

The MASIK

Quarterly Newsletter of QAJAQ USA
The American Chapter of the Qaannat Kattuffiat

www.qajaqusa.org



Editor's Corner

Bobby Curtis

This summer has been good to me. With my heart fixed, I have been able to restore confidence in my paddling skills and am again able again to reliably execute a roll on my on-side. My off-side roll is still unreliable, but with practice I hope to change that. In early August, there was a discussion on the QAJAQ USA Greenland Kayaking Forum on a desirable chronological order for developing rolling skills. http://www.qajaqusa.org/cgi-bin/GreenlandTechniqueForum_config.pl/noframes/read/22777. The thread was thought provoking, and gave me some good ideas on how to expand my skimpy repertoire of the standard roll, side scull and balance brace.

A lot of credit for improving my rolling skills goes to the experience gained from other paddlers, and a 17ft X 21in wooden kayak I built. This summer, I've had the opportunity to meet and paddle with other QAJAQ USA members who have built some exceptionally fine traditional SOF kayaks and developed very proficient rolling skills. After paddling some very low volume traditional qajaqs and finding out how different and well they perform, I made a low volume wooden hybrid kayak. It has a 20in beam is 18ft long, and with me in it rides about one and one half inches above the waterline at the rear of the coaming. A few years ago, I would never have believed that I would paddle a kayak with a 20in beam, let alone make one. I now wonder if sometime in the future it may be possible for me to comfortably paddle one of those 18 – 19 in beam kayaks.

When I began sea kayaking about twelve years ago, my focus was on exploring, camping and gunk-holing. A major concern of mine was how to remain upright while paddling. I really enjoyed going off by myself in my kayak loaded with camping gear exploring areas of coastline. I also spent a lot of time learning how to re-enter my kayak in case of a capsized. The kayaks I paddled then were large in volume, and I didn't have much success learning how to roll them. At the Arctic Boat Gathering in Mystic, CT, I had an opportunity to squiggle into and paddle a few of the very low volume kayaks, and pick up some good pointers on some Greenland self rescue maneuvers. I was uncomfortable about the squiggling in and out, but, I must say, I enjoyed paddling them, and am beginning to see why they are great fun to paddle. I also took some instruction there, didn't have much success learning the chest scull, and I totally blew the standard roll with paddle behind neck. However, I tried that roll it again using my 20in kayak at our ConnYak club picnic, and with the help of some members, I actually did it. I even got the throwing stick roll for the first time. These experiences have opened up the way for me to learn more of the Greenland capsized maneuvers I've read about and watched others do but have been unwilling myself to try. Is the kid in me waking up again? I hope so.

MISSION

Qajaq USA is a non-profit membership organization that is officially recognized by [Qaannat Kattuffiat](#) (The Greenland Kayaking Association). Qajaq USA is committed to supporting Qaannat Kattuffiat and their efforts to preserve, study and promote the traditions and techniques of Greenland kayaking while seeking to further the appreciation and development of Greenland-style kayaking in the United States.

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EVENTS CALENDAR

2004 KAYAKING EVENTS

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QAJAQ USA OFFICERS

President

Greg Stamer

greg@qajaqusa.org

Vice President

Keith Attenborough

keith@qajaqusa.org

Historical & Kayak Building Advisor

Harvey Golden

harvey@qajaqusa.org

Membership

David Braun

dave@qajaqusa.org
membership@qajaqusa.org

PNW Regional Advisor

Mike Hanks

mike@qajaqusa.org

Forum Administrator

Shawn Baker

shawn@qajaqusa.org

Advisor, Greenland Liaison

Pavia Lumholt

pavia@qajaqusa.org

Newsletter Editor

Bobby Curtis

bobby@qajaqusa.org

Events

Robin Snow

robin@qajaqusa.org

Archivist, Historical Advisor,

Journal Editor

Vernon Doucette

vernon@qajaqusa.org

archivist@qajaqusa.org

Graphic Designer

Tamara Hanks

tamara@qajaqusa.org

THE MASIK STAFF

Editor: Bobby Curtis

Graphic Layout: Tamara Hanks

Proof Reading: Bill Price

Review Board: Greg Stamer,
Harvey Golden, Vernon Doucette

Greenland National Championships 2004

The real stars are the children

By Cheri Perry



I tried really hard not to have any expectations. I had never ventured far from the US, and I wasn't sure what to expect. But I was pretty certain that I was going to a competition that was a national event with a lot of good kayakers. This competition is the Greenland National Championships, a week long event held this year in Qaqortoq at the southern tip of Greenland. The competition consists of the following events: short distance racing, long distance racing, relay team racing, a portage race, rope gymnastics, rolling, team rolling, and harpoon throwing. I'm really a roller, so when I participate in a race I feel out of my element. I went to a couple of races in Connecticut to prepare, and found these to be pretty straight forward. Racers arrive at 9 A.M., pay, get a number, eat a power bar, stand around, and drink some Gatorade, on the water by 9:40, and the whistle blows at 10:00 for a 10 o'clock race. Everyone then paddles around for a couple of hours, followed by awards, then we all go home. At these races there were no real spectators, with the exception of a few devoted significant others. This is what I would have expected in Greenland, if I had expectations.

KIDS RACING



KIDS RACING



I arrive in Greenland. For simplicity's sake, picture Greenland in your mind as one big iceberg with a bit of dirt and rock around the southern and western edges. The villages are built on this dirt and rock and are spaced quite far apart. The villages are also small; *Qaqortoq* has a

population of only 3000. In Greenland, there are roads within towns, but there are no roads connecting towns. Traveler's choices of transportation between towns are a ferry, powerboat, or helicopter.

QAQORTOQ



We arrived in *Narsarsauq* by airplane, and then took a four hour ferry ride to Qaqortoq at a cost of fifty U.S. dollars. If we had wanted to get there quicker by helicopter, it would have cost \$250. On this ferry we passed only one town. The Championship is an event that draws not only the competitors from all over Greenland; it is also huge social event. Some Greenlanders are on the ferry for a week, others for 3 days. Everyone is on holiday. Most travelers are families looking forward to seeing other family members or friends that they have not seen since last year's competition. This is an expensive trip and their only summer holiday. While some of the more athletic folks have been training, half of the competitors are children. Some adults have joined recently so that their children will learn about kayaking, but they are new to the sport as well. The feel of the event is more like a huge family picnic/reunion than national sporting competition. It begins with children racing and being encouraged by the raucous cheers of the adults. After that, the atmosphere starts to become more competitive with the mix of older (34 and up) and younger women (15 – 19). The Qajaq Woman of the Year class in the 20-34 year group is fairly serious, with some exceptional athletes. Next in the line up is the same mix of older and younger men, followed by the Qajaq Man of the Year class of 20 – 34 year old men, again a serious group with a lot of athletes. More than once the final class would finish in twilight, which translates to midnight in Greenland. Most of the men competing in the final class are also the mentors/teachers for the children and women who

competed earlier in the day, they have been on the water for hours helping out – forget about carbing up!

WOMENS TEAM ROLLING



I was originally a bit disappointed in my classification for the competition. I had hoped to be in the Greenlandic class and to compete for Qajaq Woman of the Year. I was able to waive my age (I'm 42 but raced in the 20 – 34 age group) but I was placed in the International Class. I was the only one in this class; therefore I won all of the medals. Still, I yearned to be with the Greenlandic Class and receive the awards I earned. I placed 3rd in short distance, 4th in long distance, 1st in portage, 1st in rolling, 1st in team rolling, and 1st in the relay race. I did not participate in the harpoon throwing. If I had competed in the Greenlandic Class instead of the International Class, I would have tied for second place for Qajaq Woman of the Year. Although I would have loved to compete in the Greenlandic Class, I am happy that my participation in their event did not take away honors from the Greenlandic women.

