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The Codline Knot

by Pieter van de Griend

The small end of the trawl is termed the bunt or cod, and has a drawing string through the lower meshes, by which the bunt is carefully closed before the net is shot or thrown overboard.

J.C. Wilcocks The Seafisherman 1865.

Prologue

The Codline Knot is related to deep-sea trawlermen of modern times. They use it to close off the so-called codend at the rear of a trawlnet. It is a remarkable fact that in this age of technological advances, which are especially visible in the fishing industry, trawlermen still prefer to use actual knots to tie up their nets. One would be inclined to think that a surefire mechanical contraption, replacing these intricate mission-critical structures, would be used. Yet there is not. This paper is mainly about two of the knot-devices which appeared onto the trawlerman knotscene during the past 125 years over which this bluewater activity has been developing in the North Atlantic basin. For those not acquainted with trawling and its terminology, let me first explain what a codend and codline are:

Codend: The tail of the trawl, which holds the fish. It is usually made of two pieces of double netting, which are straight along the sides. The term codend is used regardless of the species being fished [11, p1].

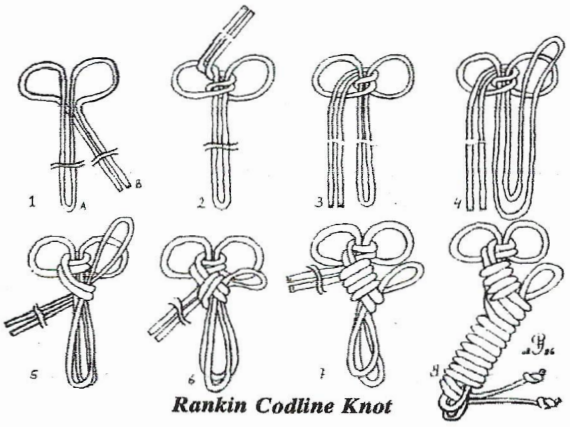
Codline: A thin rope with a high breaking strain, preferably nylon or a similar synthetic, threaded through the meshes at the very end of the codend. It is used to close the end of the trawl, but in such a way that it can easily be released [11, p1].

The job of tying the codend is important. Failure to do this properly, or at all, can mean a lost tow. So it is the responsibility of the mate or boatswain. The protocol onboard usually also privileges the same person with the untying of the Codline Knot. That is not without reason, since its release may bring a few tonnes of

cascading fish along with it. Demands posed to the Codline Knot are diverse. It must be easy to tie and untie. Additional to that it must have a locking device to allow the crew to move around the catch and give them time to be away to a safe place, when they release the knot. Of course it must be secure, which means that it may never open spontaneously.

Rankin Codline Knot

The first time I encountered a Codline Knot was on board the Faroese trawler Rankin TG500 in 1982. The deckcrew closed off both codends of the redfish trawl with a very intricate appearing knot. On the bridge I found Skipper Sonny Johannessen willing to show me how to make the presumably oldest form of (effectively) functioning Codline Knot. Later I spoke with his father, who told me this knot had been brought to the Faroese fishing scene by British trawlermen before World War II.



Rankin Codline Knot

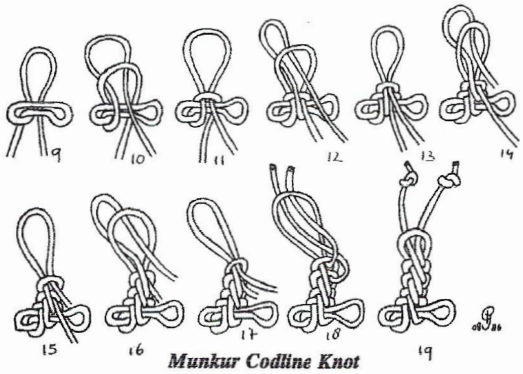
Fig.1 shows how an opened codend *without netting* looks like, i.e. all parts of the codline are drawn. Imagine the meshes of the codend caught by both loops, which appear in all drawings. Here the codline is already drawn centered, i.e. the length of the loop A is approximately equal to the lengths of the 2 ends at B. Often there is a marker seized near to the middle of the codline at A to facilitate centering. The visible parts are those that come out from the meshes at the seams of the codend netplates. This is usually where the final seizings of the belly rope are attached. The codend is closed as much as possible by pulling both the loop at A and the two ends at B. This may be accompanied by some kicking, jerking and uttering of some fancy words in order to coax the codend meshes to snuggle together as close as possible.

