

Knot



News

International Guild of Knot Tyers – Pacific Americas Branch

June 2013

Joseph Schmidbauer – Editor

ISSN 1554-1843

Issue # 88

Safety Rope Barricade **Joe Schmidbauer**

I presently work for the Boeing Company as a Toolmaker (Jig & Fixture Builder) on the 777 commercial aircraft program in Everett, Washington. Part of my job entails making, modifying and maintaining the work platforms that the production personnel stand on while building the fuselage, wings and other necessary parts of the aircraft itself.

It is important that the structures are safe so people don't walk off the edge of these work platforms that can be, at times, two, three and four floors high. Most sides of these platforms are edged with permanent handrail that is made from welded steel tubing. But there are places and situations where you need a removable barricade.

When I worked at the Boeing plant in Long Beach, California we would use a post and socket combination with chain strung in between as the best and safest means. Then I transferred to Everett and I was surprised to find that this removable handrail combination was done with rope instead of chain. I must admit that, at first, I was a bit dubious of the security or the overall advantages gained from using rope. I guessed that cost was a factor in the decision. The factory in Everett is, in a word, huge! Under one roof they assemble not only the 777, but the 747, the 767 and the new 787 as well. There must be many miles of this rope barricade throughout the whole plant. In fact, it turned out to be very durable and quite strong – easily replaceable and quick to fix.

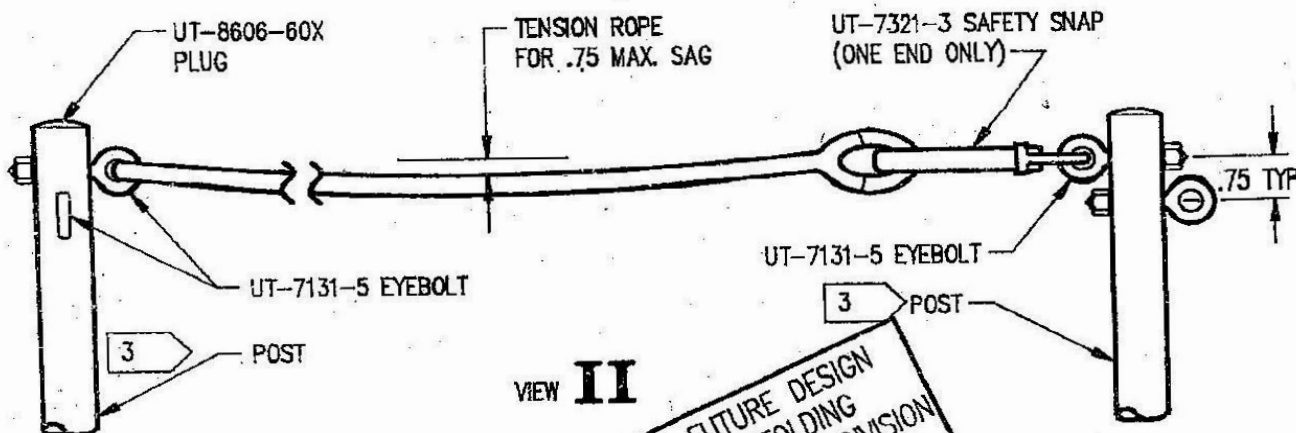
The technique to make the knot structure itself is fairly straight forward and standardized. The rope used is yellow ½ inch hollow-braid polypropylene. There are a number of items you need before you can start: tape, a sealing nozzle and plastic tubing.

Tape off the end of the rope and insert it into the plastic sealing nozzle. These nozzles are readily available at all Boeing "Point of Use" carts and one nozzle will last through several uses; these can double as a useful splicing tool and makes the job go much easier. Also cut off two 6 inch lengths of ½ inch plastic tubing. These will be used to prevent chafing. Have a snap clasp or eye bolt ready – for attaching the rope to the posts as needed.



