

# Knot



# News

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## Hjalmar Öhrvall on Knots (3) Influences and Impact

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*Vår svenska litteratur har med Prof. Öhrvalls bok fått en lucka fylld. Glädjanda är, at det är ett svenskt originalarbete, som borde snarligen framträda i utländsk dräkt, då näppeligen en sådan knut-encyklopedi någonstädes existerar.<sup>1</sup>*

Gösta Langenfelt 1917 [31, p87].

### Prologue

In our first article on Hjalmar Öhrvall, we presented an overview of his knot-works. In the second part we showed how he laid a foundation under Knot Knowledge Management (**KKM**). Here we assess the impact of his knot-writing efforts. It is not our intention to grade his activities, but rather pursue an approach by objectively listing citations and charting recorded reactions from his contemporaries and successors. Our central questions will be: "How did Hjalmar Öhrvall influence others?" and "To what extent did he succeed?"

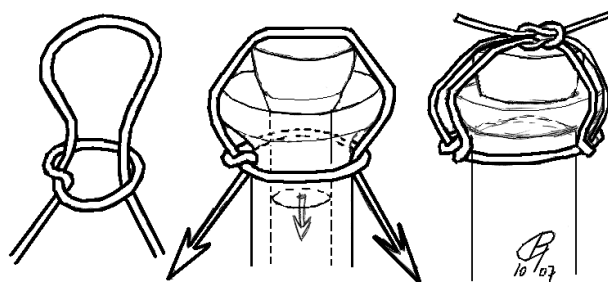
Upfront we admit to having knowledge of merely a few referential traces. All stem from the Nordic and Anglo-Saxon knotting literature. We shall assume they suffice to paint a reliable picture of Hjalmar Öhrvall's followers. Note that when source A is not acknowledged by source B, it remains uncertain whether or not author B was aware of source A. Moreover, knot authors have no strong referencing tradition. Whatever determines propagation of source-knowledge makes for an interesting KKM-question with which we shall not be concerned here.

<sup>1</sup> With Professor Öhrvall's book, our Swedish literature has gotten a lucky streak. Fortunately it is an original work in Swedish, which should soon become translated to other languages, because such a knot encyclopedia does not yet exist anywhere else.

## Influence on Martta Ropponen

The earliest references to Hjalmar Öhrvall's work are by his countrymen, whom we shall meet later, and Martta E. Ropponen-Homi from Finland. In the period 1927-1933 she published seven reprints of her *Esperanto-kurso*, a course in Esperanto [19] and, in 1931, a charming little knot book, titled *Solmukirja* [42].

She did not have much to say about Hjalmar Öhrvall, as his name does not occur in the text, but an (undated) *Om Knutar* is cited in her bibliography. As languages, Swedish and Finnish are miles apart, but large parts of Finland speak Swedish, not so much vice versa. It is reasonable to assume that Martta Ropponen could read and understand Hjalmar Öhrvall's work. The latter is evidenced by the following example.



One peculiar structure which is often mentioned, but went without the aid of an illustration, in all of Hjalmar Öhrvall's publications is the so-called Chemist Knot (**Apotekarknut**). It is used to force a cork down a bottle's neck and constrict it there [56, p32], [57, pp151-152], [58, p9], [59, p40]. Martta Ropponen illustrates Öhrvall's Chemist Knot, thus proving she actually read the text [42, p72, fig.123].

Ropponen was a scout-leader, which in fact represents one of Hjalmar Öhrvall's intended target groups. We further know that she was in touch with Cyrus Lawrence Day and several other knotting enthusiasts, with whom she corresponded in Esperanto [15, p116]. She could have been in contact with Öhrvall too, but we have no evidence. Ropponen's work is not mentioned by other early native Finnish knot authors, such as Hannes Teppo (1944), whom admittedly is more Mariner related [54].

### Influence on Cyrus Day

Cyrus Lawrence Day (1900-1967) was a linguist, a professor of English literature, at Delaware University. Like Hjalmar Öhrvall he enjoyed sailing and, at the beginning of the 1930's, conceived the plan to write a Bowline article. Day proceeded prolifically and suddenly found he held sufficient material for a book, which he published in 1935 and titled *Sailor Knots* [14]. In 1947 he followed up this work by *The Art of Knotting and Splicing*, for which he obtained the US Naval Institute's assistance in publication [15]. His other major scholarly work is *Quipus and Witches' Knots* (1967) [18], which grew out of some earlier papers [16],[17]. The period spanning 1947 and 1967 saw various editions of *Knots and Splices*, a booklet which was intended for a less discerning knot tying audience.

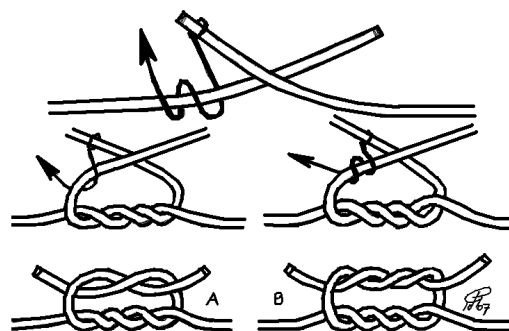
It is not clear how Cyrus Day came across the writings by Hjalmar Öhrvall. In any case they are listed among the references in *Sailor's Knots*. It thus took 15 years for Öhrvall to get recognition in Scandinavia and 20 years for his works to reach bibliographical listings of US knotbooks. As we shall show, Day may have heard about them from Ashley, but he may have equally well obtained the information from one of his knotty correspondents. For example Bostonian patent attorney L.G. Miller, who had undertaken a study to identify Oribasius' Knots too (after Öhrvall) [15, p.vi], [18, p106], [38]. That Hjalmar Öhrvall's work represented the largest published knot monograph up till then may have aided, but that is a long way from being a provable fact.

Hjalmar Öhrvall and Cyrus Day shared a lot of common ground in terms of knotting interest, e.g. Oribasius and magical knots. Both were academics, who extended their extra-curricular focus onto the field of knots. There are also differences. Öhrvall is more Darwinian in his approach and views knots as solutions to rope problems. Cyrus Day is more taken by the diversity of the standard solutions and did an excellent job of illustrating the most common elements in a photographic quality, which would have dazzled Hjalmar Öhrvall. Whereas Öhrvall published

his ideas in a rather condensed time-interval, stretching from 1908 to 1922, Cyrus Day had an almost equally long-lasting tranquil spell between 1935 and 1947, but published across 3 decades. Day was not the only one to suspend publishing activity for some time. As we shall see, Clifford Ashley did something similar. Presumably creating a *magnum opus* takes time. On the other hand, there is no compelling reason as to why knot authors should publish in a steady stream, but it is indicative of how people think about knots.

Miller, Day and Öhrvall had all tried their hand at deciphering Oribasius' knotting texts. Apparently their competition ran high. Camilla Day, the widow to Cyrus Day, wrote to tell me her late husband had translations of Öhrvall's second edition of *Om Knutar* [13]. This was corroborated independently by the librarian at Peabody Maritime Museum in Salem, Massachusetts, short time later. He informed me that about 250 items stemming from the Day Knotting Library had been integrated into their collection. Parts of this heritage are mentioned in the Peabody Manuscript List of their Phillips Library [41].

It is interesting to observe how Öhrvall affected Day after he got translations. To begin with he discovered Öhrvall's Constrictor Knot [15, p116], [18, p111]. A circumstantial example may be given with the **Surgeon's Knot** – also known as the Ligature Knot.



In 1866 Tom Bowling calls structure B the **Double Twist Knot**. It is not used as a bend, but as a tie [9, pl.1, fig.44]. Tucked away in his chapter 3, "Ties and Lashings", Joseph Tom Burgess follows suit. Albeit that he shows the Granny version [10, p62, fig.109]. Initially Hjalmar Öhrvall illustrated the version B. However, after 1909, he *textually* corrected his statement to surgeons using type A [57, p154]. In 1935 Cyrus Day still went by (Öhrvall's?) illustrations and shows Type B [14, p31]. After he obtained translations, presumably between 1935 and 1947, he started showing type A too. He did better and (1) found a much earlier reference in Diderot's Encyclopedia of 1778 and (2) mentions an unsupported forensic story of a Californian surgeon

who left a Ligature Knot tell-tale, which is claimed to have led to the culprit's arrest [15, p46].

Note that the Ligature Knot *name* was not really known in the Anglo-Saxon knotting literature, at any early date. Öhrvall did not introduce it, as he speaks of a *kirurgisk knut* (surgical knot) [56, p43]. In the second installment of "The Sailor and his Knots" Clifford Ashley launched a whole set of binding knots, which he collectively named "Ligature Knots". Among them he speaks of the Surgeon's Twist, leading to a Surgeon's Knot, the Type A structure above [2, pp114-116, figs.21-22]. Cyrus Day presented Type B as the "Surgeon's Knot" in 1935. Later Clifford Ashley compellingly argued that the Type A structure should be labeled *the* Ligature Knot [5, p221, #1209].

