

The MASIK

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

www.qajaqusa.org



Editor's Corner

Bobby Curtis

I am both pleased and astounded by the response to the first issue of the MASIK, as over 1000 readers have downloaded the first issue. With the QAJAQ USA membership currently around 150, who are those readers? From my personal experience, here in Connecticut, interest in traditional kayaking appears to be rising. Mystic Seaport is holding an Arctic Boat Weekend in September <http://www.mysticseaport.org>. At the Meet At The Beach in June <http://www.kayakforum.com/gallery/MATB2003> there were many more traditional kayaks in respect to the previous two years. I've also seen more use of the Greenland paddle in my local kayak club, ConnYak <http://connyak.org/>.

I began using a GP a few years ago. My transition from the Euro paddle, however, wasn't as smooth as I would have liked. I almost considered getting a feathered GP, as the habit of using a feathered paddle was so ingrained within me. Eventually I broke that habit. One immediate benefit of that break was the ability for me to finally roll a kayak. After attending the Delmarva Retreat, I began to understand why the GP was a very functional paddle. People there could do wonders with their GP. I attempted to learn some of the skills that were demonstrated, but my body and mind fought against it with a vengeance. I started kayaking while in my early 50's, and eventually, I did learn to perform some sculling, and a balance brace. However, it wasn't until I was paddling a hard chine kayak with a low rear deck that rolling became more fun than drudgery for me. I recently became a certified senior citizen by celebrating my 65th birthday, and am now working on improving my off side skills. My body hasn't made peace yet with a narrow bean SOF, and it may never, but it's glad I converted to a Greenland paddle.

In this issue, there is a wide range of articles, which express the diversity of people and their interests in traditional kayaking. The column for traditional boat builders to show their crafts is also being introduced. I encourage more of you to avail yourself of the opportunity in the MASIK to share your interests related to traditional kayaking.

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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Qajaq Talk

Greg Stamer

Kayak historian and scholar John Heath passed away July 14, 2003 at the age of eighty. As members of the traditional kayaking community, we have lost one of our most influential and beloved patriarchs.

John Heath was active in many different areas of kayak research but perhaps he will best be remembered for popularizing Greenland kayaking. His influence goes to the very root of the Greenland-style paddling movement in the United States, Canada and other countries outside of Greenland. Although you might not realize it, if you use a Greenland paddle today, have learned a Greenland roll, or are a member of Qajaq USA, you largely owe that privilege to the efforts of John Heath.

"In his lifetime, John did many things. One of those things was to work hard to let the world of recreational kayakers know of the importance of the thousands of years of 'traditional' kayak technology development. Forty years ago, John and many of us were surprised that the idea was so slow to catch on. After all, a kayak design flaw could easily mean a man's death. A man's death could mean starvation to his family. Millions of hours of thought went into kayak development. Any kayaker can learn from their work. Well, the idea finally started to catch on. He was very grateful for the growing interest and all of the support." — Jessie and David Heath in a Memoriam to John Heath.

Many traditional kayaking enthusiasts were able to meet John during his numerous speaking appearances at kayaking symposia. John was always very approachable, and his sense of humor, easy manner and charm, made even the most nervous student feel comfortable in his presence.

John was published widely, including magazines such as *Sea Kayaker*. This helped to bring the practical knowledge of Greenland-style kayaking into the consciousness of contemporary sea kayakers. His writings informed and influenced a large number of kayakers. Many of us learned how to balance brace, scull, build a paddle and more, from his published descriptions. Chuck Holst's popular Greenland paddle plans are based on an article by John Heath. Harvey Golden learned how to roll from John's appendix in "Bark Canoes and Skinboats of North America". And the list seems endless.

John's videotapes, documenting Greenlandic paddling methods, have also proven very illuminating. It was John's "Greenlanders at Kodiak" video that served as my introduction, incentive, and later my tutor, for learning many of the Greenlandic rolling methods. A new generation of North American kayakers is learning Greenlandic rolling techniques from "Rolling with Maligiaq", John's latest video. And as these kayakers gain skills, some of them are acting as mentors to help teach other kayakers. Jessie Heath is ensuring

that these videotapes remain available.

John Heath also arranged for the visits of Greenlanders, including Maligiaq Padilla, who has dominated the Greenland Kayaking Championship in recent years. Maligiaq demonstrated widely in the United States and in Canada, over the course of a full year. Maligiaq's elegant demonstrations, fused with John's ability to share his passion and knowledge of arctic kayaking with the audience, was the spark that ignited a growing wave of recent popularity for Greenland-style kayaking in the United States. Harvey Golden writes,

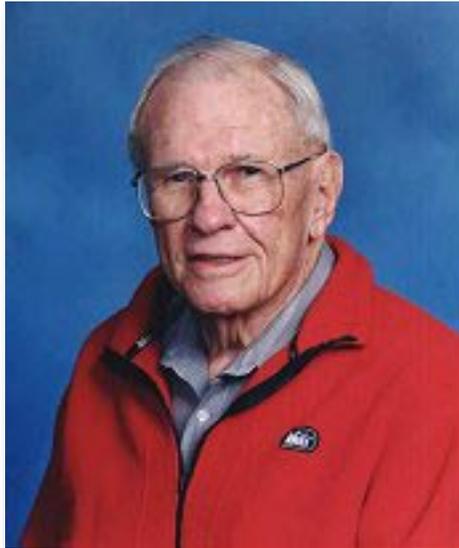
"For many of us, this was our first glimpse of Greenland kayak technique-- and it was a glimpse of its grace and expert execution. The phenomenal results of these kayak demonstrations cannot be overstated. John was somewhat a visionary in bringing the wonders of Arctic kayaking to more "Southerly" peoples. He brought it to kayakers—an audience he correctly knew would be highly appreciative, if not the most appreciative. We saw it for what it was, and here we are."

Although John is well known for his love of dogs and other animals we should not forget his humanitarian acts of kindness as well. While living in Seattle, John Heath went out of his way to make contact and meet with visiting indigenous Alaskans. On more than one occasion he

learned the disparaging news that a child of these visitors was having problems with alcohol or drugs and adrift somewhere in urban Seattle. John would seek out and find these individuals, sober them up and clean them up if necessary, and reunite them with their parents.

John Heath was Qajaq USA's honorary first member. If not for John Heath then Qajaq USA simply would not exist. As Qajaq USA moves forward with its mission we will always be mindful of not only John's academic contributions but also the respect, care and compassion for which he treated his friends from the arctic, and elsewhere.

The Heath family asks that you please do not send flowers. Due to John's great love of animals they ask that you can best honor John's memory by helping a lost dog or any animal in distress, getting your pets at the local pound to prevent them from being destroyed, supporting your local animal shelter and similar activities.



Many of us learned how to balance brace, scull, build a paddle and more, from his [John's] published descriptions.