Plastic Tubing, Rope and Sealing Nozzles

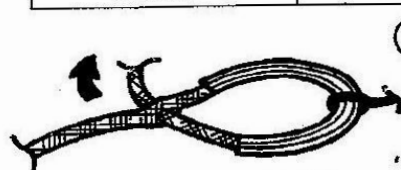
Slide a piece of plastic tube onto the rope. Also slide your snap ring or eyebolt onto the rope as required. Measure off eighteen inches from the end to begin your first tuck. Be careful as you tuck not to disturb the strands as you go through the rope. Pull the rope up snug. Bring it around tuck again and tuck again by the opposite side of the plastic tube. The hitch that is now formed is the secret to the success of this technique. This helps to hold everything in place during daily use. The final step is to now tuck the end down at the place where the first tuck emerged. This must be done to lock down the end and keep it from working loose. Some do not do this, they mistakenly tuck it farther down the rope and the end will work loose with time this way.



VIEW II

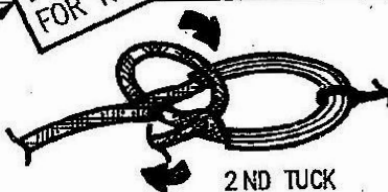
APPROXIMATE MATERIALS				ROPE
PIPE 1 1/2 INCH STD. STL.	SOCKET UT-8606-	SNAP UT-7321-3	2	PLUG UT-8606-60X
36 FEET	8	21	147 FEET	8

DISCONTINUED FOR FUTURE DESIGN
12-31-95. SEE SCAFFOLDING
DESIGN PERSONNEL IN YOUR DIVISION
FOR REPLACEMENT PARTS.



1ST TUCK

AFTER PLACING END OF ROPE THRU SNAP OR EYEBOLT, INSERT END OF ROPE THRU CENTER OF MAIN ROPE.



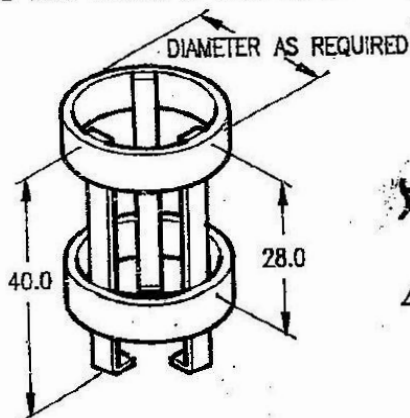
2ND TUCK

BRING ROPE BACK TO BOTTOM OF LOOP AND AGAIN TUCK THRU THE CENTER OF ROPE AND DRAW TIGHT.

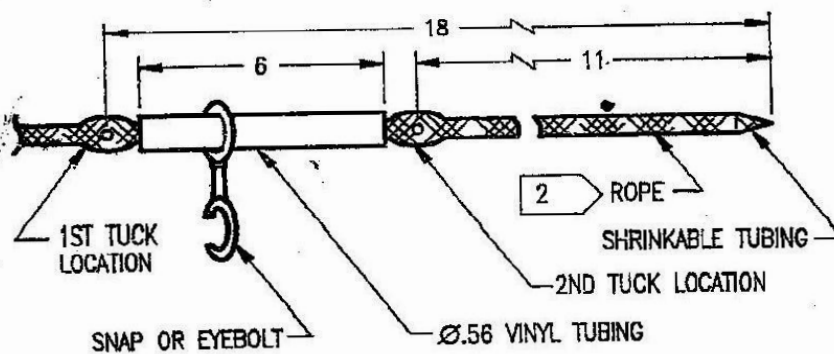


3RD TUCK

LOOSEN STRANDS OF MAIN ROPE ENOUGH TO INSERT REMAINING END INTO 1ST TUCK & AGAIN DRAW TIGHT.



BARRICADE POST & SAFETY ROPE STORAGE
HRS .25 x 4 x AS REQUIRED
WELDED CONSTRUCTION



VIEW I SHOWING CONSTRUCTION AND TYING SEQUENCE OF ROPE

MATL. NOTED	TREAT. ---
TOL. ---	
DRAWN BY M. WRESSSELL	11-20-91
CHECKED BY C. SODERLUND	11-20-91
APPROVED BY L. CHUTE	11-23-91