Make a Half Knot with A and B (fig.2). When tensioned it will spill into a Half Hitch (fig.3). Make a loop with A by bending the ropes back, to lay alongside themselves (fig.4). Take a roundturn with B around A's loop (fig.5). Take a further 2 turns around the standing part of A's loop and B's part coming out of the Half Hitch, to the left of B's first roundturn (figs.6,7). In the following we shall refer to them as the primary turns. They are to tension the Half Hitch even more. Make a final 4 to 5 (secondary) roundturns to the right of B's first roundturn and tuck B's end through A's loop. Jam B's ends by tensioning A's loop (fig.8).

Sonny Johanessen tied two Overhand Knots in B's ends as a security against them slipping through the loop. He said it was probably unnecessary to do so, because he had used this knot all of his life and had never known it to open by itself. In the following I will refer to it as the Rankin Codline Knot. It being one of the two principal forms of Codline Knots to be found in use today in the North Atlantic Ocean and North Sea fishery. I learnt the other form on m/t Munkur FD 942 from Skipper Kristin Hansen.

Munkur Codline Knot

In the initial stage of its tying process this knot already differs radically from the Rankin Codline Knot: there are no double ropes. The subsequent gap due to the single ropes in the codend is closed off by taking a loop from the first Half Hitch up through the gap at the other codend seam (fig.9). After that there is a sequence of interlocking loops (figs.10-17). That process is terminated by tucking both strands through the final loop (fig.18) and jamming them by tensioning that loop (fig.19). The two Overhand Knots serve as stoppers to prevent the knot from opening by itself. Like the Rankin Codline Knot it can open spontaneously if parts of it happen to capsize, but on the whole it is a safer construction.



Munkur Codline Knot

Crews operating in the North Sea have done much to propagate knowledge of this knot. British fishermen call it the Half Hitched Codline Knot, or even Chain Knot [5, p56], in Dutch it is named de Vlecht [4]. Danish fishermen know it by the name of poseknude [2, pp10-11], [7]. From an American source I have learnt it to be called the Puckerstring Knot [8], a name that does injustice to these majestic knots in the inch thick braided lines. Despite the abundance of names to choose from I will refer to it as the Munkur Codline Knot here.

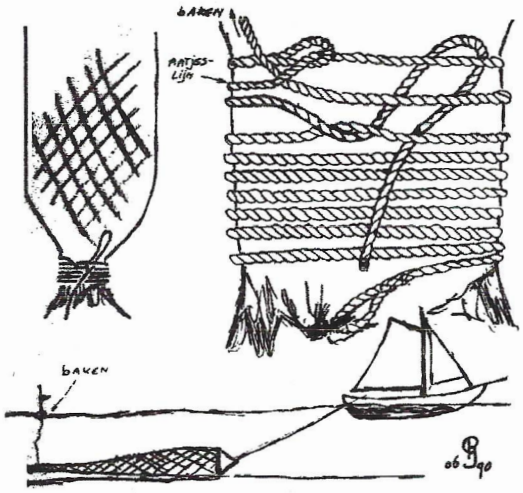
As with all observations, one is only confronted with a single phenomenon or event to which an explanation is appreciated. That is what I experienced upon seeing these complicated knots. They posed a challenge regarding their possible origins.