Here in the USA we have so many advantages: a wide selection of equipment, wet suits, dry suits, booties, the use of pools in the winter, water year round, paddling buddies close by. I assumed that the Greenlanders have the advantage of being taught at a young age by a wise elder and that the whole community revolves around kayaking, and that Greenland must be the Mecca for all kayaking. I also assumed that this amazing island would be full of wonderful paddlers like Maligiaq. (There I go with my expectations again!) If I had put any thought into it, I would have realized that these people, like us, have jobs, families, and many other obligations. Most Greenland kayakers don't learn from an elder or local guru, their local clubs are not that active. There are not that many people to kayak with, since the clubs are so far apart, and going alone is quite dangerous in 38 degree water with jeans

on. The local club in Qaqortoq has only 20 active members. I was shocked to find out that not every Greenlander kayaks, and most actually cringe at the thought of it. Many people in town had no idea that the event was even happening.

MALIGIAQ WINS SHORT DISTANCE RACE



Even though my expectations, which I tried not to have, were completely wrong, I still thoroughly enjoyed myself. I felt challenged, but relaxed. There was not a tight schedule that had to be adhered to. The sportsmanship showed by the athletes was something to be admired. The real heart of the competition was not focused on the many talented adult athletes. Instead, the real stars are the children who are being taught the nearly lost skill of kayaking. The Greenlandic folks are a wonderful people who were quick to laugh and had a great sense of humor. It is refreshing to be with people who are so nonjudgmental, and unpretentious. They understand that it's all about people, not their relationships, nor about the medals.

CHERI COMPETING IN A RELAY RACE



Cheri Perry lives in Connecticut and has been paddling for 15 years. She has worked at the Maine Island Kayak Company as a guide on occasion, and currently does a small amount of personal instruction. E-mail: cheriperry@sbcglobal.net. Web site: <http://www.whitemountainweb.com/kayakerperry/index.html>.

QAJAQ USA

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Richard Nonas New York City, NY

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Qajaq Talk

Greg Stamer



With sustained winds of 66 mph and gusts of 105 mph, hurricane Charlie hit Orlando hard. Although I have lived in Florida for over 25 years, until Charlie hit, the worst storm that I had encountered was in Nuuk, Greenland, during my visit there in 2000 for the first Open National Kayaking Championship. Nuuk is known for some of Greenland's foulest weather, as the Southwest Greenland coast traps warm air moving up from North America, and the resulting storms can last for days and days. During my stay, winds gusted over 70 mph with days of continuous rain, but this storm didn't even warrant a name, it was simply "seasonal bad weather".

When the storm in Nuuk was raging at its peak, the young Greenland kayaker's eyes literally beamed, and a large number of them were eager to play and surf in the conditions as soon as their competition duties were satisfied. In true Greenlandic fashion, the elders seemed unconcerned and made no attempt to talk the young men out of their plans. They didn't even plead with them to "be careful". It's simply part of the cultural differences that one finds in the far north. Harvey Golden and I found some time to play as well, and I discovered that the "storm roll" came in very handy while paddling Maligiaq Padilla's narrow racing kayak in the large fiord of Nuup Kangerlua. This is the same area that John Petersen is shown surfing and practicing rolls during a gale, in the video "Amphibious Man".

Greenland kayaks are certainly no

strangers to very demanding conditions. Although some kayaks historically were used seasonally in protected waters, in other areas, the kayaks were used year-round, in exposed conditions, in relatively ice-free waters. John Heath loved to relate stories to enthralled listeners, passed on to him by old Greenland seal catchers. Some of these accounts described kayakers who were caught offshore for days, and in some cases their kayakers were flipped end-over-end in violent seas.

Kayakers in this country, and elsewhere, are rediscovering the potential of the qajaq for use in demanding conditions. While most experienced kayakers understand the added risk of kayaking without added flotation, sea-socks or bulkheads, many novices do not. With practice, it is very easy to scull and roll a Greenland kayak, and prevent a wet-exit in the first place. However, accidents can still happen (e.g. your tuilik can pop off the coaming, the hull can be sliced or punctured, etc). For this reason, I recommend that you emulate Harvey Golden's antics as shown in the accompanying photograph. Play in your kayak in safe conditions to determine how it handles when flooded. Will it sink? Can you still paddle it? Can you roll it? Can you reenter and roll it? Can you get back inside using a paddle float or just the buoyancy of your Greenland paddle? Can you empty it (assisted) using Hutchinson's "curl" technique? Have you tried the "dewatering" technique as described by Peter Strand in the Spring 2003 issue of the MASIK?

Although most skin-on-frame kayaks will float when flooded and empty, most will not float when flooded and with you seated in the cockpit (without flotation). The low freeboard, that makes rolling easier, can exacerbate this problem. Of course this isn't a danger unique to skin-on-frame kayakers; most kayakers without bulkheads share the same risk, including my carbon surf kayak. To mitigate this risk, consider adding float bags in both ends, secured to the frame. Please realize that for extremely low volume kayakers, such as a "rolling kayak", bags alone may not provide enough flotation to safely paddle the flooded kayak — as the frame itself prevents float bags from filling every nook and cranny. An excellent addition to float bags is a sea-sock. A sea-sock is nothing more

than a bag that fits over the cockpit coaming and encloses your lower body. A well-designed sea-sock will limit the amount of water that can enter the kayak as well as preventing sand and grit from damaging the framework and lashings. For information on making a sea-sock see the summer 2003 issue of the MASIK. Finally, you might consider adding fabric bulkheads and deck hatches to your next skin-on-frame kayak. Pavia Lumholt, past president of Qajaq Nuuk and Qajaq Copenhagen, has designed a simple fabric bulkhead system for installation in a skin on frame kayak. For details, please visit his website at <http://www.paavia.dk/>.

Of course, these safety features are not "traditional" and many of us are naturally skeptical of "improvements". Who among us hasn't seen a number

of well-meaning "improvements" that obliterated subtle yet important features of Greenland kayakers and paddles? That said, the Greenland kayak has always been changing, always evolving to meet the needs of local usage. As the Greenland kayak is used more and more for recreation and sport in Greenland, and elsewhere, I expect that this significant change in usage will have an impact, and the kayak will surely adapt. Who knows? Will bulkheads be adopted as eagerly as some other innovations, such as the skeg? The skeg, (developed to meet the changing needs of hunting with a rifle), once introduced, spread quickly throughout Greenland.

Time will tell.