SCAFFOLDING STANDARD
SAFETY ROPE BARRICADE

BOEING

UT-8612

SHEET 2
UTILITY TOOLS

(B) C.O. 2-22-95 MW

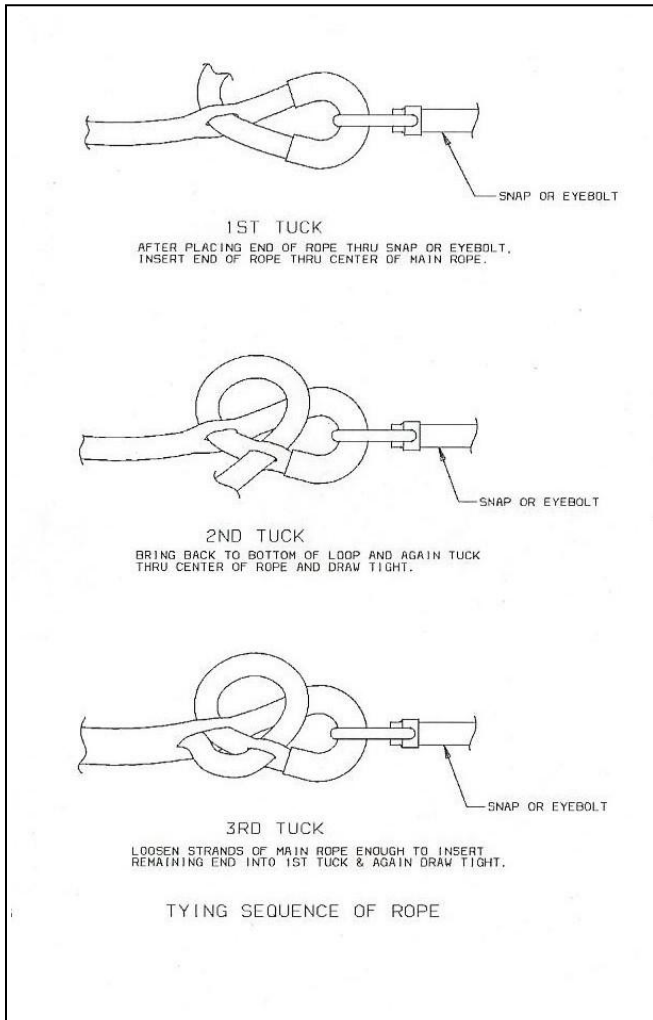
From the Mail Bag

oy Chapman from , Washington

R sent us this letter: "Our Parking lot is 60 yards more or less from our front door. Alice likes her water in pint containers but I prefer the gallons – nobody will drink the tap water. Even as recent as two years ago I could carry the 24 lb case of pints in my arms but now I can't. I am too lazy to go in and get the dolly so here is what I do: with a fathom of paracord I use ABOK #564 to put in 5 or 6 knots near one end. I put each knot over the neck of a pint plastic bottle. At the other end I put any quick hitch over the neck of a 2 liter coke bottle. A second fathom of cord makes a second yoke for two 1 gallon plastic jugs. I slip the yokes over my head and let the jugs and pints hang down my front, grab my cane and head off to the apartment – too lazy to make two trips. The total weight is more than I could carry in my arms and still use my cane but as a yoke it is fine."



Yesterday I used the string of overhand knots and a pile hitch to make a quick yoke to bring in water and pop and still leave my hands free."



The Boeing Company assumes no liability for the rope method here described

And that is really that for this task. Now repeat again, again and again until it becomes second nature. I'll see you at work.