Hypothetical development model

Consulting the sparse literature on Codline Knots [2], [3], [7], [9], [11,p105] and learning from other trawlermen I came across a number of variants to the Rankin and the Munkur Codline Knots. Therefore it seems unlikely that Codline Knots are devices, which have spontaneously occurred some nice Tuesday morning out on the blue ocean, but have evolved instead. That contention is supported by the fact that trawls, on which these knots occur, are contraptions whose evolution has been greatly influenced by the cumulative experiences of many trawlermen, gathered over even more trawlhours. However, I fail to see any clear sequence of developments in neither the history nor the structure of the Codline Knot. There are simply too many people involved and too many occasions on which a codend had to be closed off, for such clarity to occur. On the other hand I do see roughly four phases in a hypothetical development.

1. Initially simple binding knots were used around the rear end of relatively small codends.

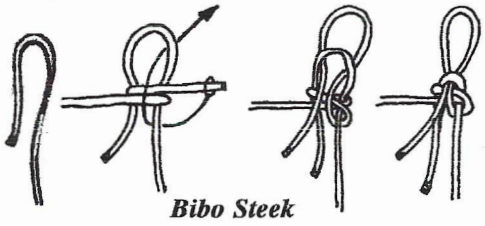
If the earliest form of trawl was a small tapering bag, dragged through the water, then it seems easy to accept that its closing device need not be more than a binding knot with or without a few roundturns taken around the rear end of the netting. This is shown by the meticulous Peter Dorleijn and was still being used by the Dutch IJsselmeer fishermen during the 1900-1960's [1, pp74-78].



2. The use of slipped knots to facilitate opening.

Slipping knots was presumably the first step in making them openable. Indeed the A-loop of the Rankin Codline Knot seems to suggest the idea that a slipped Reef Knot was initially used. In any case the first few serious jammings of a simple binding knot would soon show that it had to be toggled or kept slipped, preferably in such a way that the slipping segment remained totally free of tension. On the other hand, dragging a partially filled codend over the ocean bottom is a sufficiently dynamic system to undo any bad knot.

An improvement would be to lock both ends and loop by jamming them in some way or another. Simple solutions to this rope problem, such as the Bibo Steek, are to be found [10].



Bibo Steek

3. Codline reeved through the end meshes demands a change of closing technique.

Bigger trawls, enabling bigger catches, makes it difficult to prevent the roundturns from slipping off the netting. This would make it plausible that the codline would be rove through some of the meshes. To obtain a symmetrical load on the netting it would seem a natural and symmetrical sophistication to reeve the codline through all terminal meshes of the codend. However, this would require different techniques for tying up that codend. Reeving the codline through an open codend results in a surplus of rope when closing the codend. This has our next problem is knocking at the door.

4. Getting rid of surplus rope.

On large trawls codlines are pretty long to begin with. Moreover, minimalisation of material spent in realising the knot to prevent opening of the gap in the Codline Knot, due to load induced stretch of the material, leaves most of the codline unused. Secondary turns in the Rankin Codline Knot and the Chain Knot in the Munkur Codline Knot, are not only for to absorb the remaining tension by increasing friction, but also for to get rid of the rope surplus in a handsome manner.

Epilogue

The foregoing tacitly assumes that Codline Knots were developed at sea. However, it is more likely that at least parts of their development took place on shore at earlier date. Structures resembling the Munkur Codline Knot show up in millers' hands when sowing up of bags of flour. Such bags need easy opening. There is also evidence that 15th century Inuits used similar knots on their kamiks, i.e. for tying up their footwear. In 1992 Gerda Møller at the Danish National Museum showed me an array of such boot knots found at the Greenlandic archeological site named Qilaqiksoq in the 1980's [6,p43]. The plaited laces were carbon dated in the interval from 1475 to1525 and showed the same knotting principle as the Munkur Codline Knot. The structures are used here to enable easy opening of the boots when covered with snow and ice.