The "Fine Points" of Harpoon Throwing

For accuracy and distance

By Greg Stamer

*As Tobias reached the sealing grounds, about nine miles from his settlement, he readied his harpoon. During the journey his harpoon rode at the side of his kayak, often submerged in the water. It was held by two straps attached to the harpoon shaft which terminated in small bone beads. These beads were tucked under the stiff deck straps on the foredeck and behind the cockpit. Although carrying the harpoon in this fashion did add some drag for the long paddle out, it also prevented the harpoon from freezing to the deck (P. Scavenius Jensen, *Den Grønlandske Kajak og Dens Redskaber*, page 34). It also ensured that when it came time to throw that the throwing stick (*norsaq*) would not stick too tight to the harpoon due to dryness (Kaj Birket-Smith, *Ethnography of the Egedesminde District*, page 318).*

Now, with seals in sight, Tobias readied the harpoon and placed it on the right side of the kayak deck, the foreshaft pointing aft. He fitted the sharp harpoon head over the socket of the blunt bone foreshaft. Seal skin thong trailed from the harpoon head to a piece of bone riddled with several holes, looking similar to a domino. This piece, the line tensioner, was pulled tight and fitted over a special peg



MICHAEL JAKOBSEN THROWING A HIGH-LOB BULLS-EYE

*on the harpoon shaft to hold the harpoon head securely in place. The harpoon line continued on to the line rack (*asaloq*) on the foredeck, where it was kept coiled and ready, and then behind the kayaker, to the large hunting float (*avataq*).*

With a large seal in sight Tobias quietly glided to within twenty feet and prepared to throw. While holding the paddle in the center of the shaft with his

left hand, as a counterweight, he grabbed the throwing stick with his right hand and lifted the harpoon. He leaned back to throw. The stiff throwing stick effectively lengthened his arm, adding incredible force to the throw. As soon as the harpoon was airborne, he immediately placed the throwing stick in his mouth, and whirled about to place his right hand on the hunting float behind him. He intently

watched the white bone knob at the tail of the harpoon. A “hit” would be evidenced by a “hitch” in the motion of the knob as it entered the water. A miss would only see the harpoon smoothly penetrate the water. Time passed slowly. As the harpoon reached the sea, there was a slight hesitation to the knob as it disappeared. The seal was hit! Immediately Tobias threw the hunting float, with the attached line, well clear of the kayak. Any entanglement could cost him his life. Had the line stuck fast to the kayak, or wrapped around Tobias’ body, the jolt of the fleeing seal could have easily broken his back or drowned him. Attached to the kayak via harpoon line, a seal can pull a kayak and submerged kayaker swiftly and forcefully through the water. The water pressure and entanglement with the harpoon line can make it extremely difficult to roll up. Many kayakers drowned in this manner, often with their comrades sprinting furiously in vain to help them. Others were pulled into sharp ice, slicing their body or the skin of their kayak. Today, however, was a good day and nothing went wrong for Tobias or his comrades.

The seal had been sleeping, with only its back exposed above the water. On impact the bone foreshaft of the harpoon, held in place by lashings, dislocated sideways. This greatly reduced the shock of the impact, preventing the wood shaft from breaking. This also caused the line to slacken, allowing the “domino” line tensioner to slip off its peg, which enabled the harpoon shaft to float free, safe from the thrashing of the seal. The harpoon head lodged sideways under the thick fat layer of the seal. This usually did not kill a seal outright but strongly secured it to the drag of the float and line, where it could be tracked. It eventually became exhausted from towing the float. The float would also prevent it from sinking, once dead. It was not unknown for the seal to become enraged, and turn on the hunter, first shredding the float and then counter-attacking the kayak.

Tobias had retrieved his harpoon shaft and stowed it, and made ready his killing lance. A non-injured seal could

stay submerged for fifteen minutes. While following the float, he had seen the seal turn to attack and watched intently as it charged toward his kayak. He readied the lance. Should he miss with his throw the mistake could be fatal, as the seal could easily puncture the hull of the kayak, from above or below the water.

Fortunately, Tobias’ throw hit its mark. Once dead, the seal was then inflated, and towed behind the kayak using elaborate towing gear of bone toggles and sealskin thong. By day’s end he would have four seals in tow, much to the delight of his wife. On his return, he saw her silhouette above the cliffs near the settlement. The women were nervously awaiting the first glimpse of their husbands in the rough seas.

This account is fiction, but it is pieced together from many factual accounts, notably, Eskimo Life, by Fridtjof Nansen. Hopefully it will give the reader some idea of not only the dangers of hunting seals with harpoon and line, but also how the harpoon was designed and rigged for use. The Greenlandic harpoon and its accoutrements are a marvel of engineering. An exploded diagram of the knob harpoon is available at http://www.qajaqusa.org/temp/knob_harpoon3.gif.

Harpoon throwing, both for accuracy (target throwing) and distance, are two events included in the annual Greenland National Kayaking Championships. Rules for these events can be found on the Qajaq USA website at http://www.qajaqusa.org/QK/rules_for_competitions_in_kayak.htm. Harpoon throwing for sport is a fun and interesting pastime and will test your kayak handling skills. It will humble you at first and give you a thorough appreciation for the Greenland kayak hunters. Although it is common-sense, do not throw a harpoon in anyone’s direction. Even without a harpoon head in place, a heavy harpoon strikes with lethal force.

The knob harpoon is fairly heavy, it must weigh at least 1 kg (2.2 lbs) dry for competition. At the “business” end is a fairly blunt bone or plastic foreshaft lashed to the wooden shaft. At the tail, a bone “knob” is attached, giving this implement its name. A stiff throwing stick is used

to amplify the effects of the hunter’s arm, adding much additional force. The throwing stick for a knob harpoon attaches to dual pegs on the side of the harpoon shaft (side-thrown). However, for some other weapons, including the “winged harpoon” (a lighter harpoon with bone “fins” at the rear), the throwing stick presses directly against the butt-end of weapon (end-thrown). Side-thrown and end-thrown weapons often require a slightly different throwing technique.

Carrying the Harpoon on Deck

For the harpoon events, the harpoon must be secured so that it doesn’t fall off the deck prior to the throw, otherwise disqualification will result. Hunting kayaks are equipped with a line rack that features a hook on the right leg (for a right-handed kayaker) to hold the harpoon shaft on the foredeck, and often a bone harpoon rest near the cockpit. Some kayaks at the Greenland competition are graced with a line rack, but most are not so equipped. The most common apparatus used to hold the harpoon in competition is a long, thin lathe of wood attached to a cradle. The photo of a common harpoon holder illustrates an example, inspired from a drawing in H.C. Petersen’s Skinboats of Greenland page 40.

A COMMON HARPOON HOLDER



These devices don’t need to be elaborate. During the competition in Ilulissat, where I had no harpoon holder and was unable to borrow one, I quickly made a serviceable one from spare bits of wood and sealskin that were scattered

about the competition site. The “stick” of the holder is wedged under the foredeck declines and the cradle holds the harpoon shaft. The harpoon is carried with the shaft along the right side of the coaming, foreshaft pointing aft and well behind you (these directions assume a right-handed kayaker).

To throw the weapon you grab the *norsaq* (which is firmly attached to the harpoon shaft via the twin pegs) and lift straight-up. As you raise your throwing hand, the foreshaft is pulled through the water (parallel to the keel) until it rises above the water and is brought to bear on the target. When in position to throw, the harpoon will feel somewhat “nose heavy”.

Securing the harpoon is important since for the men’s competition classes you must be moving forward prior to throwing the harpoon. For men’s target throwing the kayak is only required to be moving very slowly. For the long-distance throw the men sprint rapidly toward the “throwing line” and stop paddling just a few meters before it. They hold the harpoon ready and let it fly, just before their body crosses the line, the speed of their kayak adding distance to their throw.

The “Windup”

Unlike throwing a baseball where you strongly twist your torso, I was taught in Greenland to throw a harpoon like throwing a knife -- with very little torso twist -- lean back and then lean forward. After you lift the harpoon, you start the throw by leaning backward, even to the point of allowing the butt end of the harpoon to enter the water. You then raise your torso and lean forward in concert with your throw. Please note that if you wind-up by twisting your torso, it is very easy for the butt end of the harpoon to strike the kayak gunwale or kayak deck. This can impede your ability to lean backward and seriously hamper your throw.