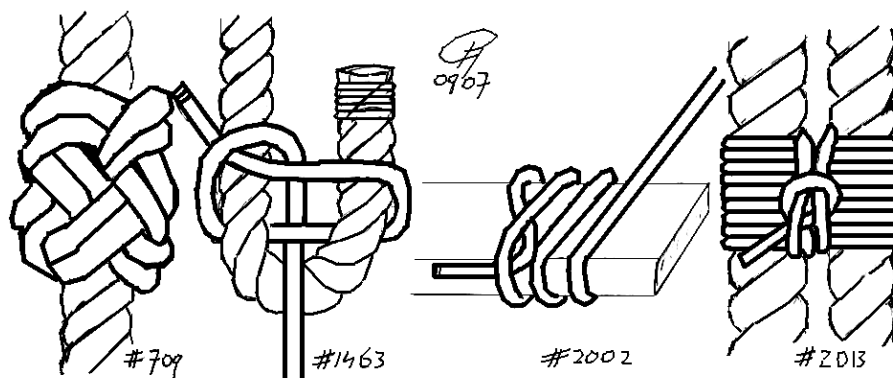
A curious fact is that our gentlemen knotters, Lawrence Miller inclusive, had studied Oribasius' ancient manuscript, yet none of them thought it strange that the Ligature Knot went unmentioned. Hjalmar Öhrvall casually expressed surprise that Ambrose Pare, whom around 1550 revolutionized surgery, did not discuss the Ligature Knot [60, p52]. In the 1918 Arthur Rogers Grant paper on surgical knots Type A is called the "True Surgeon's Knot" [22]. Peculiar is that Rosing and Robinson's investigations could not establish any superiority of the Ligature Knot over neither the Granny Knot nor the Reef Knot [44, p269]. Probably therein lies the reason that Ashley shovels surgeons into the Grand Users of Grannies Category [5, p220, #1206].

Overall Cyrus Day gave high appraisal of Hjalmar Öhrvall. He felt that the second edition of *Om Knutar* was "the best work on knots" and regrettably "out of print" [14, p154].

## Influence on Clifford Ashley

Clifford Warren Ashley (1881-1946) was a marine artist, whose life was permeated by the New Bedford (whaling) scene. In 1904 Harper's *Monthly Magazine* commissioned him to produce an article on whaling with narrative and pictures. He undertook one sperm whaling voyage to the Crozet Island Grounds, which are situated to the South East of Cape Town [4, p1]. In August 1904 Ashley embarked aboard the bark "Sunbeam" to observe whale-killing first hand. This experience sketched the backdrop for "The Blubber Hunters", which ran in two issues of Harper's in 1906. These articles became the first two chapters in his subsequent book, *The Yankee Whaler*. The voyage left an ever-lasting impression on young Clifford.

During his whaling stint to the Southern Ocean, Clifford Ashley was already sufficiently interested in knots to engage in daily conversations on the topic with Charles W. Smith, the "Sunbeam" mate [4, p9], [5, p6]. However, his knot publication debut had to wait till 1925. Aged 44, he published his first paper on knots. As we shall show, from his *Seastories* articles it can be inferred that Ashley had encountered Öhrvall's work on prior occasion. The question to pop is how Cyrus Day and Clifford Ashley learned about Hjalmar Öhrvall's endeavors? Ashley could not read Swedish and, prior to 1925, apparently did not have access to the Day translations, as they became available later. According to his bibliography, Ashley owned copies of Öhrvall's 1908, 1912 and 1916 monographs. So, the keen collector went to considerable extent to obtain copies.



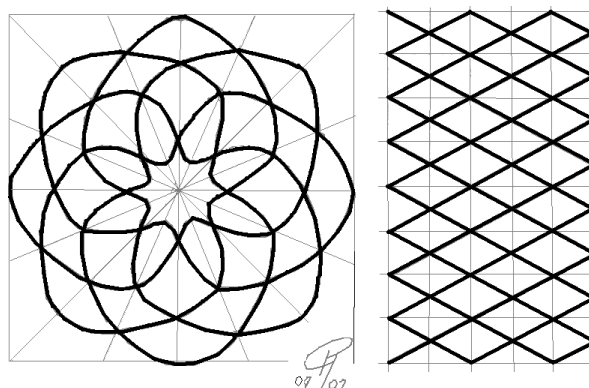
Miscellaneous knots from Öhrvall in ABOK

The Ashley Book of Knots harbors a few well-defined references to Öhrvall. **The Double Crown and Diamond** [5, p125, #709], which, according to Öhrvall, is known as the Rose Knot in Sweden (Rosenknop) [59, p159]. A **Heaving-Line Bend**, to which we shall return later in this article [5, p265 #1463]. Ashley shows a **hitch**, which is not to be found in Öhrvall's work as such and seems to be off here when stating: "Öhrvall shows a similar knot for the same purpose" [5, p326, #2002]. One may check the 1909 and 1912 works in vain. In 1916 Öhrvall illustrates a parcelling technique, which probably inspired Ashley [59, p189, fig.223]. ABOK discusses a **Flat Knot** [5, p327 #2013], which is rightfully acknowledged to Öhrvall [59, p186, figs.214-215].

In terms of placement along a time-line and depth of research, succeeding Hjalmar Öhrvall's writings on **Turk's Head Knots**, Clifford Ashley published the next comprehensive treatment of the subject. Ashley appears to have studied Öhrvall's Turk's Head Knots section diligently indeed. Although some points got lost in translation. The history of the Turk's Head Knot from Clifford Ashley's point of view differs from that of Hjalmar Öhrvall's. Ashley departs from the name given in Darcy Lever's 1808 first edition of his *Sheet Anchor* [5, p232, #1302]. The name for the knot must have been fleeting, as it skedaddled from the second edition a decade later [35]. However, Ashley immediately remarks that the structure itself is much older. Öhrvall reproduced one of Albrecht Dürer's knots (often credited to Leonardo da Vinci), had personally researched Turk's Head Knotted artifacts from Viking archaeological digs and drops references to even earlier Byzanthian structures from the 9<sup>th</sup> century [59, p133].

Despite some referential glitches Ashley genuinely tried to understand Öhrvall's text. For example he mentions Öhrvall identifying three out of four expansion methods for Square Turk's Head Knots [5, p235, #1321]. Square Turk's Heads are Casa-coded Regular Grids for which the number of parts ( $p$ ) and the number of bights ( $b$ ) relate as  $p = b \pm 1$ . As Ashley stated, without proof, expansions of Square Casa-coded Regular Grids fall into exactly one out of 4 types [5, pp235-236, #1321]. This is not entirely evident from Hjalmar Öhrvall's work. Öhrvall discerns the "Valknut" (disc-represented structure) and the "Partkuntor" (grid-represented structure). He studied most of his Turk's Head Knots as "valknutar", i.e. by means of disc representations. In that context he discussed the expansions of  $3/4 \rightarrow 5/6 \rightarrow 7/8 \dots$  etc and  $4/5 \rightarrow 6/7 \rightarrow 8/9 \rightarrow \dots$  etc. In other words, Hjalmar Öhrvall showed the  $p = b + 1$  cases, but not

the  $p = b - 1$  cases. In any case it takes close study to spot such details.



$p/b = 5/8$  Disc- and Grid-representation

There are many questions seeking an answer in this corner of the decorative knotting field. What is so powerfully attractive about Turk's Head Knots? Why are knotters driven to promote them to the degree they do? Peculiar is how knotters seldom leave the Casa-coded Regular Grids arena. Here Ashley with Graumont and Hensel were among the first in a Mariner context to explore this terra incognita.

### Scattered references

Reading Hjalmar Öhrvall works it is not hard to be impressed. He was a bright thinker and had the gift of exceptionally clear formulation. We have seen how three respected knot-authors acknowledged influence by Öhrvall. Over the past century a variety of authors cited Hjalmar Öhrvall's works. Here is an anthology, representing a scrape across some 30 sources, to asses influence and impact.

The initial welcome of Hjalmar Öhrvall's works in homeland Sweden was hopeful. As early as 1913 his friend Dr. Ivar Arwidsson refers to Öhrvall's excellent 1908 book [1, p9]. He merely uses it to identify the knots he stages throughout his book on fishing-related ethnographical facets from Gavleborg county. A 1917 *Fataburen* article, which reviews the second edition of *Om Knutar*, is very positive about Hjalmar Öhrvall's work in the magical knot area [34]. With patriotic flair the reviewer, ms. Langenfelt, stressed the importance of Öhrvall's work and noted the lacking equivalent in any other language.

Excluding Finland, Öhrvall's impact on the **scouting movement** in Scandinavia is surprising. For example in 1983 the Svenska Scoutrorelsen's *Scoutuppslag boken* is silent on Öhrvall, although he reached out for them already in 1908 [50, pp132-134]. In Denmark Hjalmar Öhrvall's words were not heard. Axel

Saugman, a well-respected Danish scouting knot-source for over 40 years, has a bibliography without Öhrvall [47, p87]. Kurt Jensen, who took over Saugman's knotmaster role later in the 20<sup>th</sup> century, avoided Öhrvall. Kurt Jensen's 1960 bibliography still promotes Nordic sources, e.g. Jens Kusk Jensen's seamanship book as a work "making our nation proud" [27, pp105]. However in later editions he became increasingly Anglo-Saxon oriented [27, pp96]. Norwegian scout-manuals do not mention Öhrvall. We must conclude that one of Hjalmar Öhrvall's targeted groups, the scout movement, failed to appreciate his efforts to reach them. At least in Scandinavia.

Remarkable is that yachtsmen Öhrvall and Day, completely lacking professional sea experience, and artist Clifford Ashley, having limited sea experience, all promote Mariner approaches to knotting. In **Mariners circles**, however, Hjalmar Öhrvall's work did not appear to fare well either. In his 1923 little sailor's knotting booklet the Swedish sea captain Comét did not waste a word on Öhrvall [11]. Among the Danish merchant naval heavy-weight knotters, neither Kaj Lund nor Tom Jørgensen seemed to have been aware of Öhrvall's work, as their bibliographies do not mention it [33], [37]. Neither did the later editions of Jens Kusk Jensen's "seaman's bible", nor the influential works on seamanship by Knud Hansen or F.W.J. Paulsen reference Öhrvall's work [24], [26], [39]. The Swedish decorative marlinspike boaty boys of the second half of the 20<sup>th</sup> century neglect Hjalmar Öhrvall. Sune Berkeman, who has some remarks on knot-history and such, is almost silent on Öhrvall [6, p16-20, p112], [7], [8]. That the decorative traditionalist knotting clansmen punished Hjalmar Öhrvall by ignoring his work seems to go without saying. In fact, in their preface, Nils Ström and Anders Eneström pride themselves on keeping a craft alive and rather praise Clifford Ashley as their source of inspiration than mention fellow countryman Öhrvall [53].