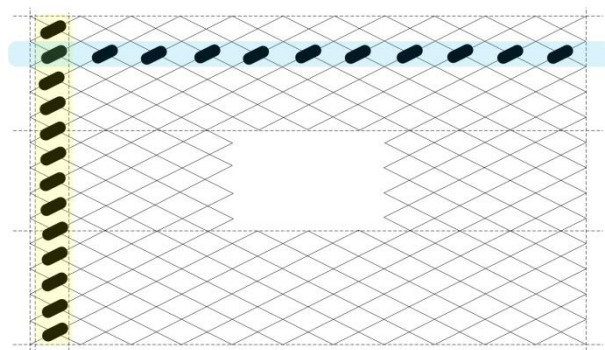
Completed hitched and tucked rope ends

Holey Knots – 002

Pieter van de Griend

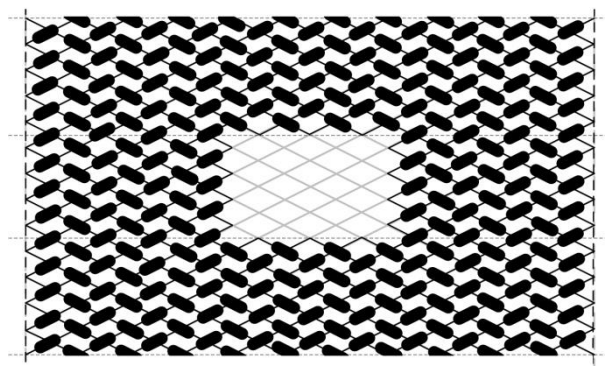
In Knot News #87 we saw a $p/b=22/13$ Regular Grid with a symmetrically positioned excision of 3 by 4 bights. The challenge was to come up with a coding for that grid. Here I would like to show you how you can put in the U1O1 coding, also known (by some) as a Casa Coding and something like a Tractor Tire Coding.

As is well known a crossing has a so-called parity, a type. In the grid projections it is either / or \. Let us call them Z and S respectively. If you take a good look at the given $p/b=22/13$ grid, you will notice that you can apply rows or columns of identical crossing parities. In the diagram below the yellow column shows how you could apply a Z-parity to all crossings in any of the columns. The blue row shows how you could apply a /-parity to all crossings in any of the intersecting rows. If you would follow that pattern, you would assign half of all crossings a Z-parity. You can assign all remaining rows and columns an S-parity.



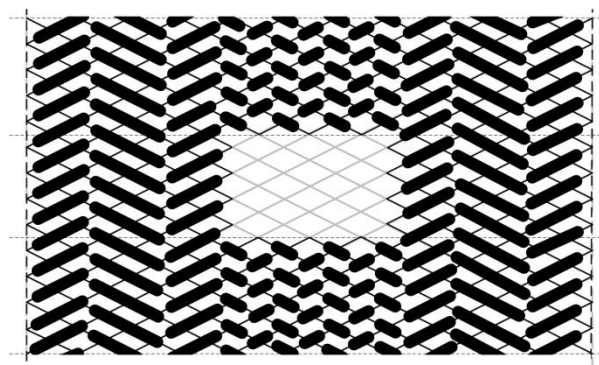
Punctured Regular Grid with a (blue) row and a (yellow) column of Z-crossings

What we see emerge is a coding in which any row gets a constant coding, but any column gets a constant coding too. This is the so-called Casa Coding. The grid is completed in the figure below.



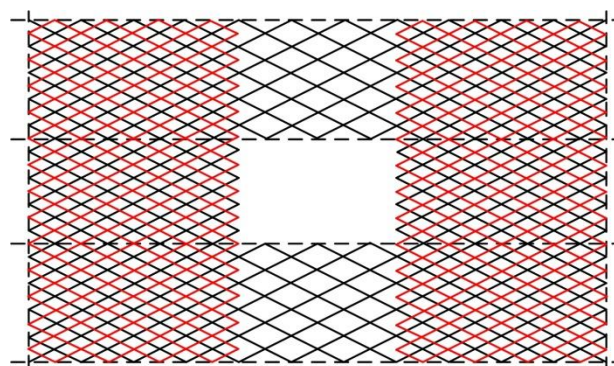
Punctured Regular Grid with a Casa Coding

Of course it is possible to apply a coding different from the Casa Coding. The two outermost sections of the grid are well suited to apply a kind of Gaucho Coding, which we shall call Tractor Tire Coding, as that is what it resembles. We have an O2U3O2 segment to the left and to the right, with a connecting Casa Code segment. The result is given below.



Punctured Regular Grid with two Tractor Tire Coded segments connected by a Casa Coded segment.

Although the construct below represents a neat 1-Holey Knot, I would like to chip in some complaints. First of all the structure has lost its mirror symmetry. The left and right hand segment are identical. We have simply translated the coding instead of mirrored it, losing out on mirror symmetry. This is because the connecting segment does not allow us to retain the mirror symmetry, as it has 3 horizontal bights. Second, this kind of structure, although it allows an interwoven Regular Grid component in the left and right hand segment, does not scale well when interwoven throughout. Just try completing the inter-weave on the grid below. Finally, we can put in a column coding, but why can't we get a row-coding in place? Well, the answer to that question was given in Knot News issue #66. We need a particular kind of grid to accommodate an A-pass row coding throughout.