To prevent the knob of the harpoon from striking the deck, I was taught at a training camp in 2000 to turn the kayak just right of the target so that you throw over the left side of the bow. For a right-handed kayaker, this method ensures that

“The seal had been sleeping, with only its back exposed above the water. On impact the bone foreshaft of the harpoon...”

there is open water behind you so that nothing can obstruct the harpoon when you lean backward.

Greenland seal catchers, however, use a different method.

They take their last stroke on the right side so that the kayak turns just left of the target. They throw over the right side of the bow. Paul-Emile Victor in

La Civilisation Du Phoque writes (translated from the

French by Vernon Doucette), “When the seal is finally in a good position to harpoon, the hunter takes a final stroke of his paddle or a sculling stroke on the right hand side of the kayak. In his left hand, he holds the paddle by the loom, which at the same time assures him of good balance. The final stroke of the paddle gently drives the kayak to the left, putting him in a favorable position to throw the harpoon and throw the float into the water with his right hand.” This is confirmed by Kaj Birket-Smith; “When the hunter has discovered a seal, he places the harpoon on the right deck of the kayak and then cautiously paddles as close to it as he can, if possible facing the wind and having the sun at his back. A strong man can at most throw the harpoon about 18m (59 feet), and harpooning is best done from behind. When he has come sufficiently close, he turns the kayak slightly to the left, throws, catches with a lightning movement the throwing board between his teeth, and flings the float far out to the right” ; *Ethnography of the Egedesminde District*, page 320. The critical advantage for hunters, implied in the first quote, is that turning the kayak to the left of the target requires them to rotate their torso clockwise to throw. This ensures that their torso is rotated in the proper direction to make it faster and easier to release the hunting float behind them.

As you lean backward to throw the harpoon, hold your paddle in your weaker hand in the center of the loom. This helps you to balance, acting as a counterweight. If you throw a harpoon in a very narrow kayak it can be helpful to press the paddle against the deck/water at the end of the throw for stability. However, please realize that if you do this in competition, your throw will be disqualified (the paddle must

not touch the deck).

MALIGIAQ DEMOS HIS WINDUP



Note Maligiaq’s relative lack of torso rotation, how he leans backward, and how the paddle is held. Also note that all of his fingers are on the throwing board. With a side-thrown weapon such as this, you do not have to hold the harpoon shaft itself.

Throwing the Harpoon

During competition, the harpoon must land nose-first to score points. While at first glance it might seem that the long, heavy foreshaft of the knob harpoon would guarantee this to happen automatically, it actually takes quite a bit of practice to throw a harpoon in a graceful arc. Among novice throwers it is all too common for the harpoon to land flat along its length or even for the nose to elevate in flight and land with the tail striking the water first.

The two Greenlandic-made harpoons in my collection are so different in weight distribution and balance that I would first blame technique, rather than weight distribution, if your throws fail to follow a smooth arc. However, I did hear of one Greenlander at the 2002 competition who placed lead in the wooden harpoon shaft, just under the foreshaft, to make it of legal weight and to increase the odds of the nose hitting first!

Even with personal instruction at a Greenland training camp in 2000, I required several hours of practice before I could throw my harpoon smoothly and with power. Throwing from a seated position feels very awkward and weak

at first. Over time you will learn how to create a foundation with your lower body to enable a strong throw. You will also learn subtle methods using your wrist and arm, to control the throw, and to manage a smooth arc. This is difficult to describe, and you must learn to throw a harpoon by doing, but hopefully some tips will help.

Petersen provides the following hints on throwing technique; "Using a hook throwing board (hook attaches to the butt end of the weapon) requires a different technique to the one used with a side-positioned one. The center of gravity of a weapon held with a hook throwing board is moved forwards in relation to the position of the hand. The shaft cannot be held up unless the hunter holds it together with the throwing board, in the same grip. When using a side-positioned throwing board (such as on a knob harpoon) the hand moves forward and down with the throw; with a hook throwing board it is extended as far as possible forward." *Skinboats of Greenland*, page 94.

Fine-tuning the flight of the harpoon is also done differently for end-thrown versus side-thrown weapons. For an end-thrown device (e.g. a wing harpoon) "Adjustment for veering to the side is done by altering the depth of the hole in the (end) cap. Too deep a hole causes pull to the right, too shallow, pull to the left." pg 94. For a side-thrown harpoon (such as a knob harpoon), fine-tuning is done by altering the angle of the slanted back peg. Petersen writes, "An inward turning [flight] (going left for a right-hander) is corrected by the right-handed hunter by slanting the back peg slightly more to the back. An outward turning is the result of too great a slant; *Skinboats of Greenland* page 93. Kaj Birket-Smith reports, "If the harpoon is apt to pass too far to the right, the hindmost peg of the [harpoon] must be cut straighter. If it strikes too far to the left, the peg must be made more curved. Originally, e.g. during the latter part of the 18th century, the knob harpoon was thrown without a throwing board"; *Ethnography of the Egedesminde District*, page 300.

In direct contrast to Petersen's instructions, for the (side-thrown) knob harpoon, Maligiaq and some other Greenland competition participants taught me that you should not allow your throwing hand to drop on the follow-through. Rather, Maligiaq uses a short, powerful throw, without much wrist break

and he stops his hand abruptly at the end of the throw. The end of his throwing stick remains pointed upward at the end of the throw rather than becoming horizontal. A competitor at the 2002 competition told me that by stopping the motion of your throwing hand in this fashion that you can effectively "skid the tail upward" during the harpoon's flight to force the nose to drop downward quickly. This takes some practice but proves very useful for the short-distance target throwing.

For the target throw there are two strategies for finding the bulls-eye. By far the most common method is to throw a very high-lob where the harpoon lands almost vertically. However, Maligiaq Padilla and some competitors prefer to throw a "line-drive" at the close-range target. This is a method that his Maligiaq's grandfather taught him for hitting game close to the kayak.

In the images of Michael Jacobsen throwing a high-lob bulls-eye, and a competitor throwing a "line drive", note that neither athlete allows the norsaq and their throwing hand to drop forward on the follow-through.

HIGH-LOB BULLS-EYE



THROWING A LINE-DRIVE



Do you snap your wrist and drop your throwing arm or do you stop your throwing arm abruptly? Do you throw a lob or a line drive? This is subject to personal variation in Greenland. Be aware of the possibilities and experiment.

Props

The target used for the precision throw in Greenland is a 2 meter (6.6 feet) circle; with four concentric rings spaced 25 cm (9.8 inches) apart. For men, the distance to the harpoon-target must be at

least 10 meters (32.8 feet). The distance for women and the adolescents is 5 meters (16.4 feet). After you develop a smooth and strong throw, I find that it helps to always throw at a target while practicing. Initially I used the inflatable pool rings sold as safety aids for toddlers, but a direct hit, even with a blunt harpoon foreshaft will easily puncture the float. Although this adds a vicarious thrill, it quickly becomes expensive as your aim improves, and you can only patch them so many times! Another simple option for a target is to use "swim noodles" (those colorful long, hollow, cylindrical foam floats popular with children), and join the ends to make a ring. These are more robust than the inflatable targets.