One aspect I would still like to say something about. Fishermen are a rough crowd and do not really care very much about anything, certainly not the knots they tie, unless it's either touching their money or when they want the job done as fast as possible to go get some sleep. Pragmatists as they are the latter demand gets them to develop extremely efficient knots, about which I will fill some later articles. However, considering the direct economic importance of the Codline Knot the amount of superstition that surrounds it is amazing. Faroese and Icelandic trawlermen state that the man who makes many tucks and turns when tying the Codline Knot thinks his wife is unfaithful. Some say you should not go out to the fishing grounds with the knot

laying tied on the trawlerdeck, others the opposite (in case you should forget to tie it on the first shoot). In his book Redmond O'Hanlon has some further colourful notes. He who tied the knot before a big catch ties it from then on. Moreover, if he tied 13 loops, then there must always be the same number from then on. Sometimes the man tying the knot will not show you how he ties it, because there is the risk the magic is lost if the secret is told [5,p56].

Why this superstition exists I am not sure. As a rule trawlermen are quite down to earth. Their life at sea forces them to live and work in terms of strict protocols. If breaches of these ways of working can get you killed, then maybe the opposite will result in reward. It took me 6 years to realize that nobody in his right mind should go to sea on a trawler, even though you are promised to be well paid upon possible return. However, inspite of all hardship to be endured during your days out, your paypacket's content is directly dependant on the proper tying of the Codline Knot!

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[11] World Fishing: *The Fisherman's Manual*, 4th edition, Faversham 1986.

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Stiphout October 2004.