If you wish, (tax deductible) contributions may be made to:

Wildlife Rehab & Education
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Making a Custom Sea Sock

A Second Line Of Defense

By Jim Belair



A fundamental element of kayak safety is provision of adequate hull floatation. Proper floatation ensures that during recovery procedures the kayak will float high enough in the water when swamped to allow water to be pumped from the cockpit. Also, when capsized, the kayak is prevented from turning "Cleopatra's needle" where one end of the boat is completely submerged and the other is pointing straight in the air. This is a difficult position to recover from, even with assistance.

The lack of bulkheads, which are common to most hard shell boats, means SOF boats require float bags as the primary means of avoiding a totally flooded kayak. Additional flood protection can be provided with a sea sock.

A sea sock consists of a coated nylon bag that fits into the cockpit and seals around the coaming. You sit inside the bag and it serves to limit the amount of water that enters the kayak in a capsize recovery. A sea sock used with float bags is an effective combination.

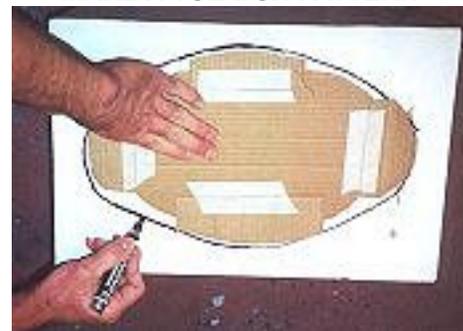
An added benefit to a sea sock is the near elimination of dirt and grit that will wear away at fabric and frame joints. The sea sock on all boats should be removed and hung to dry after use to guard against rot, mildew and odor.

Making a seat sock sized for your cockpit is fairly straightforward. A custom sea sock results in the minimum possible volume and avoids excess fabric that can hinder entry and exit.

The first step is to establish the foot box outline. Using cardboard, make a pattern of the inside of the hull at the location of the footrest deck beam. Don't

worry about measuring the curve of the hull exactly. Cut the first attempt somewhat smaller, and then tape on spacers to fill the gaps, providing a pattern for the second template.

MAKE A TOE BOX PATTERN



Tape the cardboard template into the bottom of a large garden type garbage bag. The garbage bag will become the pattern for cutting the fabric. Take up the excess plastic at the foot by taping it around the outside of the cardboard. Insert the bag into the cockpit, position the cardboard piece and secure it to the footrest and hull. Smooth the bag towards the stern, taking up the slack and tape the lower rim of the bag to the seat and sides of the cockpit. The bag may not be long enough to extend to the backrest. All we're doing at this point is defining the shape of the foot/leg portion of the sock.

Trim the top portion of the rim of the bag back a bit. This will allow access to the forward portion of the cockpit. Tape this over the coaming to keep it from flopping inside.

Reaching into the forward cockpit, take up the slack in the bag by making folded pleats in the plastic and then taping them down. Don't worry about the shape

of the pleats or how many as this is only the pattern.

MAKE FOLDED PLEATS



If the plastic bag is not long enough to fill the seat area, tape on an additional piece so there is enough to extend well over the coaming on all sides. Shape the plastic into the seat area and roughly trim above the coaming, leaving plenty of excess.

SHAPE INTO SEAT AREA



Next, run a strip of masking tape around the entire inside circumference of the coaming so the top of the tape is just even with the top of the coaming.

If making a sea sock for a boat with a very tall coaming (greater than 1 inch or so) such as a skin on frame, a better fit can be obtained by running this strip of tape with the top even with the bottom of the coaming and then adding a separate coaming strip later. Trim the excess plastic even with the top of the tape.

TAPE AROUND ENTIRE INSIDE



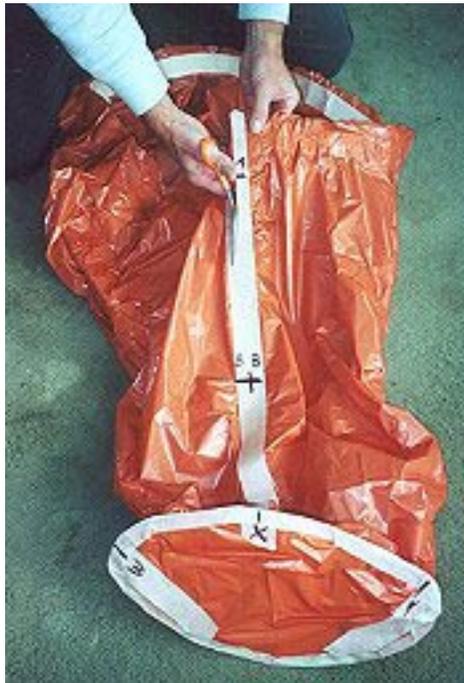
Before removing this plastic pattern from the kayak, it helps to add some additional tape to guide the transfer of the pattern to the fabric. Run a piece, centered under the foredeck from the cardboard toe piece to the front of the coaming. Also mark the center back of the coaming. Carefully remove the plastic from the boat.

PLASTIC IS REMOVED



Before cutting this three dimensional pattern into a flat one, mark some match lines along every cut line. These are around the circumference of the toe section and along the center of the foredeck tape. Cut along both these lines, leaving the bottom of the toe section attached to the main body to avoid having a seam here.

LEAVE TOE SECTION ATTACHED



Unfold the plastic in the seat area, cutting the tape as needed. Don't worry if some sections aren't perfectly flat.

CUT TAPE AS NEEDED



EVENTS CALENDAR

QAJAQ TRAINING CAMP 2003

When: August 22-24, 2003
Where: Frankfort, Michigan
Contact: Dave Braun
E-mail: dave@qajaqusa.org
Web: www.waterholic.net/qajaqtc/

MYSTIC SEAPORT AND QAJAQ USA ARCTIC BOAT WEEKEND

When: September 6-7 2003
Where: Mystic Seaport, The Museum of America and the Sea, Mystic, Connecticut
Contact: Mark Starr
E-mail: arcticboatweekend@mysticseaport.org
Web: http://www.visitmysticseaport.com/events_calendar/artic.html

DELMARVA PADDLERS RETREAT #15

When: October 3-5, 2003
Where: Lewes, Delaware (Rehobeth Bay)
Contact: Robin Snow
E-mail: Anorak@comcat.com
Web: www.studiofurniture.com/delmarva/

www.qajaqusa.org
www.qajaqusa.org/forums.shtml

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SEAT AREA UNFOLDED FLAT



Fabric for the sea sock should be medium or lightweight coated nylon. If lightweight is used it may need reinforcement at heavy wear areas (at foot rest, under heels). These can be added later. The finished sock will have the coated side against the hull for the main body, but the coated side out for the coaming piece. This will improve the grip of the sock to the coaming and that of the spray skirt to the sock.

Fold the fabric in half, coated side out. Fold the plastic pattern in half lengthwise and lay folded edge to folded edge.

FOLDED EDGE TO FOLDED EDGE



Draw around the pattern onto the fabric adding about 1½" to all dimensions. This provides some excess to prevent the fabric from being in tension if the sock shifts a bit in the cockpit. Mark all matchlines onto the fabric, then cut out all pieces.