I hope that this information will increase your understanding and awareness of throwing a harpoon and encourage you to give it a try! Please treat these weapons with respect, use common-sense, and have fun!

Greg Stamer is President of QAJAQ USA, and has fifteen years experience using Greenland-style paddles and equipment. He credits John Heath and Greenland Champion Maligiaq Padilla as his primary mentors. Greg lives in Orlando Florida, with his wife Kate and two dogs. E-mail: greg@qajaqusa.org.



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http://www.qajaqusa.org/QUSA/membership_online.html

Self-Built Traditional Style Boats

A Regular MASIK Feature

My First Stitch and Glue Qajariaq

Based on my SOF

By Matt Johnson

Inspired and guided by Dave Murphy's article in the winter issue of the Masik, I built my first stitch and glue qajariaq.

After enjoying my SOF for a season, I had an itch for another boat building experience. Since my SOF turned out to be my favorite boat, I didn't think I could improve on it much. So I decided to build a similar design using stitch and glue construction. With the added safety and gear-carrying benefits of bulkheads, I could use it for overnight trips.

My search for an S&G kit or set of building plans that equaled my SOF in fit and performance seemed hopeless. I finally put the project on hold after a few failed attempts at making paper patterns of my SOF hull.

With perfect timing, the winter issue of the Masik came out and Dave Murphy had written an article that described building an S&G from anthropometric dimensioning. This was exactly what I had been looking for! Although, after reading the article, I didn't think that I could actually do it. It took two books and a lot of help from the Qajaq USA forum to finish my first SOF. I had no experience with stitch and glue construction. I purchased Chris Kulczycki's book "The New Kayak Shop" and found the building process to be simple enough.

Following Dave's lead I downloaded the free Hulls program by Gregg Carlson from <http://www.carlsondesign.com/> and got right to designing my hull. Since I had never designed a hull before, I vowed to keep it simple. I used dimensions from my SOF for a starting point. I then lengthened it and lowered the overall volume. The final hull didn't end up being exactly anthropometric but it seemed close enough for a good fit.

The software was intuitive enough to get the desired hull shape, but it lacked an easy way to print out panel drawings with their dimensions noted (as far as I know). If you do print out the panels they'll end up on three separate sheets of paper, I aligned these and taped them together. Using the nesting view in the



ON THE STRETCH OF BEACH NEAR SAUGATUCK IN SW MICHIGAN

Hulls program, I converted the eighths to inches and transferred those numbers to my printouts.

Compared to building a skin-on-frame, stitch and glue seems to be a little more tedious and it took a couple more weekends of work to finish. I did enjoy the fact that the hull comes together quickly giving you a very pleasing "kayak shape" to work with. The cost was about double that of my SOF, but I didn't skimp on materials. I used 4mm Okoume ply and West System epoxy. I did, however, skip the expensive marine paints and opted for Rust-Oleum Canvas White and protected that with several coats of a clear water-based polyurethane, which I finished with a lot of buffing. I'm not sure yet if I'd recommend my choice of coatings. Even though the finish came out quite nice, I'm not sure how durable it will be.

fast, edging is a little weird, but I could get used to it. And it rolls beautifully; oddly enough there is some slop in there for me to play with. This kayak is pretty sweet". Keith also plans to build his very own qajariaq this fall. It's 6.5" deep aft and 10" forward. I built the forward deck a little high for easy entry and exit. Since I usually land in breaking waves it has come in handy. A foam style masik gives me good contact with the hull.

All in all I like the contrast of my SOF's lively feel and light handling compared to my S&G's straight tracking and effortless speed. I'd recommend this approach to building with plywood to any SOF enthusiast looking for a hard shell version of their favorite qajaq or something completely different.

SOF AND S&G COMPARED



On the water I'm very pleased with my creation. At 18' long and 19" wide, it has good speed, handles well, and shows very little to no weathercocking. Initial stability is quite low, but it feels good on edge. A paddling partner of mine, Keith Wikle, remarked that, "It is very very

THIS KAYAK IS PRETTY SWEET



Matt Johnson is a tool and die machinist living with his wife and 4 year old daughter in SW Michigan. He was drawn to Greenland style paddling two years ago stating that "it's the Kung Fu of kayaking; a defense against asphyxiation, I love it". Matt can be reached at matt@qajaqs.com or visit his website: <http://www.qajaqs.com>

My Strip-built Disco Bay

Building a kayak for my wife

By Richard Kohlström

LAUNCHING THE DISCO BAY



I began paddling in 1977 and built my first strip-built kayak in 1998. It was a Kavat designed by Björn Thomasson. I have also built a few other wooden kayaks including a Shooting Star and Panache designed by Rob Macks.

In 2002 I was asked to build a strip-kayak for a newly retired man. I interviewed him about what kind of kayak he wanted and how he intended to use it.

At the same time, I was asked by Hans Friedel, a skilled designer/builder of boats and kayaks, to build the prototype of a new kayak named YLVA. As a coincidence, it happened to fit in with my client's needs- if I shortened the kayak to 5.20m (17 ft).

When Hans delivered the drawings, I also got another set of drawings for a very special kayak. He had come across a kayak that was built for Ken Taylor for his journey to Disko Bay in the early fifties. That kayak is now located in a Scotland museum. Hans studied the drawings of the kayak that were made by Duncan Winning, and then adapted them into a strip built kayak for average sized paddlers. He came up with a very low-profiled, narrow and hard-chined V-hulled kayak with classical West Greenland looks that is about 5.20m (17 ft) meters long. Hans asked for my opinion and if I would give it a try and build

a prototype. It was named the Disco Bay. Hans and I decided to use the letter "c" instead of "k" in the spelling of the Disco Bay in order that it not be confused with the actual Disko Bay.

I built the YLVA-model, and it came out satisfactorily. It lived up to all expectations, and has become a popular model. The one I built is 5.20m (17 ft) long, but can easily be adapted to lengths between 5.20m (17 ft) and 5.60m (18 ft 4 ½ in).

After building the YLVA, I started a study-circle with eight builders. The models built there were: four YLVA's, one Panache (Rob Macks), two Naiads' (Björn Thomasson) and one Stitch & Glue designed by Hans Friedel. The study-circle started in mid -December and all kayaks had been launched by early June. It was fun and satisfying to be part of the member's hard work and share their joy in this project. We all learned a lot from each other and became good friends. During this circle I didn't have an opportunity to start a project of my own.

After summer vacation I couldn't hold myself back any longer. I rigged my strongback and measured in the stations for the Disco Bay. I had decided to build a kayak for my wife and found out that this model would suit her in size and performance.

The hull was straightforward to strip, but it was a little tricky at the

hard-chines. I had to plane a bit and it required a little persuasion to lay the strips in those regions. I also incorporated a little skeg-like appendix at the stern stem for a little more tracking stability. My wife isn't inclined toward performing the acrobatic paddling maneuvers. She just wanted an easy paddling kayak.

Late last autumn there was a growing pressure on me to start another study-circle. I was lucky and could rent an unused "seven-eleven grocery" that had room for five builders plus an extra space where I renovated an old Skin-on-frame kayak. That kayak was homebuilt in the mid - thirties and hadn't been paddled since the mid - forties. Some ribs were broken and the canvas-skin was just scrap. Now it is re-skinned with cotton canvas, painted with linseed oil-paint and varnished. A new cockpit coaming and new outer stems were built because the originals were just scrap.