Interweaves in the left and right hand segments

©Pieter van de Griend 2013

Thoughts on Braiding

Hooey Michaels

Ever since I first learned the Pineapple Knot many years ago, it has remained my favorite braided knot. It appears in virtually every braided piece of work I produce. The trick of being successful with this knot is to work the knot into as many different shapes and sizes as possible... so it can fit any application.



Basically what I mean is I have kept a record of the inter-weaves needed for a lot of different Turk's Heads. Not only a written record, but as I always ask students of mine to do, every time a new pineapple knot is worked out (or any knot for that matter) I save an example of it.



The reason for this is that when a new use for that knot comes up, it is much easier to just take the saved samples and fit them over the object to see which of them will fit best. It eliminates a lot of guessing. An example of this is when I decided to

braid over a cow magnet with a single strand pineapple knot. Having never covered anything of the same dimensions and shape as the magnet, I went to the saved sample knot collection and tried a few until I found the one that fit best when tightened.



My first try at braiding over the magnet produced coverage that was without gaps anywhere, and gave a smooth surface – perfect coverage the first time without a lot of practice runs with knots of the wrong configuration.



The lesson here is record keeping: not just written records, but having physical records of your work as well. Memory is fallible, but written and physical records of your work will always get you through.



Adjustable Ancient Sling
A Modern Tale
To Labradors Everywhere
Jim Long

Dogs love to chase balls. They seem to love it even more if they get to chase more. And that means throwing the ball farther. The first hunters had the same need. Animals are still dangerous – even after you hit them with a rock. This motivation caused the sling to be invented. Now that we have “powder-actuated lead projectors” we can use the ancient sling for more peaceful pursuits. And your dog will thank you.

Materials Needed

1. *Cord* – hollow-braided nylon or polypropylene works best but any braided cord can be made to work. I start with a piece as long as I can hold my hands apart, then cut this piece in half. Longer slings throw farther but are harder to use. I suggest starting with this “length of arm” size as the best fit.
2. *Flame* – any source of heat to melt cord ends.
3. *Projectile* – ball(s) for the dog to chase.
4. *Dog* – to bring the ball back.

First a bit about modern braided synthetic cordage – it’s not all nylon. Not all of it melts like you’d hope or expect. Test it first. What is the best kind to use? Whatever scraps you have on hand to use! Assuming the braid has enough “hollow” inside to bury the working end, and the cord itself isn’t so huge as to be a problem, you have made the right choice. The smaller the better because of windage, as long as you can bury the ends. But you must be familiar with how it melts. The secret is to use just enough heat to make the material melt just enough so you can mash it together without burning yourself. Your goal is to melt a rather long point on three of the four ends, but I don’t want to get ahead of myself.

Pointing the Ends

I start by lighting a candle. That keeps both hands free and saves the butane. Heat the working end in the flame until you see it just start to melt. Blow on it a little to get the surface to “skin over”, then carefully mash and roll it with your fingers to work the end into a nice long point. You don’t need to worry about too long unless you like having blistered fingers. Sometimes you need to move more of the end into the flame – quickly and deliberately – to make a longer point. Practice will both make better points and give you calluses to help next time. You’re going to need to get this right before any of the rest of it will even make sense, so get melting and mashing.

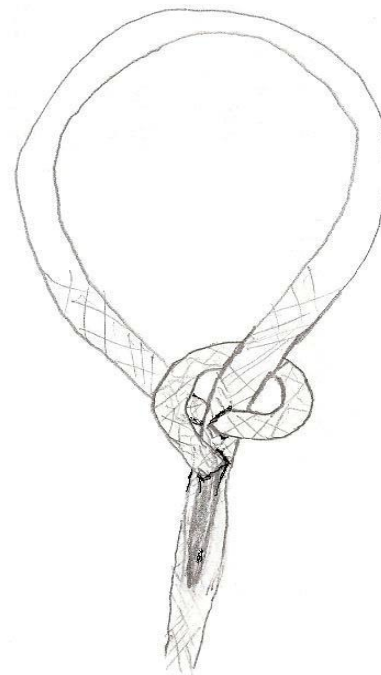
The forth end will be frayed to make a release knot pull away when you throw. If you pointed up all four ends, pick the ugly one to cut off later. The points just need to be solid, smooth and small and not as pointy as you might think.