In the **General Knotters Category** Yngve Johansson does not mention Öhrvall [28]. However, it is interesting to note that Albert Bonniers is the publisher once again of this knot work. In Sweden Bonniers dominates the knot-book market. Much like Glasgow-based publisher Brown, Son and Ferguson controlled the UK knot-book market at the turn of 19<sup>th</sup> century and well into the 1900's. The Bonniers-based opposition a decade later by Ynge Rydholm acknowledges Hjalmar Öhrvall, but holds *The Ashley Book of Knots* and *The Art of Knotting and Splicing* to be the best available knotbooks [45], [46, p37]. In his impressive 1991 account of Sweden's cordage-

industry, Olle Wahlbeck has mere fleeting mention of the 1908 *Om Knutar* in his bibliography [55, p210]. How come Öhrvall was so unknown on his home-turf? Indifference or ignorance? Overall it is a sad picture how little Öhrvall's influence spread across his Scandic hitherland. It appears like the Scouting and Mariner knotworld exhibited endemic behavior, or perhaps were genuinely unaware of his work or simply chose to ignore it. However, many knotting enthusiasts, of varying degree of anonymity, were sympathetic towards Öhrvall's work [29], [30], [31], [40], [43]. The staunchest attacks arrived from his own back yard.

### Sam Svensson's Critique

No doubt Hjalmar Öhrvall liked being a provocative thinker and anticipated attacks from many directions. Therefore he cloaked his reasons for writing and researching in an apologetic invitation [56, p3]. Apart from the academic disagreement with Lawrence Miller [38], Cyrus Day and J.Joris hage [31] on their Oribasius knot-identifications, a critical downpour came from a quite unexpected direction.

Sam Svensson (1896-1966) was a sea captain, who turned curator of Sweden's Maritime Museum in 1935. He was involved in the preservation of the *Vasa* in Stockholm, among other things, and produced several books on maritime history and seamanship. In the preface of his *Handbok i sjömansarbete* Svensson, on two occasions, discusses Öhrvall's and Comét's influence on and contributions to knotting [51]. These thoughts have not managed to make their way into the English translation [52]. Granada, the UK publisher for Svensson, decided to leave out the Öhrvall and Comét references. They probably assumed the paragraphs were intended for a local Nordic market and sadly missed an opportunity for Hjalmar Öhrvall-promotion by not translating them. Let us take a closer look at these omissions.

### First Omission

Sam Svensson complains how the seamanship literature holds a long tradition of poorly representing ropeworking techniques. In general marine experts have the tendency of introducing errors which are propagated. To that extent read Clifford Ashley's supportive account of whaling experts and their beliefs [4, p.xiv]. Actually Svensson moans mostly about the terrible state of books with errors. He finds that Hjalmar Öhrvall contributes to the confusion and writes:

*Hjalmar Öhrvalls bok Om knutar, Stockholm 1916, som är det största arbetet på svenska språket i detta ämne, bör nämnas i detta sammanhang. Öhrvall hade genom intresserad forskning skaffat sig stora teoretiska kunskaper om knopar och stek.*



Hans praktiska insikter voro emellertid ej helt av samma höga standard, och arbetet är behäftat med flera fel i framställningen. Som exempel kan nämnas långsplitsen på tågvirke, felaktig i både text och bild, och fiskarsteket, som är fellecknat. Många påståenden och antaganden blotta dessutom en obekantskap med knoparnas namn, ändamål och väsen som förvånar. Sålunda sägs, att drejrepsteket slås på en drejare, när en sjöman skall sitta på den uppe i masten, och att det måste bero på gammal slentrian, att aviga halvslag ej använda mere än de göra, för att nämna blott två exempel. Drejrep har tyvärr intet med drejare att göra, och denna användas aldrig att sitta på. Ej heller har knoparnas användning bestämts slentrianmässigt utan empiriskt med rön ända från vikingatid. Långsplitsen på wire är omöjlig att utföra efter den givna beskrivningen, och det är säkert, att varken professor Öhrvall eller den författare, han ordagrant översatt, någonsin själva gjort det. Allt detta gör, att boken ej har så mycket att ge sjömannen. Den har emellertid andra värden, och den, som önskar en utredning om knoparna i deras historiska, geografiska och etnografiska sammamhang, kan troligen ej finna ett fullständigare arbete på svenska språket [51].

Hjalmar Öhrvall's book, *About Knots*, Stockholm 1916, which is the largest work in the Swedish language on this subject, should be mentioned in this context. Öhrvall had acquired, by inquisitive research, a large theoretical knowledge about knots. His practical insights were not of the same high standard, and his work is plagued with many mistakes in its presentation. For example one can mention the **Long Splice** in rope, mistaking in both text and graphics, and the **Anchor Bend**, which is wrongly illustrated. Many assertions and assumptions witness of an unfamiliarity with knotnames and purposes in general. It is stated, that the **Rolling Hitch** is made onto a heaver, when a sailor wants a seat up in the mast, and that it must be based on routine that the **Buntline Hitch** is used less than it actually is, for to mention but two examples. The "drejrep" has nothing to do with a heaver and it is never used to sit on. Neither has knotting's application become determined in any routine manner but in an empiric way with pure spirit from the Viking days. The Long Splice in wire is impossible to conduct by means of the given instructions and it is certain that neither professor Öhrvall nor the author he copied literally has made one either. All of this results in the book not having much to offer the seaman. It does have other virtues. For those who wish to have an exposition on the history of knots, their geographic and ethnographic relationships, it will hardly be possible to find a more complete work in the Swedish language.

Sam Svensson raises 4 points on the Long Splice, Anchor Bend, Rolling Hitch and the empiricity of knotting experience. Let us take them in slow-mow.

Hjalmar Öhrvall has a somewhat peculiar way to make the **Long Splice**. The odds are that his instructions will fail in most interpretations [59, pp167-168, fig.199]. The image below stems from Öhrvall's 1908 book. Count the strands between splicing sites. They must be a multiple of three, unless some obscure rope-working technique is intended.

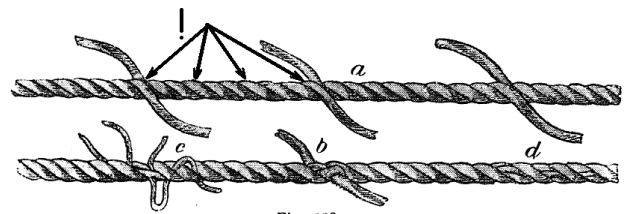
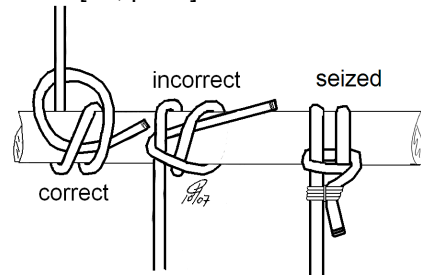


Fig. 122.

Trying to trace the origin of Öhrvall's probable source for this splice, I found that Vilhelm Linder illustrates a faulty 3-strand Long Splice [36, p437, fig.293]. Also Denmark's Royal Shipbuilder, Diderich Funch, has a Long Splice in 4-strands, which appears incorrect [21, p5, pl.3]. The Long Splice by Jens Kusk Jensen is allright [26, p36, figs.162-163]. Of course Sam Svensson's Long Splice is correct [51, p84, fig.190], [52, p130, fig.190]. Surprising, however, is Svensson's illustration for the Short Splice in 2(?)-stranded rope [51, p84, fig.189], [52, p129, fig.189].

According to Svensson there is a correct and an incorrect way to make an **Anchor Bend** [51, p45, fig.67], [52, p64, fig.67]. This wisdom is parroted by Olle Wahlbeck [55, p207].



In 1908 Hjalmar Öhrvall shows a picture of "Svensson's correct" version [59, p77, fig.75], but in 1916 an inkdrawing of the "incorrect" version emerges [56, p55, fig.58]. Hjalmar Öhrvall appears to have gone wrong when deforming the Anchor Bend, as we seen in Part I, to improve its grip (as a Strangle Knot). Sam Svensson, however, alters the load direction of this hitch – to prove his point. It is well-known that, for that reason, the wend should be seized to the stend. Age-old knowledge which is recorded in most of the ancient seamanship manuals.

The Drejebstek is known as the **Rolling Hitch** [5, p298, #1734]. Hjalmar Öhrvall had the following discussion:

*En eller flere sådana extra rundtörnar tjäna äfven till at hindra halvslagen att slira af en dräjare (kort käpp, som begagnas dels som häfstång, dels at sitta på, när en skal hissas upp på masten): s.k. dräjrepstek (fig.47) [56, p35].*

One or more of such additional roundturns also serve to prevent the half hitch to slide off a heaver (short stick, which is used partially as a heaver, partially for a man to sit on when hoisted up the mast) a so-called *dräjrepstek* (fig.47).

Textually Öhrvall seems to have missed out something here. His figure in 1908 refers to the Double Bastard Weaver Knot [5, p79, #491]. By 1916 Öhrvall got this fixed and the text refers to the image of the Rolling Hitch [59, p48, fig.36]. However, what these enigmatic words mean is a puzzle. Carl Smith's work from 1889 and 1899 seems to have been Öhrvall's primary source here. In 1889 Carl Smith had a discussion, which started from the Bowline when used to hoist a man up the mast. Smith added:

*Til sistnämnda ändamål kan man äfven begagna det på figur 55 afbildade sättet att fästa en stark käp <drejare>: kallad, på hvilken karlen sätter sig med benen på ömse sidor om trossen [48, p68].*

For the last mentioned purpose one can also use the structure shown in fig.55 for attaching a strong short stick, called a <heaver>, on which a guy sits with a leg on either side of the rope.