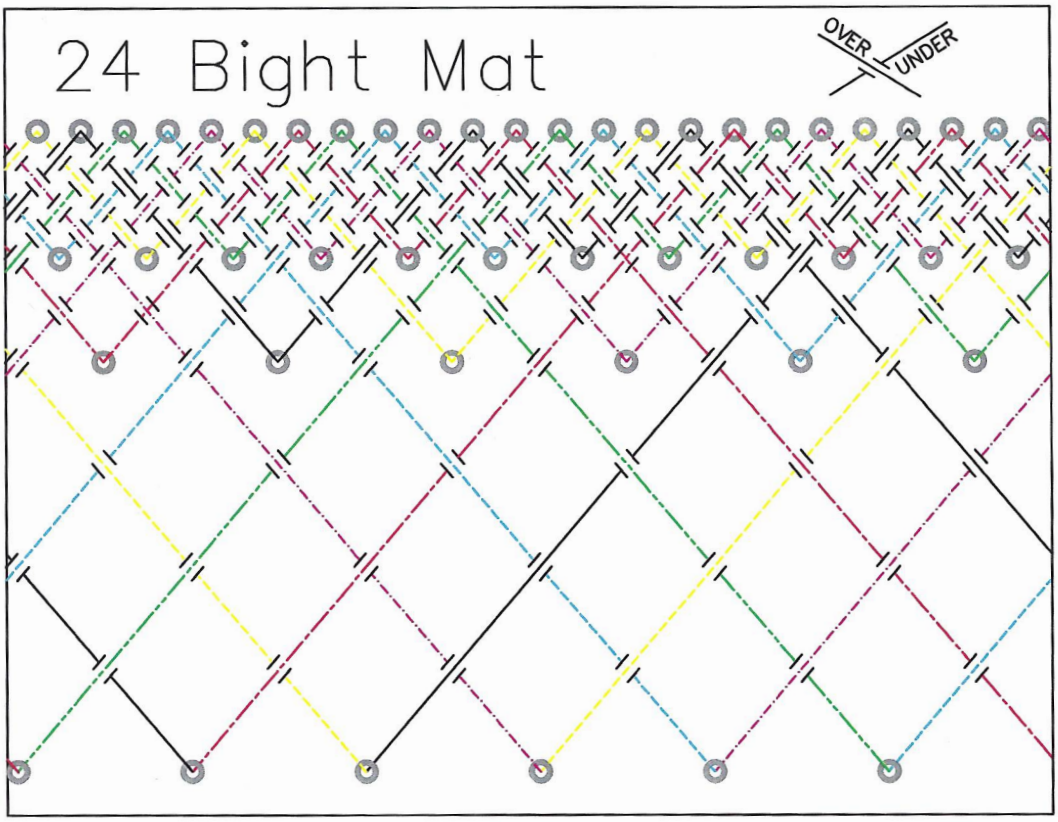
Twenty-Four Bight Mat
by Pat Ducey

In this edition of ***KNOT NEWS*** there is included a template for a 24 Bight Mat. This knot is not in Ashley's, but it is an example of closing one end of a square Turk's Head, similar to Ashley #2360 on steroids. This knot started out as a 5 lead x 24 bight Turk's Head. I closed one end to 12 bights and then closed that end again to 6 bights. When I pulled the knot flat, it was lumpy in the middle where six bights all wanted to be in the same place. I tied it with the center six bights going over two/under two. This took care of the lump in the middle and makes a good round mat.

24 Bight Mat

To use this template you may have to trim one edge to make the overlap on a toilet paper tube a perfect match. Fill the toilet paper tube with newspaper to keep the nails secure. I like to cover the nail holes with clear tape so the paper doesn't get damaged with nails going in and out. I usually pull out about 18 feet of string and start anywhere. Unlike Ashley, where there is a definite starting point and circles to indicate where you have to go under, I employ a guide showing all over/under crossings. It is up to you, the knot tyer, to remember

24 Bight Mat



what color you are on and what color you have already tied. Good luck!

If you have questions or problems with this knot, I moderate a chat forum at Knot Heads World Wide website on drawing knots using AutoCAD, and there is also a chat room on that website for the IGKT-PAB that I keep an eye on. Post questions there and I will get back to you.

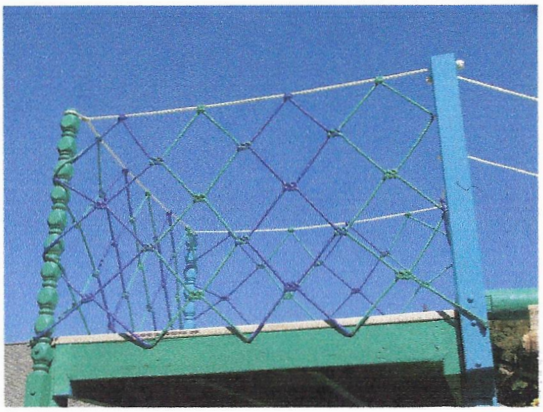
How I Spent My Summer Vacation

By Paul Nagle-McNaughton

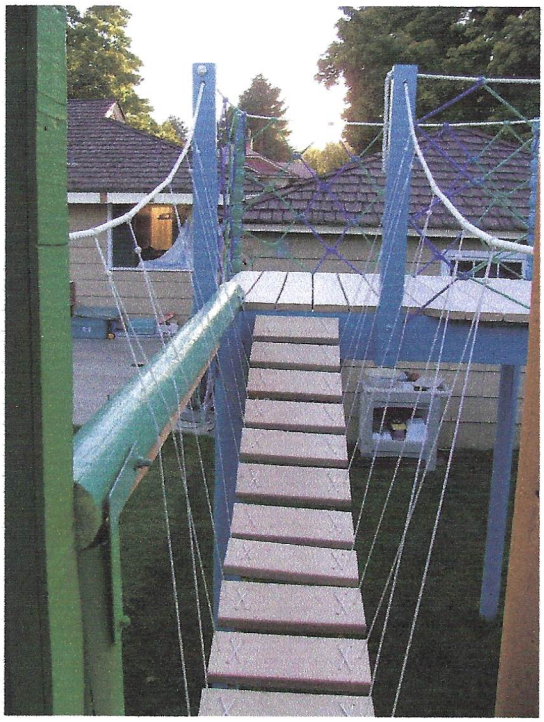
We moved into our new home a little over two years ago. We inherited an elevated playhouse in the backyard that rested on four posts. Nearby was a four-posted, trellised arbor that was part of a homemade swing set and run down herb garden.