Pin or staple the leg/foot area pieces together, aligning the match marks and with the seams on the coated side of the fabric. Test fit the sock into the cockpit with the seams facing in. Adjust the pinning if required but leave some slack in the fabric to allow slight misalignment of

the sock in the cockpit. Now fit the sock to the seat area of the cockpit by making V shaped pleats in the fabric around the hip area. Trim the fabric about 1" above the bottom of the coaming. Sew these pieces together using polyester thread, making seams just outside the pins or about ½" wide. When sewing the seat area pleats, stop well short of the point to minimize stitches in the lower part of the sock.

If the sewing machine presser foot binds on the fabric coating, try Teflon or roller foot, or use strips of tissue or toilet paper between the foot and the fabric. Using a sewing machine is recommended; as there are some long seams, 2-4 ft that would be a chore to hand sew.

NO SEAMS IN BOTTOM OF SOCK



Determine the distance from the inside of the coaming, around the coaming rim, back into the base of the rim. Double this dimension and add 1½". Also, determine the circumference of the outer edge of the coaming rim and add 2". Cut a strip of fabric to these dimensions, piecing together a couple of sections if necessary. Fold in half lengthwise, coated side out, and sew a ¾" seam down the folded edge. This will form the bungee cord sleeve. Sew another seam 1" from the opposite edge.

This coaming piece is somewhat longer than the circumference of the main sock body piece already sewn. To attach it evenly to the body, mark both pieces at the ¼, ½, and ¾ points around the circumference. Begin sewing the two pieces together; taking small tucks

in the coaming piece so the ¼ marks end up fairly close together. Continue sewing the rest of the way around, lining up remaining points, and allowing a ¾" overlap of the coaming piece ends at the rear of the cockpit. Sew the ends together, stopping short of the bungee sleeve.

TUCKS IN COAMING PIECE



Trim the seams so there is no more than ¾" of fabric outside of the stitches, then seal all seams well with SeamGrip.

One drawback to sea socks is the tendency for the fabric to drape around the paddler's legs. This can be uncomfortably warm in mild climates and can hinder entry and exit. To reduce this, cut a foam bulkhead using the cardboard template. One-inch foam is ideal but down to half inch can be used, as it only needs enough rigidity to support the fabric.

INSERTING FOAM BULKHEAD



Attach fabric & Velcro loops at several frame members to hold the sock in place when entering or exiting.

ATTACH STRAPS



Cut a small opening and insert a piece of 3/16" bungee cord. Adjust to length so the fit to the coaming is quite tight.

INSERT BUNGE



Your sea sock is ready for use. If the fabric seems too slippery and prevents a good knee brace, apply a thin layer of contact cement on both sides of the fabric in this area. You could also apply patches of a non-slip fabric such as ToughTek. (This is the material commonly used in overmitt palms)

FINISHED SEA SOCK



Be sure and practice recovery skills with the sock in place as the fabric can present some interference to slipping back into the cockpit. Also remember, the sea sock must only be used in combination with another source of floatation. As such, it is a valuable piece of kayaking gear, providing a second line of defense, as well as keeping grit and grime out of the boat.

Material List

- Approximately 1.5-2 yards of 60" wide light or medium weight coated nylon)
- 100% polyester thread (e.g., Guterman)
- 2 sq ft closed cell foam ½-1" thick

- SeamGrip
- 5 ft bungee cord 3/16"

Jim Belair resides in Sarnia, Ontario, and has been kayaking since the mid 80's. He has paddled in BC, Newfoundland, the Caribbean, Greenland, as well as his "home surf" the Great Lakes. He has also built a stitch and glue boat, an SOF, and a few paddles. Jim can be contacted at belairjim@hotmail.com



KAYAK EVENTS

Find them and post them in
The MASIK.

Send your event information to:
bobby@qajaqusa.org

Lightweight Fabric Tests

Or How Do They Stack Up

By Larry Rehd Brown

Recently, I took on the task of building Greenland style kayaks for my grandkids and myself. I have taken ideas from three books and built a little of each in the two small boat frames and will incorporate many into my own boat when these are done. The frames are coming along well and it's time to start thinking about the skinning material and process. I have built one skin boat, a couple of years ago using #12 duck canvas so this time I wanted to try something different.

Materials

After checking with other Greenland kayak builders and reading posts on the Qajaq USA bulletin board I decided to check out two fabrics that seem to be most favored by many of those builders. Those would be an 8oz. nylon fabric and a 9-10oz polyester fabric. There have been some criticisms made of the two so I decided that I would do some testing of each to see what sort of results I came up with. I had already purchased the two based on what I had heard, but still wanted to check them out for myself.

I had also heard about a fairly new product, Varathane, Crystal Clear Waterborne Diamond Wood Finish for clear-coating the fabric. It is touted as being very clear and hard, yet flexible and less toxic than oil based products.

I devised some tests to find out which fabric I would like better. I have no scientific methods to judge the specifics. I will just be judging by what I can physically see, feel, and possibly what a little gut feeling from past experience with other products and finishes tells me?

Fabric Preparation

I started with three pieces of each fabric and attached them to frames with a 12" x 12" opening. In an effort to also find the easiest, and possibly best method of application, I used three different methods to apply the fabric to the panels.

1. Wet the fabric and stretch it over the frame (rt. Panel)
2. Apply fabric dry then wetting it, (ctr. Panel)



FABRIC TEST PANELS

3. Apply the cloth dry again and leave it dry. (left Panel)

In all three panels I pulled the fabric by hand to stretch it as much as possible.

The wet fabrics stretched considerably more than when dry. In fact, when dry, both fabrics had some diagonal stretch, but very little in length or width. When wet the nylon stretched a little in both directions (length and width) and the polyester stretched quite a bit in each direction. After drying and shrinking, the wetted panels came out the tightest, then the second (dry applied, then wet), also tightened up quite a bit. The dry panels, being stretched only by hand, were still not completely tight. Folds or wrinkles in the cloth tended to be difficult to pull completely out by hand. [Note: Using a pair of canvas pliers would most likely have gotten all fabric application tighter by being able to apply more pressure.]

Finish Application

The Varathane was applied with a foam brush, in very thin coats. I brushed it on in two directions (back and forth, no crossing strokes). I let the first coat dry for 2+ hours as recommended for minimum recoat time. I did not sand between the first and second coats, as the

time frame allowed would still give me a good mechanical bond. After the first coat of Varathane all the panels tightened up significantly, and more so for the preshrunk panels. My very unscientific method for testing this was a paint stick tapped on the panels, one by one, the higher tone signifying the tighter surface. One difference that I noticed between the two fabrics was that with the finish coat applied, the nylon took on a much higher pitched sound, when tapped, than the polyester. It seemed harder, a more resonate sound and the polyester had a softer sound. Both seemed very tight at this point.

After the second coat I let the panels cure overnight and lightly sanded with 400 (wet/dry) silicone carbide paper and water. This smoothed off the fuzzy feeling and gave all panels a slight sheen. Again, the nylon seemed to have a much tighter (for lack of proper term) sound to it.

The third coat went on a little easier, using less material. The shine is starting to build up, but the fabric is still very textured. After letting this third coat set for several hours I decided to try wetting it and see if I got any leaks or softening of the skins. I applied water to the panels by sprayer and there was enough to form large beads on the panels.

