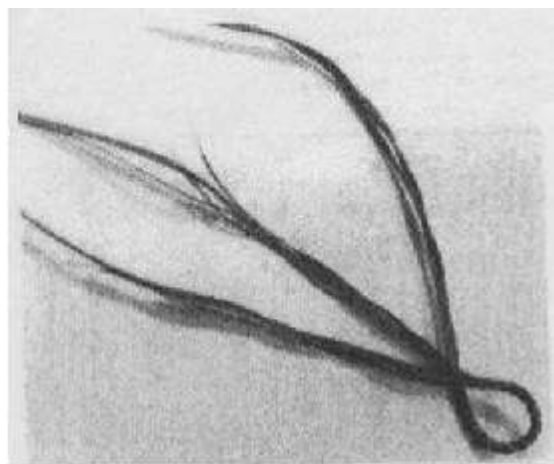
6) Take the thread sets and align one end of all three with each other. Measure 7 ¼ inches from the ends and grasp the three sets at this position with the left hand. With the tips pointing away twist each of the three sets in the counter

clockwise direction.

7) The thread sets have now become twisted strands. Take the left strand and twist it over the other two. The centre strand now becomes the left one. Twist it in turn over the other two. Continue this motion until 20 twists have been made. The strands will look like a short length of rope. It is necessary to continuously twist the strands CCW while pulling them CW over the top of the other two. Keep the braiding tight and uniform.

8) Spread the strands out as shown in the photograph. Notice that one strand is over the other two at both ends of the braid. Maintain this arrangement.

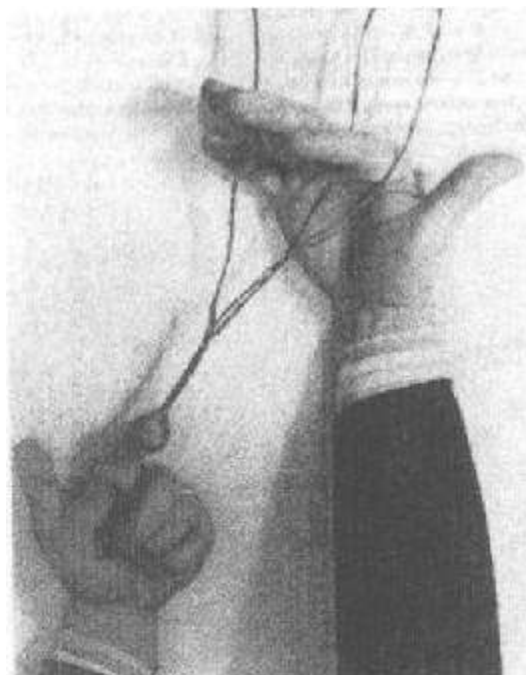
9) Press the two ends of the braided portion together. Be sure to keep the strands aligned as shown in step 8. The loop end of the string has now taken shape. Grasp the loop in the left hand and following the same procedure as in step 7, start braiding the throat of the loop. Keep twisting the strands CCW as you braid.



10) As the braiding progresses the strands will become tangled. Stop every few twists to unravel the kinks. Continue braiding the throat for 35 twists.

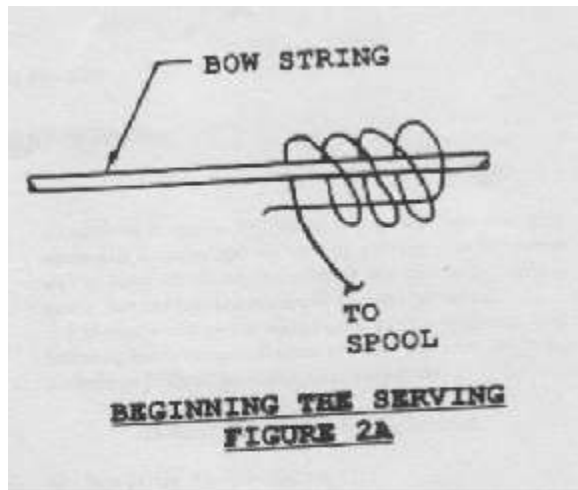
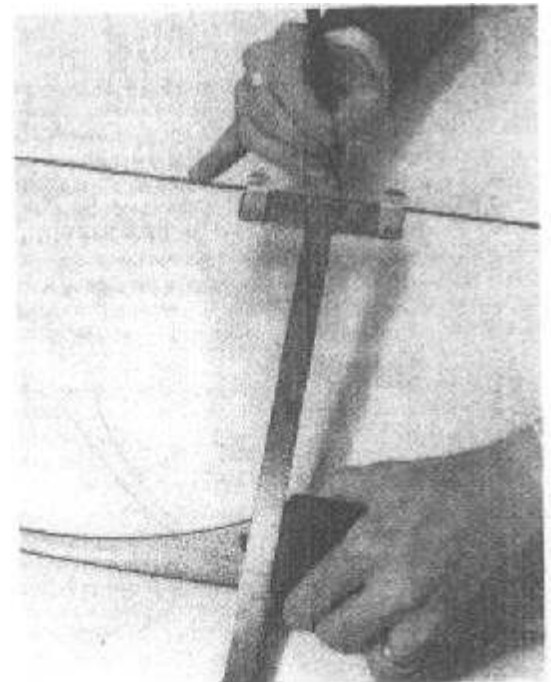
11) Straighten out the strands down to the other end. Make sure even tension is kept on each. Proceed to form the other loop by following steps 6 thru 10. For a conventional bow string measure 8" from the end and braid 26 twists to form the loop.