In this second study-circle the kayaks that were selected to build were: a Nomad (designed by Björn Thomasson), two YLVA's ,one 5.20m (17 ft), and one 5.60m (18 ft 4 ½ in) (designed by Hans Friedel), and two Disco Bay's (designed by Hans Friedel) An additional 19mm(3/4 inch) was added to the freeboard of the Disco Bay's to allow for more foot room.

STRIPPING THE DECK



The most common material to build from, here in Scandinavia, is *Nordic spruce (Pices Albae)* and the dimensions are 19mm (3/4 inch) wide X 4.5 mm (3/16 in) thick. I use epoxy from NM-system and 160g/sqm (5.64oz/10.76sqft) glass. This strip-building is very forgiving. The final product from this type of laminate construction is a kayak that is very strong, lightweight, and very durable. As an extra, you get to see the beauty of the wood. Strip-building also lends itself to being very creative with very exquisite patterns and inlays, although, you can easily destroy the natural look and end up with something that resembles fine furniture. It's best to find a balance, and for me, less is more.

ATTACHING DECK TO HULL



I finished my Disco Bay and was able to launch it at the kayak meeting we had in May.

It ended up weighing 16 kilo (35 lb), 5.20m (17 ft) long x 0.51m (20 in) wide and was outfitted with two bulkheads, two flush hatches, and a wooden seat.

Hans Friedel was the first paddler and he approved of it with some remarks on the balance. The next paddler was a good friend and skilled paddler and he too approved the DB. I have guided him through his first strip-building. Now he is just finishing an Isfjord (Björn Thomasson) that also is a West Greenland style kayak. Rob Macks has also designed a similar model called Disko

Bay and he has taken the design a step further with concave areas and very sharp chines. It would be nice to compare these three kayaks sometime.

The real launching, naming and presenting of the Disco Bay to my wife was in early July.

She was pleased and felt at home very quickly in the kayak. I don't think that she will take advantage of the extreme handling capabilities such as rolling, very hard leaning for cutting curves, etc. that this kayak offers, however, she was pleased with the easy handling, speed and stability. I have tried it out a little more to get the proper balance. This kayak is very easy to maneuver, cuts turns very easy and the secondary stability is very high. With a little care taken when building around the chines, she is easy to build. The resulting profile embraces the beauty of a traditional West Greenland kayak.

Taking on a project like a study circle in kayak building is very rewarding. Not in the amount of money, but in sharing knowledge and experiences. The members made new friends and all had something to contribute. Also, they all have said that this kayak building is fun. For me, the

main reward was to see the pleasure and satisfaction they each have experienced while launching their very own kayaks.

I'm still learning about this strip-building method and in the future expect I will go a step further and build a real traditional skin-on-frame kayak from my measures and just for myself.

For more information on the designers please visit the following websites:

Björn Thomasson <http://www.thomassondesign.com/index.php>

Hans Friedel <http://www.friedel-design.se/index.htm>

Rob Macks <http://www.laughingloon.com/kayaks.html>

Richard Kohlström civil CV is 58, and lives in Falun, Sweden with his wife, two children, and two cats. He has worked as managing and maintenance engineer in TV and Radio, as Technical Producer on a Science Center and now as technician for teacher's education in nature sciences, technology and mathematics at Dala University. E-mail: richard@kayaker.se.



Designing Ginnyak

Building a coastal explorer

By Brian Schulz



SURFING IN THE GINNYAK

I readily admit to being somewhat of a weirdo. I do all my kerf cutting with a jig saw, I regularly sleep in my workshop, I submerge a kayak virtually every time I go paddling, I've been known to drink an entire jar of apple sauce without taking a breath. Weird, but aren't we all. So it wasn't so surprising when after building a few traditional style kayaks I felt constrained and was compelled to venture into new territory, creating my very own skin on frame design.

The story begins with a Baidarka that I built with a friend and paddled once. It was large, heavy, bulbous and in no way the intimate experience with the water that had enticed me into skin kayaks. More Baidarkas were to follow, with varying degrees of performance satisfaction. They were lightly framed yet proved exceptionally durable, surviving all manner of surf and automobile related crashes. The fifth Baidarka I built on commission. It is a pleasure to paddle and unfortunately doesn't belong to me.

The Baidarka bug left me entirely

on a sunny afternoon at SSTIKS 2003. I was in a roll class taught by Shawn Baker, and as he expertly instructed me on the delicacies of a standard sweep roll, the volume of my kayak kept pushing me back under, foiling all manner of fun and exciting Greenland maneuvers. It came to me that I had no real intention of Baidarka expeditions requiring all that extra space and vowed that I must obtain a low volume kayak ASAP. 20 raffle tickets later my prayers were answered in a kayak frame I won at SSTIKS, I skinned this kayak and developed a repertoire of rolls that fall. During the winter painfully, generic looking Greenland kayaks came bubbling up from my shop, good boats, but not satisfying. I was searching for something different.

I liked the rolling performance of the Greenland kayak but disliked the way it broached while surfing and got hammered trying to get out. I liked how a properly trimmed Baidarka seemed to hold a course beam to the wind without heading up, but disliked the effort it took to crank into that same wind. The Baidarka also rose easily to the surf, but tracked too well for the quick course changes necessary in turbulent coastal explorations.

It was around this time that I was pondering a kayak that I could build easily, and something that I could teach novices to kayak in. Something more "user friendly" than the traditional kayaks. I decided that the prototype of this design would be a present for my girlfriend,

Ginny's, 30th birthday. Somehow at the time it did not seem inappropriate that I was using my significant other as a test pilot for experimental boats. She did, however, survive the maiden voyage and the design now bears her name.

The first Ginnyak wasn't perfect but it did float and is a fun kayak. At 14 feet long and seven inches deep, it sat low enough in the water to laugh at the wind. It rose to moderate chop, but still got blasted in the surf, albeit not so bad. The third and fourth Ginnyaks are twins and are fantastic fun to paddle; they demonstrate the versatility and resilience of skin on frame prototyping. The kayak rolls easily, stores enough gear for an overnight trip, penetrates the surf zone, surfs without broaching or pitch-poling, turns well and tracks without discernable effect on all points of wind. Finally, it is easier to build than a Greenland kayak, with fewer parts and less length.

A morning in the Ginnyaks starts with a friend and I carrying the loaded boats down to the surf at low tide. This is almost my favorite part as I have done the same with 65lb kayaks in the dark ages before the skin boats. My buddy easily slips into the long keyhole cockpit and adjusts the plastic foot pegs. He then tightens his skirt and is paddling like hell to get through a small summer shorebreak, I haven't mentioned where he should sit in the cockpit, but he is sitting all the way against the backrest a full 30" aft of center which trims the boat perfectly for a surf launch. He punches through successfully and I follow him out, we paddle north along the beach and then head west to round a rocky headland and back north again, this time flanked by towering sea cliffs. I am always awed by the geology of this area and this morning is no different as we navigate the sea stacks and rock gardens. I am pleased with the primary stability of Ginnyak, at 21" wide she seems rock solid. This is especially helpful so close to cliffs where reflecting waves can make a tippy boat tiring. The omnipresent seals are curious and all

manner of seabirds flap away at the last moment. Large great white sharks patrol these waters, but I have yet to see one.