WATER APPLIED TO PANELS



I left it on the panels for over three hours and then checked it again. There were no leaks that I could detect. At the end of the soaking, I wiped off the standing water and checked the panels again. While there seemed to be only a slight change in the nylon panels (deepening of the sound when tapped), I got a general loosening of all three polyester panels. They didn't sag or appear wrinkled or wavy. Instead they were just loose. There was no tension in them, and thumping them was like hitting wet newspaper.

I set them all out in the sunlight to dry, for approx. an hour, and when checked again, I found that the nylon panels had tightened back to their drum-tight state. However, the polyester panels didn't go back to their original tightness. They did dry out and tighten slightly, but they are no longer drum-like in tightness. Three more hours in the sun didn't seem to increase their tension. I waited another couple of hours, but when I didn't see any change in the polyester panels I went ahead and lightly wet sanded both sets. The nylon, with its heavier weave, is still fairly course while the polyester is getting smoother.

I applied a fourth coat late in the evening and set them up to dry over night.

At this point I can see that there is a definite difference in the way the Varathane is reacting with the nylon and polyester fabrics.

Coats five and six went on smoother and used less material. The polyester fabric is coming out smoother since it started with a tighter, lighter weave, but after the 6th coat and about 20 hours to cure, the nylon is still drum tight and the polyester is tight, but not so tight you can tap it and get it to resonate. It is still more of a flat thud. In checking for tension, I found the fabrics I put on dry and applied finish to, are still the least tight. This was the case for all finish coats. The fabric I put on dry, shrank with water and applied

finish to being next and the fabric that was applied wet, let shrink and then finished coming out the best. It is definitely the tightest.

I then sealed up the corners of the frames and filled them all with water and left it standing on the fabric.

PANELS FILLED WITH WATER



I left it for several hours to see if there were any significant changes in the panels.

As suspected, no leaks or dampness on the backs, and loosening on the polyester panels. This time, however, the poly-panel that was pre-wet and stretched during application showed very little loosening. All three nylon panels were softened slightly but still tight. (No stretching or sagging)

It was suggested to me that I should try using a heat gun on the panels to see if that will cause them to tighten up a little more. Well, I don't have a heat gun at this time; however, I do have a 1,500-watt hair dryer, left over from the days when I used to have hair. I tried that and all the panels seemed to tighten up a bit with the heat. However, when they cooled, the tightness returned to its previous state. Perhaps, as I have heard, using the heat gun on the fabric after shrinking and before the finish may have brought about more favorable results.

After three days of curing I ran the submerged test again. The panels were filled with water and left to set for several hours. I found that all the panels felt slightly looser. There was no sagging or wrinkling in the preshrunk panels, and they all tightened up again when dried.

Puncture Test

Well, I wasn't sure how to go about this. My idea was to drop test with a screwdriver and see which fabric held the best. I disliked using a screwdriver, as it would not be a fair test, since there aren't many sticking up in the waters I paddle in. I felt a jagged stick, maybe a 1" x 2" approximately 2' long would be better to use. I would drop it from several heights, or until some sort of damage is evident on

the panels in the frames. I also thought this might be best done when the panels are wet, since that is where you would most likely run into problems. The drops were started at 1' and went up to 10' high.

The tests were completed and I was both surprised and very pleased. My implements were a garden stake about 20" long weighing approximately 6 – 8 oz., and a chunk of tree branch that was just over 1 lb., with angles cut on the ends. (Beveled)

MY IMPLEMENTS



I had no problems with dropping at 1' and 2' on any fabric panels. Here are some of the results:

The stake was of little use, making only marks on either fabric up to 6' and from there to 8' it cut the finish a little (on the nylon), but did little damage. Mostly making dents that went away by rubbing the areas.

THE DROP TEST



The branch started making marks in the nylon at 4', cut the finish at 6' and broke a couple of fibers and peeled up finish at 8'. Still, it was mostly sizable dents up to 10' and little real damage. It didn't break any fibers in the polyester skin but did make some serious dents and a couple of scratches.

I then decided to go ahead with the screwdriver. I started dropping it from 6' and had little to no affect on either fabric

except to slightly peel the finish on the nylon.

Surprise #1: The 8oz. nylon didn't seem to hold the finish as well as the 10oz. polyester. With all the tests, NO finish was peeled from the polyester. The finish on the nylon was damaged in many places in the drops from over 6' and looked like a Re-finish job for sure.

Surprise #2: I gave my grandson, Michael, free rein with two screwdrivers on the same panels, to do whatever he liked.

ULTIMATE TEST



He stabbed at the nylon, with all he had, with both points and only made 2 or 3 holes. There were, however, lots of scrapes and gouges (out of approx. 30 attempts), mostly chipping the finish. Then, with the same implements and vigor, he went after the polyester panel. It popped holes in the fabric with every punch. It sounded like a cap gun war, or a couple of needles in a room full of balloons. I was completely taken by surprise at this. The polyester had shown almost no visible damage at all when the objects were dropped on it, with the exception of the higher altitude objects breaking a couple of fibers and leaving scratches. The finish held up fantastically. But the semi-pointed tool popped it like balloons.

After four more days of curing, the 4 remaining panels appear the same, the nylon resonating when tapped and the polyester being tight, but not drum tight. The finish around all the damaged areas on the nylon fabric is peeling or chipping

off. The finish on the polyester panels is not peeling or chipping but seems very much a part of the fabric.

NYLON VS POLYESTER



(The left panel is nylon and the right is Polyester)

Deductions from My Tests:

Wetting and attaching the fabric definitely brought about the best results for tightening the skin. Attaching the fabric dry and wetting to shrink also would give you a good tight skin. Without exception (in my test panels) all of the fabrics lost some of their original tightness when wetted after the Varathane was applied. The surfaces got harder with additional coats, but none returned to 100% of their original tightness. When subjected to a submersion test (standing water on the 3 coat, finished side) for several hours, all the fabrics seemed to loosen a bit. With 6 coats and more curing time, they seemed less affected by the water. At 1 sq.' each, I think the panels were too small to tell just how much the loosening would affect the skin of a kayak, but again, with the pre-wet/shrunk skin there didn't seem to be too much of a problem.

The finished nylon fabric showed more damage from the natural objects with a lot of scratches and dents in the panels and some broken fibers. The polyester fabric appeared to withstand more abuse from these dropped objects and would be a better choice of fabric for abrasion and minor pokes. However, in a more severe gouging situation the damage was more catastrophic with the polyester.