Making a Point

Making the Adjustable Eye Splice

Let’s start with the retaining loop that goes around the fingers of your throwing hand. Making this adjustable eye splice will give you the practice you’ll need for the Pocket, plus it lets you adjust the Loop later. This can be useful if you’re wearing gloves or share it with someone with differently-sized hands.



Notice how the pointy end plunges through the cord? Find where the individual yarns in the braid cross, notice how there’s a little diamond shaped hole between the yarns? That is where the pointy end goes – in the hole on one side of the cord and straight out the matching hole on the other side.



Finding the Hole

Be careful to NOT disturb the braided fibers ever, anywhere, but especially here. A splicing needle may help open the holes, or any slick, pointed tool. If your point grabs at the fibers, fix it and go back to melting and mashing until the points are slick and not too sharp. I call this point "the Crossing Point".

After you get the end fairly through, the rest should be obvious. Pass the working end around the standing part and over the crossing point. Bury the working end just a hole or two past the crossing point. Bury an inch for practice, but remember you'll be passing cord – maybe a lot – in and out for adjustability.



Tuck



Hitch



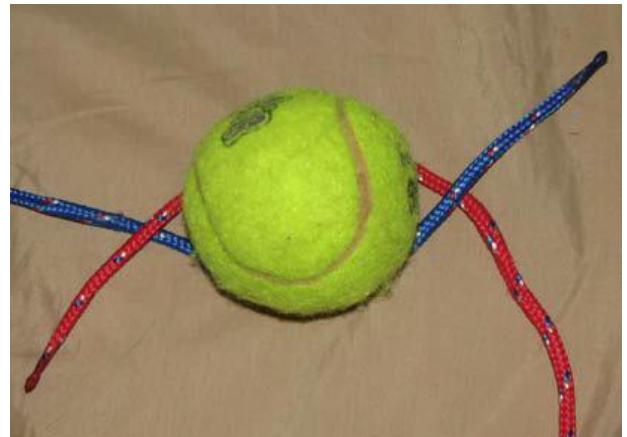
Bury



Finish

Make the Pocket by Adapting the Eye

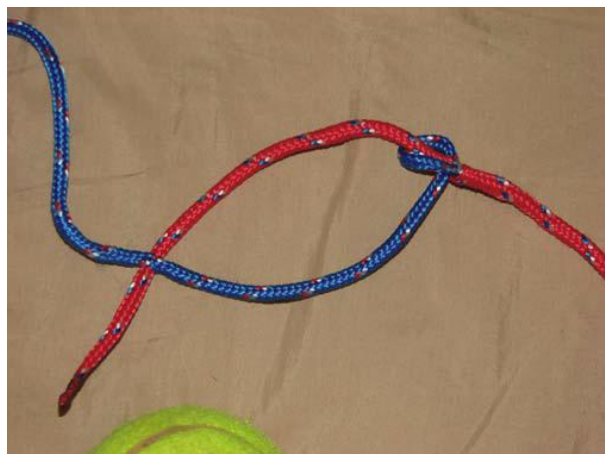
Now that you see the parts of the eye, consider using the standing part of one eye as the working end of another, and vice-versa. I will use different colors so I can describe it more easily.



Start with the largest projectile you expect to throw. The idea is to size your pocket big enough for the biggest, so you can just bury more of the ends as the projectiles get smaller. Estimate the size of the eye as about 1/3 the size of the projectile. The pocket has to slightly hold the ball without letting it slip through. Look at the globe – if your pocket fits where the tropics go around the globe, that's perfect.



First, take the end of the blue cord and pass it through the crossing point of the red cord. Lead it around the red cord and bury it inside just past the crossing point.



Repeat going the other way.



When the pocket is sized properly, finish fairing the buried part.

Adjusting the Pocket

Take your next projectile. I'll use a golf ball. Arrange the pocket around the same Tropic of Capricorn as you did on the tennis ball.



Push each half of the excess pocket through and around the standing part and milk it into the bury.



When it's fair again, you've just converted calibers.



I don't know how much "bury" you'll need but for this sling you're more interested in looks than security. You won't strain the cordage much throwing toys to dogs!