After rounding a jutting rocky point, we arrive at our destination, a large black hole in the wall that is the entrance to a sea cave that leads to a honeycomb of smaller caves deep inside the headland. We check the conditions, and review emergency procedures and then paddle into the mouth. Today we are exploring for new passages on the extreme low tide. Getting used to the sloshing in the cave, the first thing I notice is that the walls are covered with a thin, blood red, sponge from about the zero tide mark down with some patches of orange sponge toward the top fringes. So striking, at first, I thought it was spray paint. Our 15' kayaks maneuver easily in the tight chambers and I take the lead in backing into unknown passages, fully cognizant of the possibility of a swim out of the cave should I lose my kayak. It happens that today we have forgotten something, headlamps. I have never needed them and so didn't think to bring them. Most of the black passages go unexplored and after a half hour or so we are back in the sunlight.

Retracing our route, I hug the shoreline of the south facing headland and pick up energy from the steepening swells there. This is a tricky business as an unexpected breaker or miscalculation could throw me upon the rocks. Conditions are fairly mellow today and I'm not apprehensive. When it is time, we head southward and I prepare for the most fun part, watching my non-surf savvy buddy wipe out coming in. I position us in front of the most abrupt sand bar I can find and when the moment is right I shout "paddle, paddle, paddle!" He picks up speed and the Ginnyak begins to plane. I am surprised to see him surf so far without broaching, until inevitably, the wave hits that sand bar and suddenly my friend is looking straight down a vertical wall of water. I don't see him tumble down the wave face, but I do hear him utter this adorable high pitched little yelp before the breaker swallows him and gives him a good washing. Apparently my oral instructions on side surfing just weren't good enough. It's my turn to follow and I get a good ride in. Across the same sand bar I too get tumbled despite my best bracing efforts. I pick up the next wave and surf it to shore.

The omnipresent seals are curious and all manner of seabirds flap away at the last moment. Large great white sharks patrol these waters...

IN THE SURF ZONE



I pop my skirt and step easily out of the large cockpit, dumping out the water. I shoulder the kayak and we march back to the house for a shower and some lunch. At less than 25lbs, the Ginnyak is hardly a burden. I have found what I am looking for, a kayak that is pure fun. Is it a better kayak? Probably not. Who am I to design a better kayak? It is, however, a kayak that I designed for the local conditions, and the local people, using wood that I collected on local beaches. What could be more traditional than that?

Design Notes:

Ginnyak is framed with 5/8 x 2.75 gunnels, 5/8 x 7/8 stringers and keel. The ribs are 1/4 x 1 1/8 white oak spaced on 8 inch centers.

She has no aft deck stringers, this allows a deck load to find its lowest center, and an under the deck load to find more room.

Her skin is 8 oz nylon coated with a 2 part catalyzed urethane, which is damn tough. The coating and foot pegs can be bought from Spirit Line Kayaks.

She carries her volume as far forward as possible, striving for a continuous convex curve in all lines from the widest point forward. This keeps her on top of the waves.

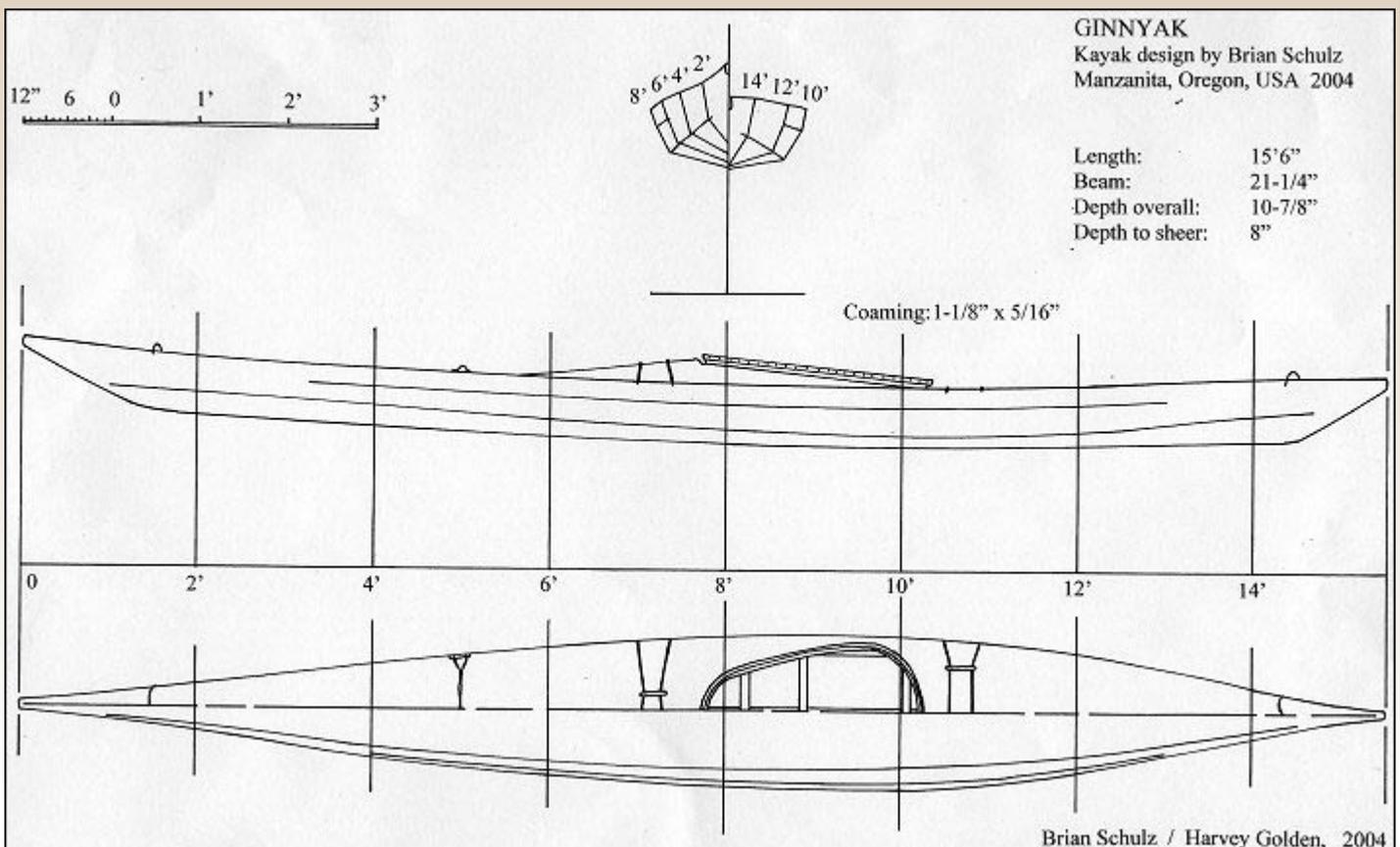
With a stretchy Snap Dragon spray skirt I am able to adjust my sitting position in the cockpit at least 6 inches and this allows me to trim the boat perfectly for conditions.

Leather deck lines are my ideal choice as they retain the stiffness of rope and the elasticity of bungee.

Many thanks to Harvey Golden, Corey Freedman, Cam Broze and countless others who have helped to make my kayak dreams reality.

For more information on Brian, visit his website at <http://capefalconkayak.com>

Brian Schulz lives and paddles in Manzanita on the Oregon Coast where he owns a small skin boat school Cape Falcon Kayak. He has recently completed a 20 foot Hawaiian surfing/sailing canoe and aspires to someday make ocean passages. His email address is capefalconkayak@yahoo.com



Making a Unaaq

A Greenland-style knob harpoon

By Shawn Baker



KNOB HARPOON AND NORSAQ (THROWING STICK)

On the off-chance that a marine mammal season opens for American sportsmen, especially those interested in traditional hunting techniques, one should not be without a knob harpoon.