Were these tests conclusive? Maybe not, in that I could have waited for the 6 coats of finish to be applied and totally cured before attempting any wetting tests

I have read posts on the Qajaq USA and Guillemot Kayak's sites that have given differing results with these fabrics (the reason for these tests) and recently there have been posts of experiments on

application of finishes that may work to form a better bond between fabric and finish (as in the case of the nylon and Varathane). More tests? Why not! However, at this point I do believe there is enough information to go ahead and use either fabric for my boats. Both fabrics have been and continue to be used by kayakers with great success. (Just with issues)

Conclusion

I was not disappointed with either fabric. They both performed well when extra care was taken to get them tight from the start. I had already purchased both fabrics previous to these tests and will use them as planned. The nylon will go on the kid's boats and will probably come in very handy with its better damage control. The polyester fabric will go on my boat, and another that I will be building for a friend. If I were to choose one fabric I would go with the Nylon. It sustained minor damage a bit easier than the polyester but the finish seemed to take the bulk of that. Most of the damage was quite repairable. The nylon seemed to hold up better under the more serious attack with pointed objects.

Some time will be spent on trying to form a better bond between the nylon fabric and the waterborne finish or possibly going to another form of finish. I will attempt to stretch the fabric as much as possible, lengthwise, before pulling it up over the gunnels to be sewn.

I did the best I could to keep these tests simple and informative enough that I would trust the materials on boats for my grandkids and myself. If you are building for the first time, as I, and have found conflicting information from different sources, I would suggest doing some tests, for yourself, to be more confident in the materials and methods you use.

Larry Rehd Brown, a Postal employee and the neighborhood "Mr. Fixit" from Fresno, California, has spent over 20 years working in and around cabinet and furniture shops. He first paddled a kayak about three years ago, caught the kayak-building bug, built two boats, has three under construction, and three more planned. He has five grandkids, some of which have expressed an interest in starting paddling when those boats are finished.

SSTIKS 2003: Thoughts of Some of those Who Attended

Compiled By Shawn Baker



SSTIKS 2003, the second annual South Sound Traditional Inuit Kayak Symposium came off without a hitch. Perhaps the best way to describe this exceptional event is with the thoughts of some of those who attended.

“The environment at SSTIKS is fun and non judgmental, a tone that is set by example of those who put on the symposium.” – **Ken Jenkins**

“I liked the fact that so much time was spent on the water. While there was plenty of hanging out on land and looking at boats, the real action was on the water.” – **Tim Mattson**

“I smiled for days. This combined with a great campsite, a salmon dinner, and the company of fellow paddle spirits supplied an experience I am eager to repeat next year.” – **Brian Schulz**

With over 65 attendees, guest instructors, wildly fanatic learners all, SSTIKS was a memorable sharing and learning opportunity. A fantastic chance to learn and teach and share and laugh and be humbled and succeed all at once!

“I learned the dreaded cross arm roll. My wife learned the balance brace.” – **Rob Gibbert**

“What I liked most about SSTIKS... would undeniably be the folks who dedicated their time & passion for kayaking in the traditional style” – **Sasha VanRoy**

“I was very impressed with the way everyone watched out for each other during the whole event.... Just to be able to spend time with like minded people,

swap stories, teach and learn from each other, it was all priceless to me.” – **Mark Young**

We were fortunate to have wonderful warm water, bright sunny skies, and calm, clear water to play in.

“Twanoh State Park is an ideal location especially with warm water temperature hovering near that of bath water (73°F).” – **Sasha VanRoy**

Perhaps following a guide from our Greenlandic mentors, the children were as involved and as energetic to play with skinny sticks and boats as the “bigger” kayakers.

“What a family friendly environment not only conducive to the obsessed kayaker.” – **Sasha VanRoy**

“We both felt so accepted and supported as rank beginners, and that the kids were well tutored.” – **Mo Morrow**

“Mo’s son Lee...absolutely fell in love with kayaking this weekend, and can’t wait to continue work on his own kayak.” – **Mark Young**

DISCUSSING ROLL TECHNIQUES



SSTIKS is the first official Qajaq USA event of 2003, and should be a great

start to the season for traditional events. To say that it’s a great educational and cultural opportunity barely begins to describe it. Forward stroke and paddle carving clinics, roll demonstrations and workshops, barbecued gourmet salmon and oyster bake, ropes gymnastics, a race, rescue clinic, videos and slide shows all kept participants extremely busy for the entire weekend.

GREG STAMER SCOUTING SEALS



“The symposium was so jam packed with information, skill-building opportunities, great food (especially Bob’s salmon and oysters) and wonderful people, [Mark and I] spent much of the time soaking up separately and reporting to each other just to take as much in as we could.” – **Mo Morrow**

ROBERT MORRIS DISPLAYS HIS ALASKAN YELLOW CEDAR FRAME WITH PURPLEHEART PEGGING



“The people are at the top of my list. Meeting both those that I have known through their net presence, as well as the experts. It is pretty amazing to have what amounts to a semi-private party and be able to interact with people like Harvey (Golden), Greg (Stamer), Chris (Cunningham), and Robert (Morris). SSTIKS was my first “in-person”

Continued on page 13.

Self-Built Traditional Style Boats

A Regular MASIK Feature



JAY CONTEMPLATING LIFE IN HIS SOF

JAY BABINA

W. Greenland style 18' SOF built in 2001. 19 3/4" wide Deck height (skin to skin) 10" front cockpit, 6 1/4 rear cockpit.

I built it using Chris Cunningham's Sea Kayaker article and Bob Boucher's video as guides for methods and also used measurements from other kayaks. Ribs are white oak and pine was used for all other parts except the cockpit coaming, which is white oak. I had to scarf a bit on my gunwale stock to get my desired length. You can see made my bow angle a little more angled for a sexy appearance. I used Dyson Polyester for the skin and coated it with epoxy, which was colored

dark brown trying to imitate the sealskin boats. Contrary to perception, the epoxy skin is flexible and rugged. I over built the kayak a bit and it weighs about 45 lbs. My ribs were 1/4 x 1". The current group of books weren't out at the time and I now know I can get away with a lot less wood. One day I was out in 4 footers and I could feel the skin flexing up against my calves and I was happy I built it strong.

The kayak is fast and travels beautifully through the water. Even though I was cautious about having too much rocker, I had to add a keel strip to stiffen up the tracking because I was being shoved all over the place on a following

sea. I epoxied on a strip 2' x 3/4" that tapered from nothing to 3/4". It now handles great.

It balances braces itself and it's an easy roller although I can't quite hand roll it and can with some other boats. I should have made my coaming a bit lower and I could have tweaked the volume down a bit if rolling was my main intention. I can reenter it without sinking it, which I'm happy about. It was an easy building project for me and I did it during a winter. I used Bob Boucher's pegging method rather than mortises for the deck beams. My stitching is what Bob Boucher's shows and it's not neat and not in a straight line which adds to the authentic look of the kayak. I stitched it with artificial sinew. My deck lines are old poly rope that I house painted brown and they look and feel like rawhide. I enjoy paddling it and occasionally showing it off. It looks like a real seal skin kayak.

Jay Babina lives in Branford, CT, can be reached at jbabina@snet.net, and has a website at www.outer-island.com



RICHARD AND HIS QAJAQ

RICHARD A. TOELLNER

My qajaq is a Greenland design, built by following Robert Morris's and Christopher Cunningham's book and article.

Qajaq specifications:

- Length: 17' 2 1/2"
- Width: 21"
- Height: 6 1/2" from keelson to deck beam #7: 6 1/2"
- Weight: 43lbs

Construction:

Clear pine was used for the gunwales, chines, and keel. The ribs and the masik are oak, and the deckbeam is maple.