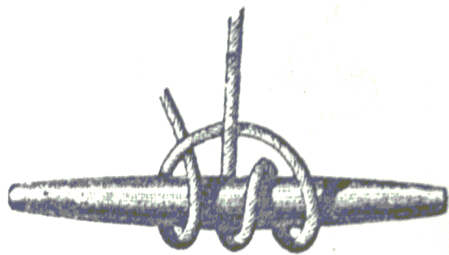


Fig. 55.

In 1899 Carl Smith had the following

*Drejare, en kort stark käpp, som begagnas dels såsom häfstång, vid åtskilliga sjömansarbeten dels för att sitta på, när en karl skall hissas upp på masten, i hvilket sistnämnda fall den påstickes så som figuren visar [49, p31].*

Heaver, a short stick, which can be used as a lever during various seamanship activities, partially to sit on when a hand must be raised up the mast, in which case [the heaver] is used as shown in the figure.

So, Hjalmar Öhrvall bluntly copied Carl Smith. The question is wherefrom Smith got this information? A "drejer" also seems to be a spar. Moreover, there is a Drejrepstik in other Nordic languages. For example Harboe in 1839 and Funch in 1846 call a seized Lark's Head "Dreiereebstik" [25, p392], [21, p25, pl.11]. Mention of the "Drejrepstek" by naval authority Vilhelm Linder was not found [36, p144], but his book on seamanship does make mention of the heaver seat:

Fig.312 a visar påslagning af drejare med två halfslag och rundtörn sam b med halfslag om egen part, för att ej halfslagen skola slira af drejaren, da en man sidder derå. [36, p449, fig.312]

Figure 312 a shows the belaying of a heaver with a Clove Hitch with roundturn. Illustration b shows a Clove Hitch with a Half Hitch, to ensure that the turn will not slide of the "drejare", when a man is sitting on it.

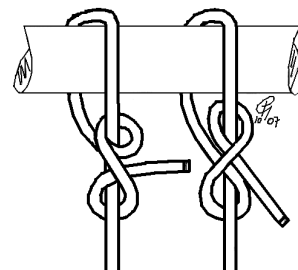
It is unclear why Carl Smith thought one should sit on a heaver. Unless he witnessed some dare-devil, recorded that experience for posterity and had Vilhelm Linder and Hjalmar Öhrvall propagate it.

Interestingly Svensson does not have the *dräjpstek*, but mentions and illustrates "drejare" a so-called heaver [51, p33, fig.21], [52, p45, fig.21b]. In the realms of a ship only having seven ropes, Olle Wahlbeck mentions the "drejrep: Tåg, vari märsrå, stundom bramrå hänger. (se rep)." [55, p118]. One of these famous ropes in which a certain kind of spar was hung.

**On knot repertoires becoming ground in by means of routine.** Let us see how Hjalmar Öhrvall incited our curator. Svensson seems to be referring to Öhrvall's 1908 edition where a discussion on Two Half Hitches and the Buntline Hitch is taking place [56, p37]. The Swedish name "Två Aviga Halfslag (om egen part)", literally translates into Two Wrong Half Hitches but is named Buntline Hitch in English [5, p14, #55]. Öhrvall had excavated a link between the Buntline Hitch and the Two Half Hitches from Carl Smith's *Båtsegling 1899* [49, p68]. Smith was quite positive about this hitch and contaminated Öhrvall, who jokingly links it all to superstition:

*Om således de aviga halfslagen hålla bättre, äro lika lätt att göra, och nättare än de vanliga, borde de nästan alltid vara att föredraga. Att de ej begagnas mera, torde nog dels bero på gammal slentrian, dels måhända därpå, att de fått namnet "aviga": man gör ej något avigt af samma skäl som man ej gärna afseglar på en fredag eller tar een spinnrock ombord! [56, p37]*

As the Buntline Hitch (Two Wrong Half Hitches) holds better, is equally easy to tie and neater than Two Half Hitches, it should make it the most preferred hitch. That it is not used more, will partially be due to routine, in part also that the name "Wrong" makes that one will not want to resort to the wrong thing, for the same reasons that one shall not set sail on a Friday, or carry a spinningwheel onboard!



Hjalmar Öhrvall's discussion on how users grind knot tying methods into their fingers in a subconscious manner clearly had nothing to do with Vikings. Why Svensson thought knowledge should be collected in an "empiric way with pure spirit from the Viking Days" is a good question. Knots were in use long before

then. Moreover, why choose a millennium as calibration interval?

## Second omission

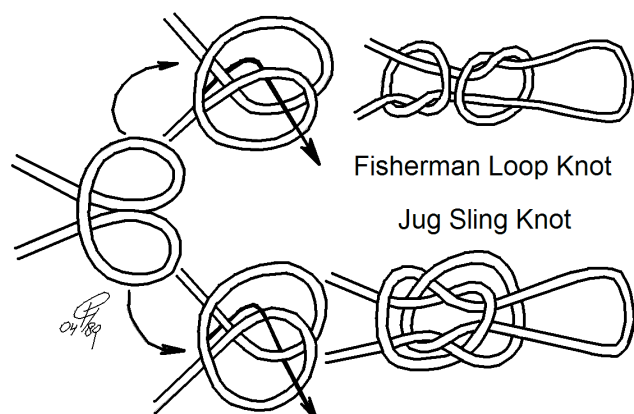
The second part, which dropped from the English translation of Svensson's Swedish handbook on seamanship, concerns the application of knots by the ancient Greeks.

*Öhrvall går här längre än andra författare. Han inte endast beskriver de gamla vanliga, han ger även sjömannen kärleksknopen och säckknopen at använda som toppstek. Han anser nämligen, att de gamla grekerna slog en säckknop i sina vant och trädde över masttoppen. I verkligheten torde de ha smugit varje vant med en rännsnara runt toppen, vilken riggningsmetod med eller utan bändslar runt mast och vant strax nedanför godset, har urgamla anor i Medelhavet och Främre Orienten [51].*

Öhrvall ventures further than other writers in this field. He not only describes the ancients badly, he also gets the **Sailor's (?) True Love Knot** and **Jugsling Knot** to be used as a **Jury Masthead Knot**. He believes the ancient Greeks put a Jugsling Knot in their rigging and led it over the top of the mast. In reality they will have put a Running Loop Knot in each upper around the masthead, which riggingmethod, with or without bindings (as will be demonstrated below) has age-old origins in the Mediterranean and the Middle East.

Svensson's issues here concern the Sailor's True Love Knot, the Jug Sling Knot and the Jury Masthead Knot. Let us take all points in slow-mow.

In his Oribasius knot-discussion Hjalmar Öhrvall discusses the Fisherman's Loop Knot in the context of Sailor's True Love Knot and shows it to be algorithmically proximate to the Jug Sling Knot [59, p96-97], c.f. image below.



Indeed Hjalmar Öhrvall has an opinion on how the ancient Greeks may (have) use(d) the **Jug Sling Knot** in their rigging [59, p103]. To substantiate his statement Öhrvall offers a 1914 reference. This is an article by a certain A.M. Alexanderson titled "*Den grekiska trieren*" in which aspects of Greek smalboat rigging are discussed. No doubt there will be various

ways to erect primitive rigging. The question is who may claim sufficient authority to dictate which structure is superior in this environ?

Sam Svensson has an interesting statement (in both the Swedish and the English version of his book):

*The unusual, complicated hitches have never had a place at sea, but like the incorrectly drawn items in the books they have long been associated with the seaman and he will never be able to escape them [51], [52, p8].*

Although certain knots may be complex and unwieldy appearing solutions to any rope problem, that does not render them rejectable offhand. After all, which factors determine the criteria for rejection? Uncommon usage by a user-community is surely no criterion as there exist arguments and cases which prove the opposite [23].

Svensson discarded Hjalmar Öhrvall's work as useless for the sailor. We have just discussed Svensson's evidence and note he does not offer any foundation as to why his work was tailored to sailor needs. Apparently professor Öhrvall's meddling in knots displeased curator Svenson. Nothing prevented the latter from deriving inspiration from parts of Öhrvall's work. Knots and rope-working techniques turn touchy subjects when it comes to critical investigation.

Svensson's foremost message seems to be that authors copied each other indiscriminately. As a result the sailor never knew what to believe and came to regard the sources with a healthy amount of contempt [52, p7]. The validity of such statements deserves doubt for at least two reasons. Firstly sailors could not read, unless we de-victimize their selling-point of *illiterate* sailors who were driven to knotting. Secondly the people who wrote books, got this information from the sailors to begin with. Obviously Sam Svensson was not overly positive about either Hjalmar Öhrvall's or N.R. Comét's attempts at recording marlinspike seamanship and realised that a window for self-promotion was available. However, much of his comments were already defused by the disclaimer Hjalmar Öhrvall posted in 1908, noting the pathetic state of affairs with respect to knots in Swedish and gratefully accepting any help [56, p3].