Our original plan was to remove the old swing set and arbor, and spruce up the playhouse for our two sons (now eight and eleven years old). However, I discovered that the arbor poles were well set in cement and would probably be a lot of work to remove. As an alternative, we came up with what eventually became our *Crows Nest Project*.

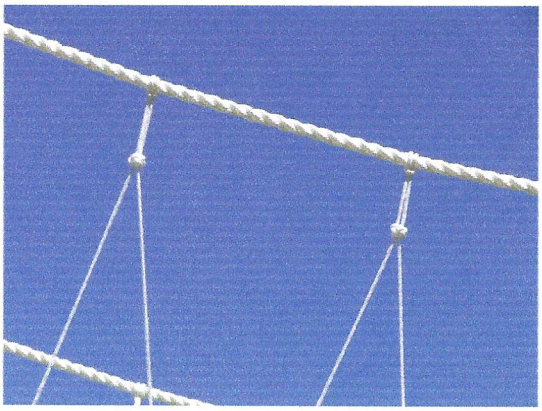
Over the course of the summer we built some raised flowerbeds to replace the run down decrepit herb garden and installed a platform on top of the four arbor posts. We worked as a family to paint the playhouse and platform cheerful new colors. I purchased some recycled corner posts and wood timber, and I surrounded the platform with rope netting consisting of a series of carrick bends. This became our ship's Crow's Nest.

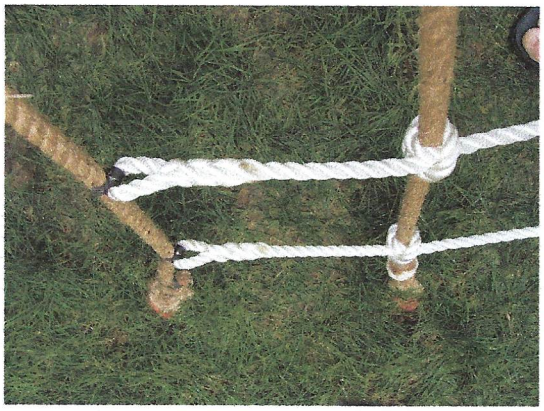


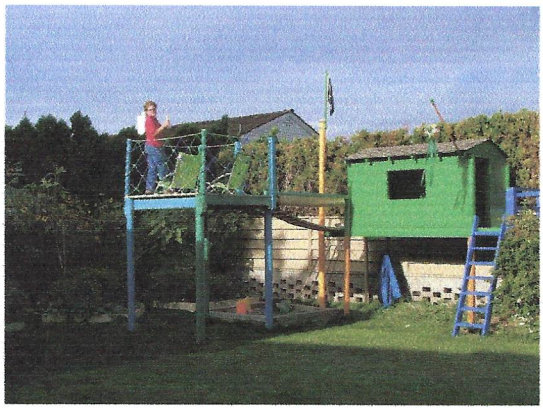
To add a little adventure, the Crow's Nest is connected to the playhouse by a rope bridge. To reach the rope bridge you can either go up the stairs and through the playhouse, or you can "climb the rigging" as if you were scaling a mast using the "ratlines" that I tied across some shroud lines to make a rope ladder.



The result of our efforts is a summer backyard project that allowed me to practice some practical nautical knot tying, culminating in a unique play structure all the family enjoys. The sand box we installed the year before that sits below the rope bridge makes a fine beach to add to the mix.







My sons have christened our "ship" the *Coral Sword*. To completr the scene we installed a flag post and halyard from which my sons can proudly hoist their Jolly Roger flag. "Ahoy there mates. Prepare to be boarded!"