The curved deck beams and stems are cedar.

The skin is cotton duck skin painted with Koolseal and Exterior Latex paint.

It took me approximately 120 hours to construct, "the two week vacation helped".

Handling of this Qajaq will take me a little time to get accustomed to; I have found it very easy to roll, which I was unable to perform for over five years.

Once I purchase a Tuiliq, the training and practice will continue.

Richard Toellner lives in Plattsburgh, NY. He can be reached at richard.toellner@verizon.net



MARK'S GREENLAND KAYAK

MARK WOODHEAD

The boat is 18'6" long, 23" wide at the masik, 7-1/2" depth-to-sheer, 11-1/2" depth overall (at masik). It's the core West Greenland kayak from Robert Morris' book, "Building Skin on Frame Boats", and uses Alaskan Yellow Cedar for the gunwales, stems and ribs, Port Orford Cedar for the flat deck beams and

stringers, Poplar for the coaming, Douglas Fir for the masik and knee rest, and Western Red Cedar for the floorboards. The lashings are all waxed poly line. The skin is 12-ounce ballistic nylon. I chose to use the alternate keelson from Morris' book, with the concavity at the stern to give it a natural skeg shape for better tracking (you can see it in the side view).

I used 4mm climbing rope with maple toggles for the deck lines. Total build time was about 80 or 90 hours.

The boat paddles very well. The stern skeg keeps it tracking very straight, yet it still turns well when leaned. The concavity at the stern really seems to help the boat catch swells and braking waves, and the front and rear skeg shapes of the hull help keep it going straight while surfing. It is a little tippy initially, but when leaned over hard, it really pushes back. The most noticeable difference from my S&G Arctic Tern is the way the SOF sticks to the water over waves. It's a little slower, but the worse the conditions get, the more stable it feels.

Mark Woodhead lives in Santa Cruz, CA. He has a PDF file available of the entire build log, which has many more details. To request a copy, email Mark at endoboy@pacbell.net

JENNIFER TORRES

What I learned About Paint

Research, research and patience! Not necessarily in that order. I started my Greenland SOF a few months ago and really thought by now I would have the project finished. I imagined myself lazily drifting along in the Gulf of Mexico in my new boat and getting a chance to finally perfect some new rolls and maneuvers. But alas, I hit a snag in my perfectly timed paradise and am now weeks behind schedule.

It began with inadequate information and lack of patience, but I have learned a great deal, some of which I will share with you here. I decided after perusing the many web forums that I would finish my boat with GACO Western's H-2200 Hypalon. A highly toxic, durable, rubber-like coating most known for its use on white water rafts. In southern Mississippi we have lots of oyster beds so I wanted something that would have a fair chance of survival. I ordered not nearly enough and as a result was able to cover my 12 oz nylon with only one coat, I needed five to seven. Hypalon, due to its highly flammable nature can only be ground shipped and I knew that it would be over a week to get more. I couldn't wait that long. I decided to call GACO and get some info. I specifically asked if they knew of any oil based paints that would go over the



Hypalon as a *topcoat*. The response was very vague, except the technician said that Hypalon was a solvent base so in theory any oil base paint of good quality should work. I consulted local paint store "experts" and got more or less that same information. I bought and tested several different paints and even tried some left over Brightsides polyurethane from my S&G boats. I settled on an industrial Urethane Alkyd Enamel from Benjamin Moore. A day later I was slathering on the enamel. Several days went by and my deck was still a sticky mess. I knew I had made a disastrous mistake. I was having nightmares of cutting off the nylon and starting over again. Maybe I should take that awful xylene thinner and try and strip off the enamel?

I have learned that when it comes to my boats I am passionate and impetuous, and need to get relaxed to think clearly. I had some nice red wine, took a break and decided to email GACO's top scientist. It was surprising easy to find

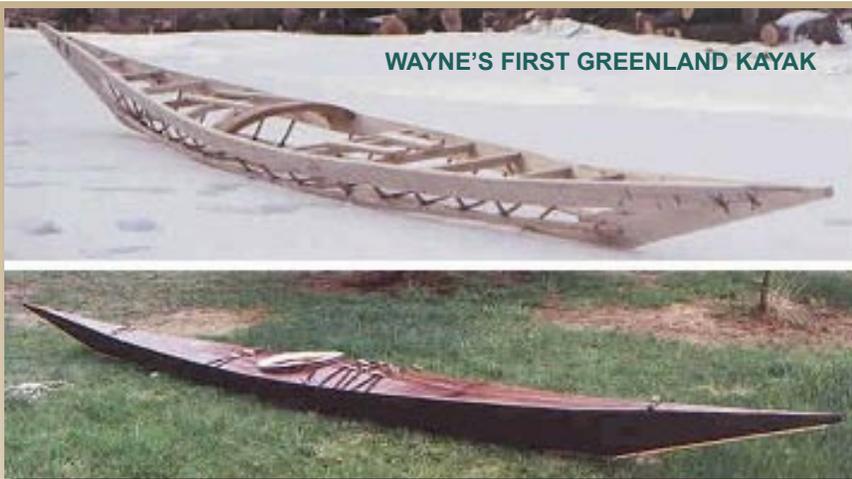
him on the web and I blasted off an email asking if he knew of any reason, or of a chemical reaction between the Hypalon and the enamel that would retard or impede hardening. I got back a simple and clear explanation of the nature of paint. (Please understand I am no expert in this and am giving you a very simplified explanation) He explained that all paints (clear or opaque) are made up of essentially two items, solids and a vehicle. The solids being pigments, thickeners, rubbers, plastics and all the other stuff that gives each coating its unique attributes. The vehicle is simply the stuff that allows the "solids" to flow onto your work piece; these are either solvents or water, better known as oil base or water base. After a coating is applied the "vehicle" will evaporate, leaving the solids behind. In coatings that are 100% cured there is very little evidence of the original vehicle. What most people face, as did I, was the incomplete evaporation of the vehicle. What I had done wrong was to apply the enamel before enough of the solvent (in this case xylene) was gone from the *Hypalon* (humidity also impedes evaporation). My paint was sticky because the solvent from the *Hypalon* paint was now being forced to permeate up through multiple layers before it could evaporate. Even though paints may feel dry, it may take weeks or more for a vehicle to completely evaporate leaving

a coating cured. Once the solvent had permeated the layers they would all begin to cure.

The solution to my problem was to be patient and wait. Although GACO could not tell me how long it would take, it would, eventually cure. So I waited and sure enough after about 5 days, sections of the deck began to lose their stickiness. It's been over a week, the deck is now dry enough that I could turn it over and begin painting the hull. By the time I get done with the hull the deck should be cured enough for me to continue. Gee, that's about the same time it would have taken me to just order more Hypalon in the first place.

What I learned about the nature of paint helped me to get through a difficult phase of the project and kept me from doing something stupid like cutting off a perfectly good skin. I also learned that it's important to read the directions, but when faced with a unique item like Hypalon, that has no directions, don't hesitate to call or email and get the right information. And most import be patient and relax, you'll live a lot longer.