Much of this sort of folly boils down to the boaty boys enjoying being worshipped as the traditionalist professionals with a massive, yet unsubstantiated, claim to knots. If Svensson really sought fault in Hjalmar Öhrvall's writings, then the latter's Running Bowline is indeed erroneous [59, p66, fig.57]. On the other hand there is the surprising fact in the Granada

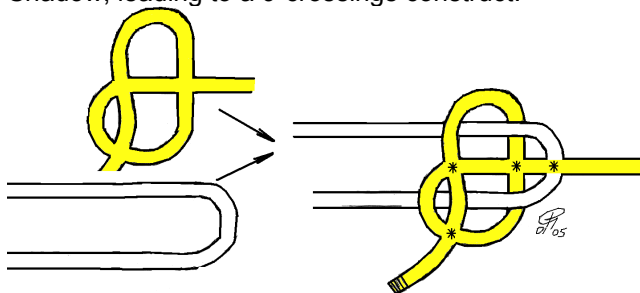


version of Svensson's book where we find "the Matthew Walker Knot, described in an English book, *The Seaman's Dictionary*, as early as 1644." [52, p79]. The original Swedish version does not contain this statement [51, p54]. Now who to hold accountable for the propagation of nonsense? It is well-known that practice and theory are prone to violent clashes. They bash and bite each other. Moreover, knots are to be a difficult subject to write about and especially to get things right. So, before someone finds the faults I overlooked in my writings, let it be known that additions and corrections are accepted with gratefulness ☺.

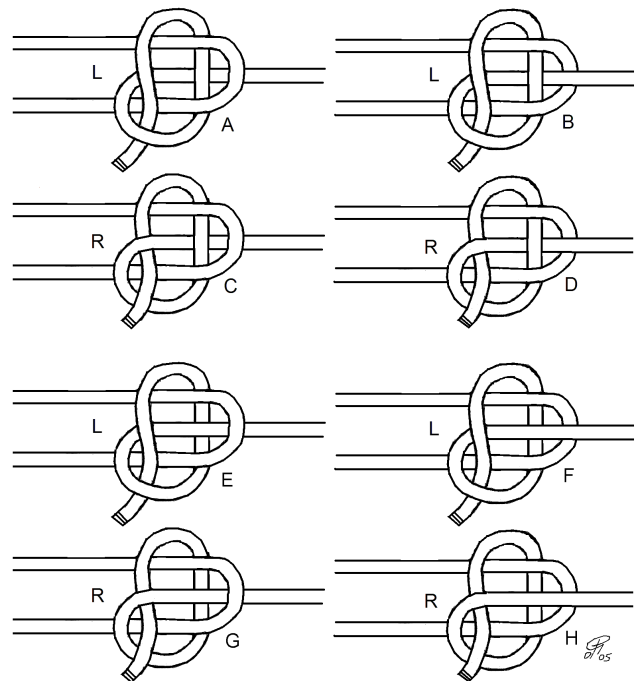
### Samisen stuff

During his fieldwork Hjalmar Öhrvall discovered a knot on an Oriental musical instrument in the Gothenburg Museum [56, p102], [59, p189]. This guitar-like instrument was a three-stringed plucked lute known as *shamisen* in the Tokyo area and as *samisen* in the Kansai district around Kyoto.

There are a number of bends, which have become related to the Samisen. In the following we shall speak of the Samisen Structure, which results from the superposition of a Hook- and Overhand Knot Shadow, leading to a 9-crossings construct.



For our purposes this structure has 5 crossings of fixed parity. Hence there will be 4 variable crossings, which are marked with an asterisk. This leads to 16 structurally proximate bends, of which half are mirror images. The structures, which come forth, are illustrated above. We shall identify the 8 relevant types of Samisen Structures by the letters A, B, C, D, E, F, G and H. Types B and D may result in some kind of stable bend. A and C are treacherous. E is the Binder's Turn. F and H are rubbish and G is a Sheet Bend. Half of these structures cannot be used with customary bend load-configurations. Actually Type A requires pulling both looplet's legs in order to survive. Which ones managed to sneak their way into the knotting literature?



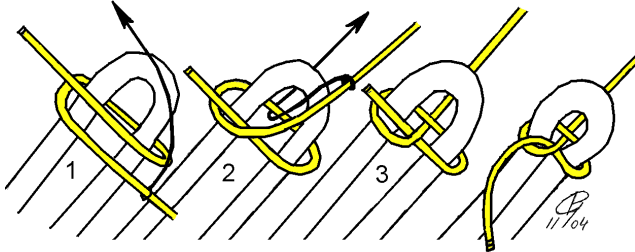
Samisen Structural Proximities  
(up to mirror images)

Let us first see what Öhrvall writes and then proceed to investigate what Japanese knotting sources can tell us about this knot. Next we try to unravel the trail of confusion which followed in the wake of this controversy. Insignificant textual differences between both of Öhrvall's editions exist, but in 1908 he wrote the following:

*Vid instrumentets undre del sitter ett antal öglor, en för varje sträng. Man gör med strängen en rundtörn om de två parterna i öglan, och låter den sedan, när den kommer midt för mellanrummet mellan öglans båda parter, korsa sig själf, och gå mellan dessa ut på andra sidan, tvärs under egen part, därpå upp genom öglan och så vidare uppåt instrumentet till skrufven i dess hals. Strängen sitter således icke fast i själfva öglan, som den icke ens berör, då den är spänd, utan frestar lika på båda dess ursprungsparter och det tvärgående lila stycket af strängen bildar en kant, som strängen gå öfver och som bestämmer dess längd. Man kan lätt öfvertyga sig om, att denna enkla beläggning håller förträffligt [56, p102], [59, p189].*

At the instruments lower part there are a number of eyes, one for each string. With the string (1) make a roundturn around the two parts of the eye, such that it comes back between its own part and the eye and let it go, when it returns to the middle of the space between the eye's both parts, (2) crosses itself and (3) go between them out towards the other side, therewith going up through the eye and further up into the instrument to the screw in its "neck". The string is thus not fastened to the eye, which it does not even touch when it is tensioned. The crossing little piece of the string forms a side, which the string crosses and determines its length. It is easy to convince oneself that this simple belay holds remarkably well.

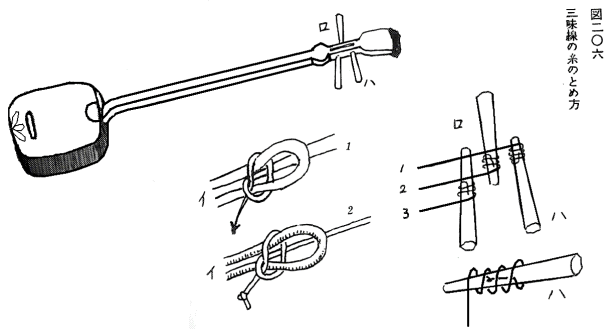
Hjalmar Öhrvall described a stend-tying method whose steps are attempted illustrated stepwise below. It results in a Type C Samisen Structure, but may equally well lead to a Type A Samisen Structure. The step-numbers in the illustration correspond to the bold numbers in parenthesis in Öhrvall's text's translation.



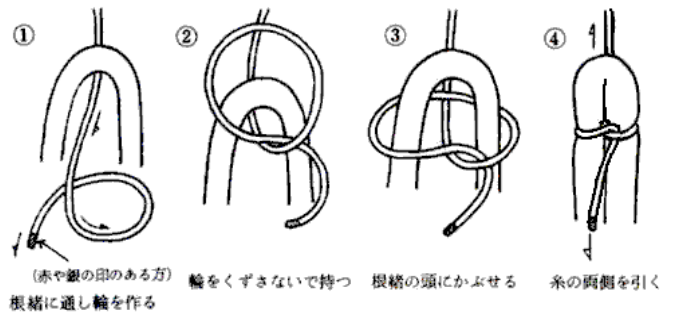
However, was that what Hjalmar Öhrvall intended? In 1908 the photography is so bad that nothing can be gleaned from it. In 1916 there is an unambiguous inked line-drawing representing a Type B Samisen Structure.

So Hjalmar Öhrvall *describes* the Type A or C Samisen Structure (up to mirror image), but *illustrates* the Type B Samisen Structure in 1916. It is interesting to track this structure through the knotting literature. Let us first go get some Japanese sources.

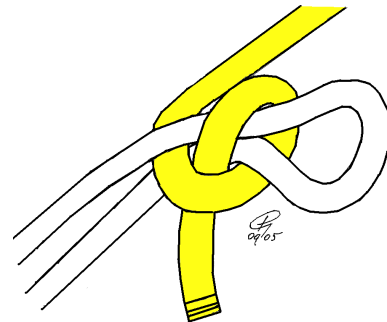
Kakuichi Fujiwara shows the structure below [20, p82]. Noteworthy is that he shows a wend-tying method for Type A Samisen Structure.



A different tying method was shown on the internet years ago by Nugata [61]. This website seems to have moved, and the samisen information removed, but the illustration below shows this tying method, which results in a Type A Samisen Structure.



Testing the Type A Samisen Structure's security, it is soon found that unilaterally loading either of the looplet's legs, will cause the structure to disintegrate within nanoseconds. It becomes more stable when loaded on *both* of the looplet's legs, but all in all it remains a balancing act. Peculiar is how the Japanese Samisen causes a loose looplet to protrude. This shows up in neither Hjalmar Öhrvall's 1908 nor his 1916 version. Actually he shows a loop, which is too long to remain stable when loaded.



The first post-Öhrvall source in the Western knotting literature to mention this kind of bend appears to have been Clifford Ashley's third installment of his 1925 *Sea Stories* article [3, p154, fig #86]. He shows a Type B Samisen Structure as a Heaving-line Bend: "Large to Small – heavingline bend". There are no references in this famous series of articles, but it is safe to assume that Ashley had encountered Hjalmar Öhrvall's 1916 work prior to his knotting publication debut. If that is not the case, the alternative is to assume that the Type B Samisen Structure was a somewhat well-established heaving-line bend. However, the literature does not support that contention. Fun part is that in 1944 Ashley claims he got it from Öhrvall after all [5, p265, #1463].