H.C. Petersen's 'Skinboats of Greenland' is the best source for Greenland-style harpoon construction. Armed with 'Skinboats' and my paddle carving tools, I set out to build my own knob harpoon, or '*unaaq*'.

Dense softwoods or medium-weight hardwoods are ideal for the shaft so the knob harpoon is not affected by wind. Qaannat Kattuffiat rules also state that the harpoon and its fittings must be a minimum of 1kg to be legal for competition. A friend gave me some nice pieces of poplar to make paddles—it was too dense for paddles, but perfect for harpoon shafts. My first harpoons were made of Douglas Fir closet poles, which have straight grain, and start out about the right size.

According to Petersen, shafts 79" (2m) and longer were common. I understand the knob harpoon given to Cheri Perry this summer by Maligiaq Padilla has a wood shaft only 62" (157cm) long. I would guess that shaft lengths are guided more by personal preference than anthropometrics.

I made my own harpoon roughly using the dimensions and description in 'Skinboats'. That said, you can build a serviceable harpoon given the dimensions I state, but please don't infer them to be gospel. The 'Skinboats of Greenland' descriptions are based on Mr. Petersen's wide surveys through the middle part of the 20th century. Maligiaq's harpoon may

be more reflective of current practice, particularly around Sisimiut—and clearly excel in competitive harpoon throwing, "*unaariarpoq*."

The front end of my shaft is a wide oval roughly 2 1/4" x 1 3/4" (5.7cm x 4.5cm), the rest of the shaft is circular—about 1 3/4" a bit behind the head, tapering to 1 1/2" near the middle, to about 3/4" at the knob. A 1" dimension at the back end is probably more appropriate, but I had a 3/4" Forstner bit handy for boring out the hole in the knob.

The front (wide) end of the shaft receives a bone plate, or '*qaataa*', about 3/8" (10mm) thick. The plate is mortised to receive a square or rectangular tenon on the end of the shaft. I cheated, skipped the tenon, and used epoxy. The plate is pinned in place with a bone peg, or '*niuleq*'. This peg reminds me of the shape of one of those little wooden toy truck axle pegs. (Hint: buying a toy truck axle peg would be easier than carving these things.)

A triangle of three 1/4" (6mm) holes is drilled about an inch back from the end of the shaft, for the foreshaft to be lashed on.

The foreshaft is traditionally made of antler or bone, but I am told that a common screwdriver is not an uncommon foreshaft substitution. Plastic is an acceptable legal substitute for bone in Greenlandic competition. UHMW works well, but looks very "plastic". Delrin and Micarta make better looking substitutes. You could make a beautiful foreshaft if you have access to a lathe—carve a piece of

maple or dense plastic 6-10" long, the base 3/4"-1" (15-20mm) in diameter, the tip 1/4"-3/8" (5-8mm) in diameter where it fits in a socket in the back of the harpoon head. The foreshaft can be decorated with a wider collar an inch or so from the base, and ringed with several grooves. A hole is drilled in the base to fit over the bone peg on the end of the shaft.

THE FORESHAFT



The toggling harpoon head, or '*tuukkat*' is the business end. It not only aids in dispatching the animal, but more importantly, prevents the seal catcher, through the harpoon line and '*avataq*', from losing his prey. The head consists of a sharp edge to penetrate thick sealskin, one or more barbs (including the tail of the head) to hold fast in the animal's body, a socket to

receive the tip of the foreshaft, and line holes to attach the harpoon line. Due to the risk of cutting open a qajaq skin, I recommend against using a harpoon head in actual practice...unless the aforementioned marine mammal season is opened.

THE SHAFT KNOB (TAIL END)



The foreshaft is lashed to the front end of the harpoon shaft with a leather thong about 3 feet (0.9m) long. Pass a loop of the thong through one of the shaft holes nearest the tip, and back into the hole, leaving a loop. Run the thong through the nearest foreshaft hole, through the second closer shaft hole, up through the farther foreshaft hole, through the first loop, through the third shaft hole, once around the shaft, and tuck it under itself. This lashing is what allowed seal catchers to re-use harpoon shafts and not have to hit their driftwood stocks and build a new shaft every time after harpooning a seal.

Based on what I've read from descriptions of other harpoons, the balance point, measured from the end of the harpoon shaft, will be at 40-45% of the shaft length. The front peg (near the palm of your hand when held with a *norsaq*), for me, has landed at about the midpoint of the shaft. Note that the balance point of the finished and rigged harpoon will be in front of your hand so the harpoon is nose-heavy. Mark these points on the harpoon shaft with a pencil.

Your *norsaq* will determine the location of the rear peg. Mark another line on the harpoon about 3" shorter than your *norsaq*. Drill a 1/4" or 5/16"

(6-7mm) hole at about 45° to the length of the shaft, so the peg will angle back toward the tail. Carve a matching peg the depth of the hole plus 5/8"—the protruding tip will be shaped somewhat like a canine tooth.

Drill a hole perpendicular to the shaft at the front peg hole. Fit a similar peg to the back peg. The peg should protrude about the thickness of the *norsaq* where the peg will penetrate.

THE PEGS



If you already have an undrilled *norsaq* for practicing *norsaq* rolls, I highly recommend reinforcing the tip with a triangle or rectangle of bone, plastic, or hardwood, as the pressure of the peg while throwing the harpoon will quickly split out end grain.

THE NORSAQ



Drill a hole at about 45° and 1/2" (12mm) from the tip of the *norsaq* to match the peg. "Slot" this hole so the hole also goes perpendicularly through the *norsaq* tip. This will keep the harpoon peg from binding in the *norsaq* hole as the harpoon is thrown and rotates about the *norsaq* tip.

THE NORSAQ AND PEGS



With the *norsaq* on the harpoon, mark a point on the *norsaq* corresponding with the front peg on the shaft. A traditional *norsaq* had decorative bone reinforcement at this location—mortise one in if you like. If you mortise in reinforcement, re-mark the front peg location. Mark another spot 1/16" (1mm) closer to the narrow tip of the *norsaq*, and drill a hole completely through the *norsaq*. The slight misalignment of the hole and the peg should provide you with a "snap-tight" fit of the *norsaq* to the harpoon shaft. If the fit is too tight, you can file away at the bottom of the hole to make the harpoon lift off of the *norsaq* more easily when thrown. Hunters would often use the same *norsaq* with different thrown weapons, rather than carrying a different *norsaq* for every thrown weapon on their *qajaq*.

The knob, "isoqutaa" is a ball approximately 1 1/4" – 1 1/2" (3.2 – 3.8cm) with a hole bored through to fit over the tail of the shaft, pinned on with a bone peg.

Additional information:

'Den Grønlandske Kajak og Dens Redskaber', by P. Scavenius Jensen

'Qaannamik pinnguaatit' ("Kayak games"), by H.C. Petersen.

'Skinboats of Greenland', by H.C. Petersen. Jointly published by The National Museum of Denmark, The Greenland Provincial Museum, and The Viking Ship Museum in Roskilde, 1986

Cheri Perry's harpoon from Maligiaq Padilla:

<http://easternoutpost.homeip.net:8080/Harpoon/index.html>

Shawn Baker is an Instructor, kayak builder, and Sisimiut QU-2005 hopeful from Kalispell, Montana. E-mail: shawn@qajaqusa.org.





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