Paul Nagle-McNaughton is a land-locked knot tyer who lives in the desert region of central Washington State. He can be reached for more details or comments at naglemcnaughton@nwinfo.net

Hello From the President

Roy Chapman

I've had several requests for knotted work and have referred them to folks I knew might want to do the task. This isn't working very well. Would any member who wants to tackle work for money please write or email me to get on my "list". That way when I get a request I'll be able to connect the person who wants work done with the labor pool who might want to do some work for pay.

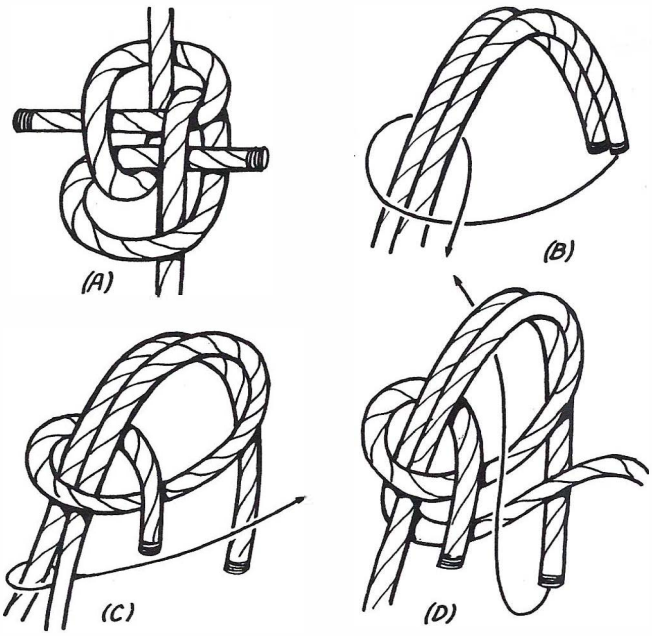
And just for curiosity's sake: I have one spike with a name and eight without. That is to say I have only one with a name. Do you have any with a logo? What percentage of your collection? My crowbar says "Stanley" and my rockbar had a name, now worn away... no big deal but did the maker of your favorite spike put his name on it?

From the Mailbag

Bob Solon of [redacted] Ohio wrote this response to the article on the Zeppelin Bend in KN #46: "No wonder the Rosendahl Bend/Zeppelin Knot is not so popular today. The pictures that show how to bend it have it laid out on the deck. Can you really tie it that way in the dark? Back in 1983 Geoffrey Budworth wrote in *The Knot Book* that in 1961 Desmond Mandeville made a bend called Poor Man's Pride. It turned out to be the Rosendahl Bend.

It was still a bear to bend.

Leave it to Ettrick Thomson of Suffolk to come up with The Solution. Using Thomson's method the Big-Z is easier to tie than a Rigger's Bend. With a little practice you can zip one out in no time without fumbling around on the deck in the dark. It is so symmetrical that you can check your work in the dark.



And another great suggestion from **Bob Solon**:

While geocaching last weekend with Miss Madonna, I came across the perfect, modern, sail needle case. It's a 4" x 1 ⅛" brown plastic tube with a snap cap. Off the shelf it contains M&M's. Purists might not like this because it is made of plastic.

In an attempt to make it presentable use a variation of French Whipping (ABOK #3450) with #30 white cotton or something smaller. Middle the line around the tube with an overhand knot, and then merely go with half hitches in opposite directions. You'll like the herringbone look. Run it all the way up to the rim and secure it with an extra tuck in each direction.

The Prophet talks about a Flat Sinnet Knot (ABOK #1380). I learned this as a Spanish Ring Knot. The 5 lead arrangement looks best to me, especially if you follow it around a second time. Put one on each end to preserve the herringbone look.

White shellac is the easiest preservative. It will dry to a nice creamy hardness in about 2 hours. The colors will almost match and it will smell like pine tar for about a year or two.