In 1940 Sam Svensson has a Type B Samisen Structure and later Yngve Johansson followed suit [28, p62], [51, p51, fig.98], [52, p74, fig.98]. Johansson gives no references to Öhrvall, but to Ashley instead. Maria Constantino, at least in the Dutch version of *The Knot Handbook*, shows a Type B Samisen Structure and calls it "Treklijnknoop". Obviously the author fell victim to a bad translation, as that is a name which makes little sense. In the

Dutch knotting literature there is a knotname called “*Werplijnsteek*” for which there is credible historical backing. The word “*treklijn*” does not exist in the Dutch language and certainly not in any Dutch maritime context [12, p190]. Moreover, Constantino erroneously credits Hjalmar Öhrvall *Viktigsta Knutarna* 1912 as a source which does not discuss this knot [31].

Remarkable how everybody, excepting the Oriental sources, has a Type B Samisen Structure in the L-version. This may be pure coincidence, of course, but that strikes me as an untenable statement.

## Epilogue

Knots merely played a sideline in Hjalmar Öhrvall's life, yet they must have absorbed him. Imagine what disaster would have paralyzed Sweden's research into physiology had he spent more time on knots.

In our trilogy we saw Hjalmar Öhrvall offer a promontory with a view onto the Ocean of Knots. This knotting icon offers a mine, brimming with rich veins full of gems, for any knot-researcher who is willing to learn some Swedish. The question to ask here is whether Hjalmar Öhrvall fell victim to the power of prose, to his beloved Swedish language? To me the answer appears merely partially affirmative. Additionally his scope extends beyond most knotters' interest. Unfortunately his efforts did not instigate the knotworld at large, despite sympathetic advertisement by Clifford Ashley and Cyrus Day. There is still much to be researched in Hjalmar Öhrvall's works. I hope this article has whetted somebody else's appetite to do so.

## Acknowledgements

I extend my thanks to Tove Kjellander, librarian at the Royal Library in Stockholm, Charles Warner (Australia) and Dan Lehman (USA) for their help and discussions during the preparation of this paper.

## References

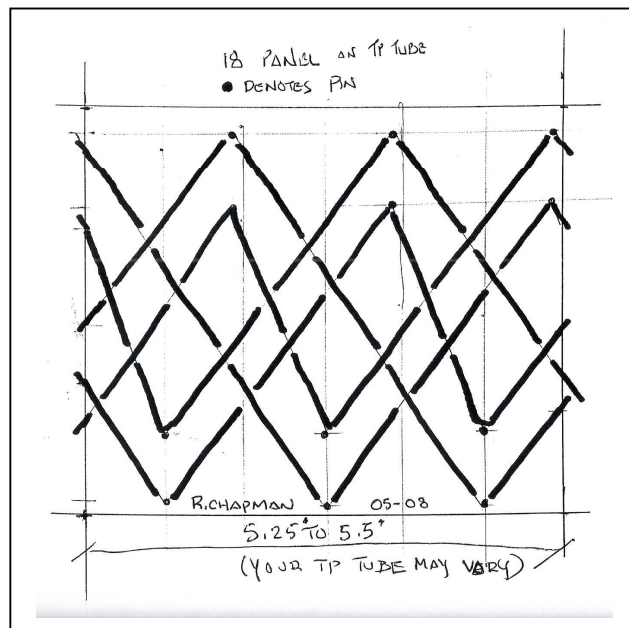
1. I. **Arwidsson**, *Strömmingsfiske- en undersökning över i Gävleborgs län använda metoder, redskab och benämningar*, Uppsala, 1913.
2. C.W. **Ashley**, “The Sailor and his Knots”, second installment in *Sea Stories*, Vol.10, nr.6, pp114-126, August 1925.
3. C.W. **Ashley**, “The Sailor and his Knots”, third installment in *Sea Stories*, Vol.11, nr.1, pp151-159, September 1925.
4. C.W. **Ashley**, *The Yankee Whaler*, originally 1926. Dover Publication, Mineola, isbn 0-486-26854-3, 1991.
5. C.W. **Ashley**, *The Ashley Book of Knots*, Doubleday & Doran, New York, 1944.
6. S. **Berkeman**, *Knopar och sjomansarbeten*, Forlags AB Vastra Sverige, Göteborg, 1969.
7. S. **Berkeman**, “Nagra blad ur knoparnas historia”, *Unda Maris* 1969-1970, pp109-114, Göteborg, 1971.
8. S. **Berkeman**, “Till karingknopens psykologi”, *Longitude* 5, pp38-39, Stockholm, 1970.
9. T. **Bowling**, *The Book of Knots*, Hardwicke, London 1866.
10. J.T. **Burgess**, *Knots, Ties and Splices*, Routledge, London 1884.
11. N.R. **Comét**, *Fullständig framställning av sjömansknopen. Alla knopar, splissar och andra sjomansarbeten som forekomma ombord å ett segelfartyg*. C.E. Fritzes Bokförlags Aktiebolag, Stockholm, 1923. Reprinted 1929.
12. M. **Constantino**, *Het Knopen Handboek*, Atrium-Icob, Alphen aan de Rijn, isbn 90-6113953-8, undated. Originally *The Knot Handbook*, Sterling, isbn 1402748043, 2007.
13. C. **Day**, C.L. Day widow in correspondence with author 1986.
14. C.L. **Day**, *Sailors Knots*, Dodd, Mead & Co, 1935. Sidgwick & Jackson Ltd, London 1936. Reprinted 1937.
15. C.L. **Day**, *The Art of Knotting and Splicing*, Naval Academy 1955.
16. C.L. **Day**, “Knots and Knot Lore – A Study in Primitive Beliefs and Superstitions”, *Western Folklore*, Vol.9,pp229-256, july 1950.
17. C.L. **Day**, “Knots and Knot Lore – Quipus and other Mnemonic Knots”, *Western Folklore*, pp8-26, 1957.
18. C.L. **Day**, *Quipus and Witches' Knots*, University of Kansas Press, Lawrence, Incc 67-18736, 1967.
19. **Fennica**, search engine of the national bibliography of Finland, <https://fennica.linneanet.fi>.
20. K. **Fujiwara**, *Musubikata Techno*, lccn78-804553, Tokyo, 1975.
21. D.H. **Funch**, *Dansk Marine-ordbog*, originally 1846. Høst & Søns Forlag, isbn 87-14-27668-2, Copenhagen 1979.
22. A. Rogers **Grant**, “The tying of a surgical knot”, *Gynecology and Obstetrics*, 1918.
23. C. **Hamel**, “Nœud de Capelage. Jury Rig Mast Knot – ornament or utilitarian?”, *Knot News*, nr.59, pp1-6, issn 1554-1843, 2007.
24. K. **Hansen**, *Lærebog i praktisk sømandskab*, Copenhagen Second edition 1948.
25. C.L.L. **Harboe**, *Dansk Marine-ordbog*, originally 1839. Høst & Søns Forlag, isbn 87-14-27966-5, Copenhagen, 1979.
26. J. Kusk **Jensen**, *Haandbog i Praktisk Sømandsskab*, originally 1901. Fascimile reprint by Høst & Søns Forlag, isbn 87-14-28284-4, Copenhagen, 1982.
27. K. **Jensen**, *Tovværksarbejder*, originally 1960. Spejderforlaget, Copenhagen, isbn 87-7041-018-6, 4th printing 1982.
28. Y. **Johansson**, *Knopar – knopslagning, tågvirke, arbeten med tågvirke*, Sesam Böckerna, 2nd revised edition, Albert Bonniers, Stockholm, 1964.
29. S.G.M. **Johansson**, “Letters”, *Knotting Matters*, issn 0959-2881, no.3, pp13-14, 1983.
30. S.G.M. **Johansson**, “Letters”, *Knotting Matters*, issn 0959-2881, no.39, p6, 1992.
31. S.G.M. **Johansson**, “How a guitarstring became a heaving-line bend”, *Knotting Matters*, issn 0959-2881, no.81, pp16-17, 2003.
32. T. **Jorgensen**, *Den Lille Tovværkslære*, Esbjerg Tovværk Fabrik, Esbjerg, 1950.
33. J. **Joris Hage**, “Heraklas on Knots: Sixteen Surgical Nooses and Knots from the First Century A.D”, *World Journal of Surgery*, Vol.32, pp648-655, 2008.
34. G. **Langenfelt**, “Hjalmar Öhrvall - Om Knutar”, *Fataburen*, pp85-87, 1917.
35. D. **Lever**, *Young Officer's Sheet Anchor*, London 1808, second edition 1819. Fascimile reprint by Sweetman, New York, 1963.
36. V. **Linder**, *Lärobok i sjömandsskab*, Stockholm, 1896.
37. K. **Lund**, *Knob og stik*, Borgen, isbn 87-418-7710-1, Copenhagen, 1970. Third printing 1982.