Jennifer Torres lives in Hattiesburg, Mississippi and teaches sculpture at the University of Southern MS. Her completed SOF will appear in the next issue of the MASIK. Jennifer can be reached at jtorres@netdoor.com



WAYNE'S FIRST GREENLAND KAYAK

WAYNE STEFFENS

Design: From a Harvey Golden survey of a mid-20th century West Greenland kayak of which the original is in the Nuuk Kayak Club's collection. I made only minor intentional changes from the original, but unintentional ones seem to crop up anyway.

I chose this design for my first Greenland kayak because it has a little extra volume for a traditional design. I wanted something that would be good for playing in waves on Lake Superior, and I thought the extra volume might come in handy as I adjust to it. I haven't had the opportunity to test it in windy or rough conditions yet, but I've been very pleased with its flatwater performance.

It is quick and responsive and seems to roll well. I thought it would feel very unstable, but I was amazed at how comfortable I felt in it right away. Nevertheless, I have plenty of room to "grow into it" skillwise. I am looking forward to learning new rolls and techniques and perfecting old ones in

this kayak, and learning how this design performs in challenging conditions.

Construction details:

- Length approx 16' 9"
- Width: 19 7/16 "
- Depth to sheer: 7.5
- Depth overall: 10 3/16 "
- Weight: about 30 lbs.

Materials:

- Northern white spruce gunnels, chines, keelson, and deck stringers.
- Pine and spruce deck beams.
- Ash ribs and coaming
- Douglas-fir masik.
- The skin is 8 oz. nylon; coated with Varathane water based exterior polyurethane with added pigments.
- The deck lines are leather and moose hide, the fittings are deer antler and moose bone.

Wayne lives in Northern Minnesota and can be reached at keewatin@warppmail.net



SSTIKS 2003

cont. from page 10.

Greenland event. I, as well as my wife and daughter, found both the subject and the people interesting and the sense of community to be refreshing".

"So much to see, learn, and do, it's hard to digest it all." – **Mark Young**

BOB KELIM ADJUSTS HIS TULIUSAQ



The other thing that I found was an awareness of a subject and a culture that I knew (and still know) very little about. I have enough exposure now to make me appreciate the skills and culture of the Inuit peoples and a desire to learn more." – **Marcel Rodriguez**

PAUL LALONDE DEMONSTRATING THE LOW ROPES



Thanks to all who attended, and a gigantic kudos to Mike and Tammy Hanks for a well-organized, priceless event.

Shawn Baker is an ACA certified Open Water Coastal Kayak Instructor, and kayak builder from Kalispell, Montana.



An Eastern Arctic Kayak Or My First Attempt To Build A SOF

By Duane "Arko" Bronaugh

From my postings on the Greenland Kayaking Forum; http://www.qajaqusa.org/cgi-bin/GreenlandTechniqueForum_config.pl, some of you are already familiar with my first attempt at building a skin on frame kayak; as a matter of fact several of you helped me a great deal in building it. For that first attempt I chose to build an Eastern Arctic design mainly because of the instructions I found on www.arctickayaks.com, Dr. David Zimmerly's site. They were very clear and concise, and they were free.

Note: Inuktitut words within this article are *italicized*.

Citing Eugene Arima's "Notes on the Kayak and its Equipment At *Ivuyivik*", "These kayaks were used mainly for hunting sea mammals though there appears to have been two classes in this type. One being used for hunting and the other for transport. The hunting, or sukaut class was generally narrower and faster and the transport, or usiyut class which were wider and slower but more steady. The division for these two classes was around 26" in beam". Eastern Canadian kayaks varied greatly in form from region to region. They also varied in size from 14' to 27,' both of these examples coming from Baffinland.

Again from E. Arima's *Ivuyivik* paper, "Around Povungnituk the kayaks were relatively short with high stem and stern horns and flat bottoms that turn gradually into the sides. They were sometimes built lightly for ease of portaging. Hudson Strait and Atlantic Labrador kayaks were the longest and heaviest. They had little upward turn towards the ends and sometimes turned down at the stern. Their bottoms were sometimes made with a slight V shape and the turn of the bilge more gradual".

According to Arima there is a vast array of design features to be found in the kayaks of the Eastern Arctic. Some have flat bottoms with slightly flared sides; others have V- bottoms with more flair and side stringers producing a multi-chine cross section. Some kayaks had bow skegs, a tracking feature, resulting from the forefoot bulging downward and when combined with rocker accentuated



weathercocking into the wind. The cross section of the multi chine tends to be broadly rounded in the sukaut class and flat bottomed in the usiyut class. The narrower more rounded cross section of the sukaut class being safer in big seas as it was less likely to broach.

He also says, "This rounded cross section may be an influence of Central Canadian kayaks. Some Polar Inuit are more closely associated with Greenland but their kayaks are East Canadian variants introduced in the 19th Century". I am sure that a stellar example of a Polar Inuit kayak was seen by many at this year's SSTIKS built by none other than Harvey Golden. I think the wide variety of kayaks of the Canadian Arctic could be explored and replicated for a long time and this is what I am hoping to do.

I began construction of Dr. Zimmerly's interpretation on Thanksgiving Day 2002 and launched it on June 1, 2003. There was a lot of downtime in there but I am estimating actual construction time at 140 hours including time spent studying the plans without which I would not have been building anything.

It should be noted before I begin my description of the building process that all of the Inuit terms used for the various parts of the kayak also come from Arima's *Ivuyivik* paper. I made extensive use of this paper because Dr. Zimmerly notes that this is a *Ivuyivik* (Northern Quebec) style kayak.

I began with three 16' 1"x 6" poplar boards for my *aponmak* (gunwales). Perhaps not the best choice but it was way cheaper than my alternatives. One was cut

in half to be scarfed to the remaining two to give me two 22' boards. After scarfing and shaping the *aponmak* I cut all of the mortises for the *ayak* (deck beams). Then turning them on edge I drilled the mortises for the *tikpik* (ribs). The *aponmak* were then temporarily lashed loosely at each end and two temporary spreaders were put in at the *masik* and *itivik* positions. I now had the overall shape of the deck established.

Next, came the fabrication of the *ayak*. These are of clear white pine and measure 3/4" x 1 1/2". Each with a different compound angle depending on its location in the deck, necessitating extensive use of a sliding bevel gauge, something I had never used before.

DECK FABRICATION



Following the *ayak* were the *masirosigik* (lighter, arched deck beams) of which there are two in front of the *masik* and ease the transition from the *masik* to the *ayak*. These were made from a 2"x6" purchased from Lowes.

The *masik* (forward cockpit deck beam), and *itivik* (aft cockpit deck beam), are of red oak and are 3/4"x 2 1/2" and they were installed next, fore and aft of the *paa* (cockpit) position. The *masik* was bent using a series of kerfs to aid in bending. After checking for symmetry the *aponmak* were pinned together with

1/4" hardwood dowels dipped in poly glue. Lastly, the *tunikjuk* (deck stringer), both front and rear were fitted. These, also of clear white pine, measure 3/4" x 1 3/4". Not the size specified due to a spell of inattentiveness. I would have replaced them but I only discovered my mistake after lashing them, and all other deck pieces in place, which is done with a simple (after a bit of practice) yet effective lashing technique. Besides they looked all right to me.