12) After completing the second loop the string must be twisted. Place one loop over the peg in your jig. Take the other loop and give it about 12 twists CCW to tighten it. Place a finger thru the loop and give a good tug on the string. If the work was done properly, the string will remain tight. It is now ready to be strung onto the bow. Rub down the string vigorously with your hand to melt in the wax that squeezes out.

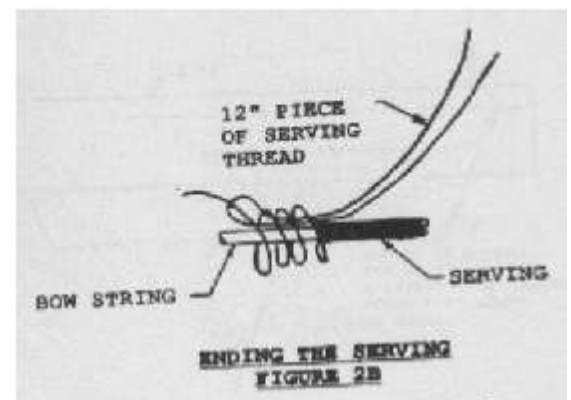


13) The string can be twisted tighter to shorten its length or untwisted to lengthen it. Maintain at least 6 twists to the string. Pull the bow a few times and allow the bow to remain strung for a while. This will give the string a chance to stretch fully. Mark the position on the string that is square with the arrow rest as shown above. Using the scale on your jig, mark the string 2" above and 6" below the centre mark. This indicates the area to be served.

14) Starting at the upper mark on the string, begin serving as shown in figure 2a. Keep a strong tension on the spool and tightly serve down 8" to the lower mark. Make sure there are no gaps in the serving.



15) The Serving is tied off with the aid of 12" piece of serving thread. After completing the 8" of serving, double over the 12" string and place a small part of its loop under the last wrap of the serving. Continue to serve over it for about 7 turns. Cut off the serving thread with about 6" left on it. Stick this end thru the loop of the short string. Be sure to maintain tension on the serving. Wrap the ends of the short thread around your finger and pull. This will bring the end of the serving thru. Snug it up tight and carefully cut it off. Put a little wax on this end of the serving.



I prefer to use feathers, but I have had very good results using fletching made from adhesive tape. Some tapes are more suitable than others. The correct "stiffness" is hard to describe, it shouldn't be too flimsy or too stiff, but remember that the fletch should be able to bend out of the way as it comes in contact with your hand or the bow. I have had success with tape made for repairing rips in plastic hay bale covers. I have also got reasonable performance from two or three other types that I have tried. Tape that comes on rolls about 48 millimetres wide is convenient to use.

Cut three bits of tape about 150 millimetres (about six inches) long. Pick up one piece and bend it lengthwise to form a "U" with the sticky side outwards. The base of the "U" is tucked lengthwise along the shaft. Now pick up the second piece and bend it like the first one. This one will be stuck in position a third of the way around the shaft from the first one, while the first bit of tape is still bent in the "U" position to keep it out of the way. Things can get a bit tricky here because the two bits of tape can stick to each other before you are ready. If you feel that the two bits of tape are sitting in the right position, you can allow the two adjacent wings of tape to stick to each other, thus forming the first complete vane. Mould the tape against the shaft to get it to stick well. The two bits of tape will sometimes stick without being exactly in the right position thus, skewing the vane or making it lumpy. It may still fly reasonably in some cases, but it doesn't look good. Now the third piece of tape is applied in a similar manner.

A big challenge with this tape fletching is to get three nice, flat evenly spaced vanes. This should come with practice. Another challenge is to end up with the vanes where you want them in relation to your nock so that you get the conventional "cock and hen feather" configuration with the cock feather at right angles to the plane of the nock.