38. L.G. **Miller**, "The Earliest (?) Description of a String Figure", *The American Anthropologist*, Vol.47, pp461-462, 1945.
39. F.W.J. **Paulsen**, *Lærebok i Praktisk Sjømannsarbeid*, Aschehoug & Co, Oslo, 1936.
40. D. **Pawson**, "Om Knutar and the Thor Lundberg Letter", *Knot News*, nr.43, pp1-5, issn 1554-1843, March 2004.
41. **Peabody Museum**, Information on Phillips collection can be found at: [http://www.pem.org/museum/manuscript\\_list.pdf](http://www.pem.org/museum/manuscript_list.pdf)
42. M.E. **Ropponen**, *Solmukirja*, Suomen Partiolaiton Kirjasia nr.4, Werner Söderström Osakeyhtiö, Porvoo, 1931.
43. F. **Rosenow**, *Seagoing Knots*, W.W. Norton & Company, isbn 0-393-03338-4, lccn 89-71040, New York, 1990.
44. E. **Rosing** and G.M. **Robinson**, "Knot Security of Suture Materials", *Vetinary Surgery*, vol.18, nr.4, pp269-273, 1989.
45. Y. **Rydholm**, *Knop & splits och annat sjomansarbete for båtfolk*. Bonniers, Stockholm, 2<sup>nd</sup> edition 1974.
46. Y. **Rydholm**, *Knob, stik, takling og splejs*. Gyldendal, isbn 87-01-20021-6, Copenhagen, 1977.
47. A. **Saugman**, *Tovværksarbejde*, KFUM-spejderne i Danmark, Copenhagen. Originally 1923. Second edition 1937.
48. C. **Smith**, *Båtsegling, Kanosegling, Simning*, C.E. Fritze's Kongelige Hofbokhandel, Stockholm, 1889.
49. C. **Smith**, *Båtseglaordbok en samling förklaringar, upplysningar och välmentat råd*, Ny Tidning för Idrotts Förlag. Originally 1899. Fascimile reprint Bokförlaget Rediviva, isbn 91-7120-051-7, Stockholm, 1976.
50. **Svenska Scoutrörelsen**, *Scout Uppslagsboken*, Skeab Förlag isbn 91-526-0993-6, Stockholm, 1983.
51. S. **Svensson**, *Handbok i Sjømannsarbeite*, Kooperativa Förbundets Bokförlag, Stockholm, 1940. Second edition, 1950.
52. S. **Svensson**, *Handbook of Seaman's Ropework*, Adlard Coles, Granada Ltd, London, isbn 0-229-98654-4, 1971.
53. N. **Ström** and A. **Eneström**, *Knopar, sjomanstradition som hobby*. ICA-förlaget, Västerås, 1961. 7th edition, isbn 91-534-0208-1, 1972.
54. H. **Teppo**, *Punokset ja Solmut – Langat, nuorat, köydet ja muut punokset sekä niiden solmintä ja muu kytkentä*, Otava Oy, Helsinki, 1944.
55. O. **Wahlbeck**, *Rep och repslageri – under olika tidsåldrar*, privately published, isbn 91-630-0829-7, Linköping 1991.
56. H.A. **Öhrvall**, *Om Knutar*, Bonniers, Stockholm 1908. Reprinted Bokförlaget Rediviva, isbn 91-7120-112-0, Stockholm, 1978.
57. H.A. **Öhrvall**, "De viktigaste knutarna", *Almanack för Ungdom*, pp148-159, 1909.
58. H.A. **Öhrvall**, *De viktigaste knutarna. En handledning for sjöfolk, fiskare, scouter och praktiskt folk i allmanhet*. Verdandis småskrifter 185, Bonniers, Stockholm, 1912. Second, enlarged, edition 1922.
59. H.A. **Öhrvall**, *Om Knutar*, Bonniers, Stockholm 1916.
60. H.A. **Öhrvall**, "Något om knutar i antiken särskilt hos Oreibasios", *Eranos*, No.16, pp51-82, 1916.
61. <http://homepage3.nifty.com/nagauta/manual/ito.htm>. This web page appears to have moved to a different location: <http://ut-nagauta.hp.infoseek.co.jp/shamisen.htm> but it does not show the images any longer.

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Stiphout January 2008.

## A Tale of Two Spheres by Roy Chapman

You may remember my articles *From the Ditty Bag*. I started off the first essay explaining that I was often frustrated by DIU articles, which require rare tools or unobtainable materials. "KISS". Therefore I used common household hand tools. This article was prompted by the very nice reprint in KN of an article by Luc Pouveur regarding spherical coverings of 18, 24, 36 and 48 panels. Tied in hand, his method "keeps it simple".

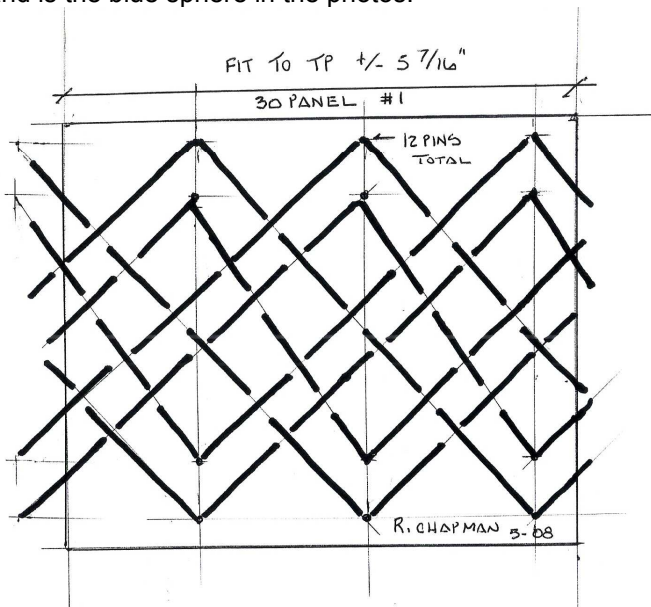


At the time it arrived I was working at knotting over a mandrel with ABOK #2360, extending, elongating and blending. Two blended #2360s produce an 18 panel spherical variation. I like simple grids wrapped around any handy cylindrical object (TP tubes?). The included grid will produce an 18 panel variation (derived from the ABOK #2360s). If you turn it "inside out", as you would a sock, it will be the same as Luc's "tied in hand" 18 panel product. Well done!



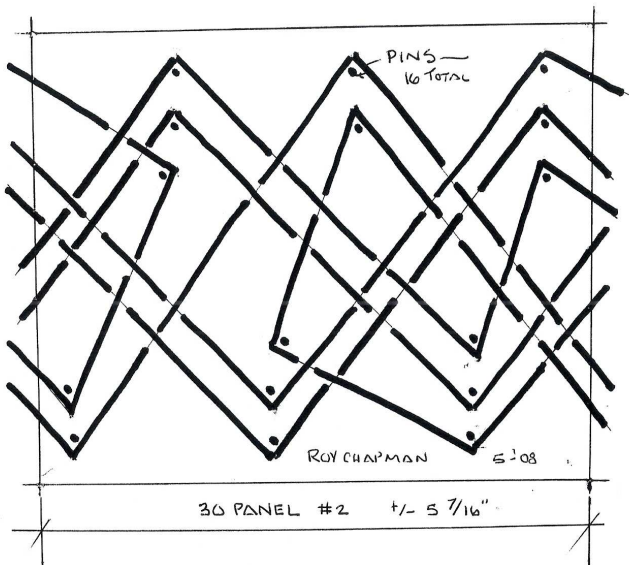
Next I extended two #2360s and found a 30 panel knot (the white one in the photo and grid #1). Also nice, now I'm getting somewhere. Could I develop another variation?

This resulted in the 30 panel variation #2. This is the included grid with the odd direction change labeled #2 and is the blue sphere in the photos.



30 Panel #1

Working on the mandrel allows me to make variations as you see in these photos. Slipping one of the "tied in hand" 18s on a mandrel helped me see that the 2 x #2360 knot I made was the same structure but "inside out". Slipping a 4Lx3B Turks Head Knot onto the mandrel as a variation of #1 thirty panel knot resulted in the red handled awl in the photo.



30 Panel #2

To help me think of these spheres and variations I have found it useful to think in terms as if it were working on the surface of a globe. I use North and South Poles, Equator, Northern Tropic, Southern Tropics as well. I think of directions of travel as if the cord was sailing around the world! This method of working and naming enables me to extend from the sphere while still on a mandrel resulting in new variations.

If you look at the 18 panel grid, please consider the pins along the Southern Tropic. Notice that at each pin the cord moves Southwest until it reaches the South Polar pin. What if the cord now left this grid and entered a THK South of this grid? Try a 4Lx3B THK and lead the working end into the THK at the crossing of two leads. Follow the clue provided by the 4Lx3B as well as the grid from your 18 panel knot, exiting the sphere at each South polar pin and re-entering at the same pin after a circuit of the THK. Now you will have created a pear shaped covering, spherical with a chimney growing out where the South Pole would have been.



I have not included a grid for this but only a photo of some yellow cord building a pear using the end of the provided 18 panel.

If you will photocopy the included grid and try this experiment I think you will see many more variations than we can possibly hope to publish. Could you create a "baton" with bulbous ends and a long THK between them (all in one cord)? Of course!

I hope that forming a mandrel from these grids and making these 3 knots will help you enjoy these useful tools for other tasks as well.

## Spherical Covers

by "Alcosinus" [Alain Legeay]  
and  
"Nono" [Norbert Trupiano]

I met my friend Norbert (Nono) by happenstance on the Net some years ago. Nono, who had been a mechanic in *La Royale* (France National Marine), was already knowledgeable and experienced in knot tying. More than that he was, even then, master in the art of envisioning in 3D and in drawing what was in his mind eye. Most of knots here are his, sometime with a little "folly grain" from myself, Alcosinus.

I was never a sailor, a scout or a mountaineer; I just "fell into knots" following a very severe accident. Sure, now and then, I had made some knots before, just so-so, nothing that got any admiration. Confined to a wheel chair for months on end, I made one, then two knots... soon I decided to make all of the ABOK! Chance made me meet with our translator: Nautile.

### Our Common Past With Spherical Coverings

When I bought my first copy of the Ashley Book of Knots in 1998, I was quite surprised to read that a little girl had been able to make a rather complex spherical cover.

Perplexed, I made a careful examination of #2217.

At that time I had absolutely no knowledge about knots, I was an absolute beginning learner. I made the #2217, on a wooden ball, following the Ashley instructions. Alas I have not kept it. Finished it looked a bit like a Turk's Head Knot without really being one.

Some years later, having obtained a billiard ball, I tried unsuccessfully to cover it with #2217, #2218 and #2219.

I asked Nono if covering it was possible at all? He went back home with the billiard ball and some time later sent me a picture.