Time for the Release Knot, aka "The Trigger"

Any knob knot you know will work here, as long as it's hard and arranged so that the ends enter and exit from opposite sides of the knot. You will fray the last inch or so to act as a brake keeping the trigger knot from smacking the ground in front of you. The Ashley Stopper Knot is as good as any.



Now that you know how to adjust the pouch and loop, get a projectile, adjust the pouch to fit, make sure the trigger knot hits the crotch of the retaining loop eye, and go make friends with a dog!

As for the method of throwing, I can only say do NOT spin it around and around your silly head expecting this to work. There may be a dozen "correct" ways to throw things with a sling, but that's beyond the scope of this article. I hope you will enjoy using this as much as I do.



Having read the previous *Knot News* newsletter, I feel it necessary to offer a bit of feedback and opinion – to the Guild, to Joe Schmidbauer and to those that contributed to issue #87. I found the newsletter to be excellent, without fault, and very encouraging. It has brought what the Guild is all about back into the newsletter: the human factor. Showing what Guild members are actually doing with their particular aspect of the craft. It offers what others in the Guild have accomplished with their own efforts. I particularly like the piece by Frank brown on his recent work with **“Stick and Strings”**. I like it because it shows his initiative and creativity, and it suggests to all Guild members what can be accomplished from so small a beginning. Thank you Frank for your time and effort, and yes, I do have some suggestions for you regarding covering your woodwork. The Turk’s Head, and of course my favorite knot, the Pineapple Knot, in its many variations, offers a lot to choose from. I would be glad to help you along. Contact me and I would help you take the first steps. I would like to see more articles like Frank’s that have members connecting with each other and sharing bits and pieces of their knowledge and experience. That is what I believe will hold the Guild together. And Joe, editor of the newsletter, thank you for your efforts as well. You have made good choices and are leading the Guild in the best possible direction by uniting members in the common effort, no matter which aspect of the craft each member follows. Keep up the good work. Guild members, keep in mind that you are the Guild, and you further its purpose by your efforts too. Get more involved. Reply with feedback, solutions, constructive criticism, or whatever it takes to keep it all together in forward positive motion.

There is one other person I would like to mention and for a definite reason. Sally Anaya, basket weaver extraordinaire. She contacted me after reading my first open letter to the Guild in a past issue of *Knot News*. Her attitude towards what she does could not be better, and it shows in her work – which is absolutely fabulous. You can see her work if you go to *Sally Anaya Fiber Artist*. Sometime in the near future I intend to purchase a piece of her work. What she contacted me about was to say that she had not considered her work very closely related to knotting or braiding. *But it is!* Her work is very much a part of what the Guild stands for. There are so many aspects to knotting and braiding that represents the Guild that your own particular aspect of work, mainstream or not, belongs here as well. Sally, thank you. Good job all around.

Hooey Michaels

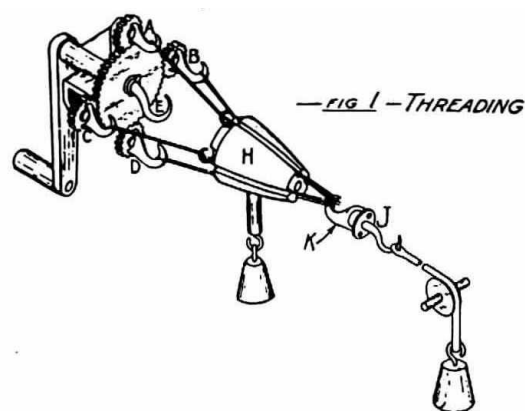
Scouts Make Rope

José Hernández-Juviel

Darrell Aushman

The Pacific Americas Branch visited the Fullerton, California Scout Troop #1223 in March to teach them about rope – the many kinds available and how it is made. José Hernández-Juviel and Darrell Aushman took the time to visit the Scouts to teach them about 3-strand twisted rope and showed them samples of manila, sisal, hemp, cotton, polyester and polypropylene.

The Scouts were given the choice of making cotton or sisal rope. Most of them chose cotton.



They used the Sherwood Rope Making Machine.





The machine was stationary.

At the other end was a swivel hook connected to a ten pound weight on a pulley to maintain even tension while allowing for shortening.

A 1.5 pound weight was used on the top, which also helps maintain even tension.



[Left] Jose at work with the shuttle

[Above] Scouts learning about rope