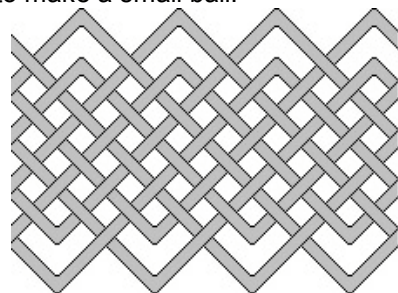


He had succeed! But How? I am sure he spent a considerable time searching and that he made many attempts; the shepical cover in its finalized aspect can been seen in the above photo. I asked him how he made it? Was it coming from #2219? Answer: No!

### Making It Happen

Nono has a passion for this sort of diagram that he spends a lot of time researching. I know that independently of ABOK, that he does not even own, and the Internet that was not available to him at the time, he discovered by himself the mirror trick and the assembly of different knots so as to make bigger and new knots with a single strand.

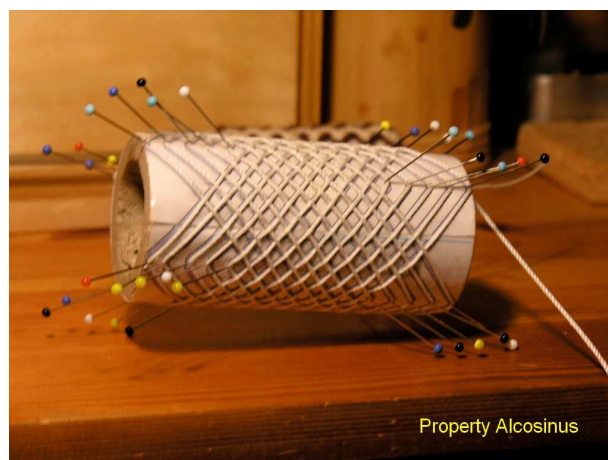
It is possible to put in 2 parellel LEADs and to double them, that holds true for the BIGHT. With this basic enough idea and adding a mirror image, it was possible to make a small ball.



So to get a covering for my billiard ball, it was only necessary to put more LEAD and BIGHT in the correct ratio. Using this, it becomes possible to cover a cube, a parallelepiped, a pyramid, an ovoid stone. It is necessary to get the correct LEAD/BIGHT ratio. I will come again to that point in another article.

The difficulty is in drawing the diagram and in experimenting with the shape obtained. We are always a bit uncertain about the exact shape our drawing will give as a knot.

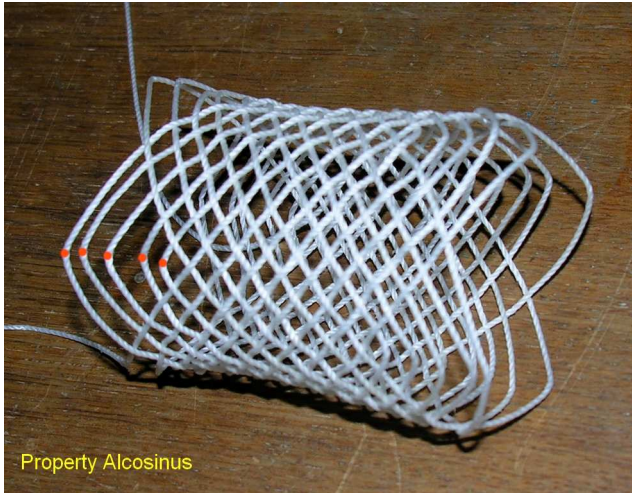
Here are the phases of the covering of a billiard ball.



Phase 1



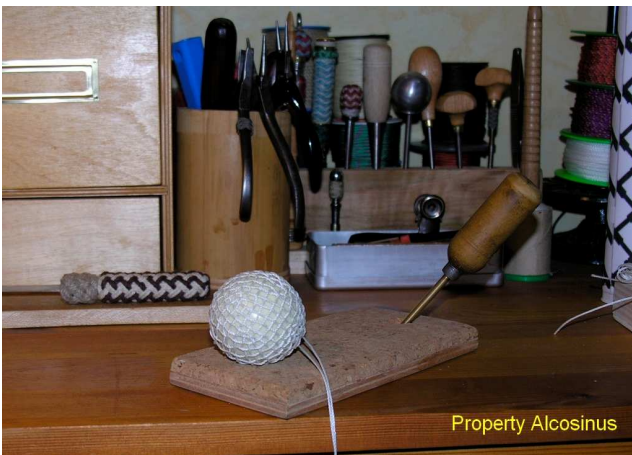
Make the grid with cordage; take care of not making a mistake. I work with a throw away mold, so if I make a mistake, I cut, correct and joining again before going on.



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Phase 2

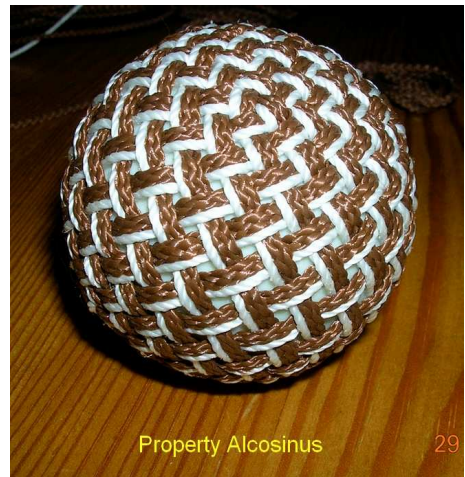
Take the finished mold off its support without making a mess of the arrangement. Just above is a picture of a herringbone pattern 5 parallel LEAD. When doing this sort of job you better not be counting your time. You only have to avoid making any mistakes in the over/under sequence.



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Phase 3

Put it in place on a billiard ball or another sort of ball. Don't over tighten! Double the mould by "following the leader". Do not tighten at this stage. Now discard the mould by taking off the "mule" threads then double and triple as needed with the final cordage. That depends on the cordage diameter. Tightening and dressing this sort of sperical covering is extremely delicate work. It demands a huge helping of patience and many hours of concentration. (Don't forget clean hands are a must too).



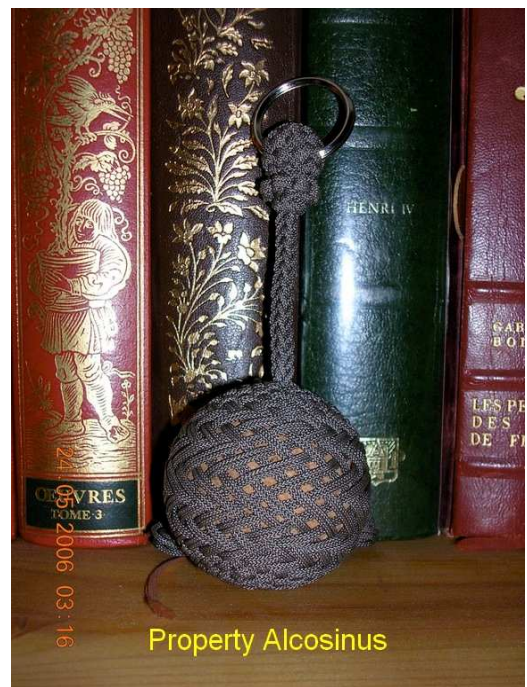
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Phase 4

From this sperical covering we made variants.

Here we put a chevron pattern in the center using a gradual and regular design.

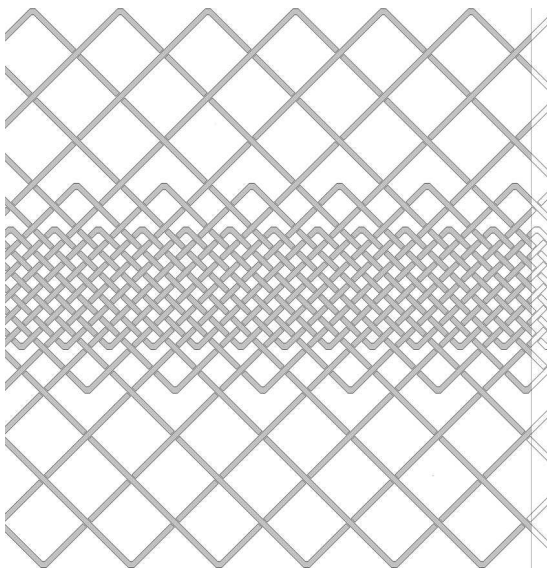


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### Other Ways

Still using the principle of a mirror image. We also tried a mat by Pat Ducey. This image I found on the Net and it was my computer screen background the first time Nono came to stay a few days of vacation with me. Captivated by the pattern, Nono went back to his home with a copy of the picture of which he made a special drawing. This drawing we then sent to Pat with our friendly regards as he had been our starting point.





The drawing lead to this:

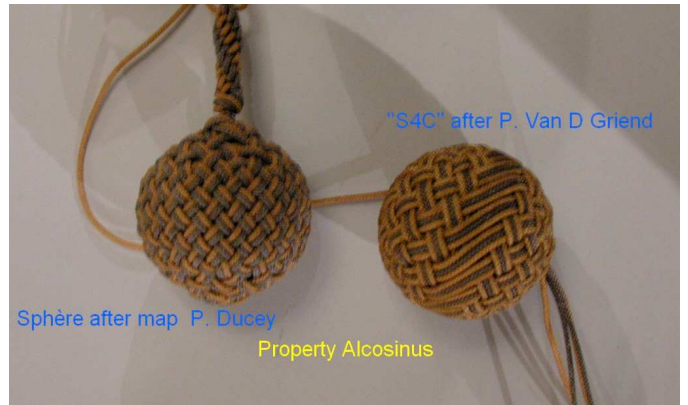


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The central pattern of the original mat is easily recognisable. We played with other sperical covers such as can be found in "S4C" by Pieter van de Griend. We made a new diagram inspied by the S4C booklet.



"S4C" after P. Van D Griend

Sphère after map P. Ducey

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Of course it goes without saying that we we will be quite happy to give our drawings to the ones asking for them. (Our addresses are in the IGKT-PAB booklet). There should be other articles in the future.