I did use a different lashing technique on the hull of the kayak as I had a very difficult time getting the tension I felt I should have only to learn later a much more effective way of getting better tension using the correct lashing technique. I also added two shorter pairs of *tunikjuk*, one pair on the front deck and another pair on the rear deck to help support any weight that may be placed there. Again, not specified, but something I thought to be a worthwhile addition. Everything was then lashed together with artificial sinew. We have a deck!

The *tikpik* (ribs) are of kiln dried white ash and are 1/2"x7/8". They are fitted to the *aponmak* by 1/2" round tenons cut with a Veritas tenon cutter for an electric drill and it works great. It took me about 15 minutes to cut 70 1/2" round tenons 1" long. After cutting each *tikpik* to size and numbering each one, three kerfs were cut at the turn of the bilge and they were placed into a large dry bag filled with water and left to soak for three days. When they were removed from their soak they were placed, six at a time into my low-tech steamer. A tea kettle and a length of 4" electrical conduit and a kitchen stove. My wife didn't even mind the smell, though the ash doesn't smell as bad as the oak. I steamed them for, if I remember correctly, 15 or 20 minutes and removed three at a time for bending and installation. Working from *sivuoyak* (stem) to *ahoyak* (stern). I didn't have any of them break but a few of them started to splinter a bit and those were bound with sinew. The first three "ribs" on the *ushuyak* (bow projection) are not *tikpik* at all but pairs of struts as is the last pair. The first three pair are lashed to the *kuyak* (keel) and the last is not but is held in place by the *kuyak* which was installed next. All *tikpik* and struts are pinned with hardwood dowels through the *aponmak*.

RIBS AND KEEL



The *kuyak* measures 3/4"x1 1/2" and is of clear white pine. It is scarfed and pinned together. The *kuyak* is pinned and glued into the bottom of the *aponmak* in a notch about 5" back from the tip of the *ushuyak* (bow projection). Clamped along the *tikpik* on the centerline to the *ahoyak* where the *aponmak* were planed flat, and temporarily lashed there. After adjusting to the correct curvature as best as I could tell, several shims were added to fill in a few small gaps between the *kuyak* and the *tikpik*. I also added some blocks between these two parts at *tikpik* stations 5,6, and 7 making a small bow skeg. The *ahoyak* end of the *kuyak* was then glued and pinned in place and shaped. Next came the *sianik* (bilge stringers), again of clear white pine and measuring 3/4"x 2". They are gouged out to fit around the *tikpik* at the turn of the bilge. I did this by using a router and a 1/2" V bit and making a cut out 1/4" deep and 1/2" in from one side along the entire length of the *sianik*. Using a block plane I planed from the opposite side of the cut out on the same face to the bottom of the cutout and that gave me the cross section I needed. Starting in the middle of the hull and working my way towards the *ahoyak* and the *sivuoyak* I clamped them to the *tikpik*. Working them as a pair so I would not distort the hull. At *tikpik* #4 the *sianik* are lashed to the *tikpik* and faired into the *kuyak* with the use of fairing blocks. I really had trouble at the *sivuoyak* and did not think I would be able to bend them in to meet at the *kuyak*. Harvey Golden gave me a great tip and that was to cut small kerfs where they needed to bend and it worked beautifully, of course.

The last members of the hull are the *kiauqjutak* (side stringers). Again clear white pine and measuring 1/2"x1 1/4". These are installed an equidistant between the bottom edge of the *aponmak* and the *sianik*. Spanning from *tikpik* #4 to *tikpik* #21. Extending just beyond each of these and lashed into place.

SIDE STRINGERS



The *paliqviq* (cockpit coaming) is made of two separate pieces of red oak 2 1/2"x3/4". One being a U-shaped piece and the other is the flat back, pinned and glued together. Mine measures 28"x17".

I coated my frame with three coats of boiled linseed oil thinned with turpentine and let it air dry for four months when I was finally able to order my *amiq* (skin cover).

COMPLETED FRAME



For my *amiq* I used Dysons 16oz polyester. I used a combination of skinning methods. I employed Bill Lowes hammock arrangement for longitudinal tension, and Chris Cunningham's stapling method for the traverse tension. For tension on the deck I just cut the *amiq* so that it lay across the deck under no tension with the edges about 1 1/2" apart and used an overhand stitch to pull it tight. If it started to bunch up or meet without imparting ample tension to the deck, I would clamp it off with hemostats and trim out ahead of the already stitched part of the *kidlu* (seam). I didn't have to sew any darts anywhere and was happy about that. The 16oz material seems pretty tough although I have nothing to compare it to, as this is my first skin boat experience. I pulled on it really hard and it did not tear.

It even supported the weight of the frame while hanging in the hammock. For all of the sewing I used braided polyester fishing line. The *amiq* was sealed with Minwax Helmsman spar varnish tinted with oil-based enamel. The color of the paint is called "Seal". There are four coats on the hull and three on the deck.

After the *amiq* was sewn on I installed the *paliqviq* (cockpit coaming) and used the same braided Dacron for the *paaliktuk*, (the lashings used to sew the *amiq* to the *paliqviq*). The *paliqviq* was then lashed to the *itivik* in each corner and to the *masik* in the center.

COAMING



For the *takak* (deck lines) I simply used nylon parachute cord. Black. Put on when wet and stretched during installation so hopefully they will maintain tension when they are wet again. I used the traditional method where by the *takak* is one continuous length. I also added *qidluyivik*, which are short thongs connecting the *takak*, for slipping the paddle under. They also vary tension on the *takak* since they are about 1 1/2" narrower than the holes through which the *takak* emerge from the *aponmak*. The only "custom" feature that I put on the boat, besides the bow skeg, isn't really a custom feature (meaning not of my own division) but one borrowed from the North Baffin Land Kayak and that is a series of small braided loops along the top of each *aponmak* for attaching a load line which I find indispensable for my intended use of this kayak since most of the interior is full of float bags thanks to Shawn Baker and Chris Cunningham. I used two strands of triple strand sinew for these loops. I drilled two very small holes at an angle from the top edge of the *aponmak*, about one third of the way in from the outside edge, to the outside of the *aponmak*, exiting 1" below the top of the *aponmak*, and then enlarging that hole on the outside of the *aponmak* to allow the knots to fit into flush and to anchor the loops. Fortunately those small holes were big enough to allow the passage of the only needle I had left. Installation of these loops could only be done after the *amiq* was put on and this required

holes to be melted in the *amiq* in many places. They are very small holes. The ones on top, where the actual loop passes through, are only as big as the needle, which are filled with sinew and the ones on the outside of the *aponmak*, which aren't actually holes but small slits, are about 3/16" long and all were easily sealed with Helmsmans and the paint. Just to be thorough, I went over each hole with some GOOP and she has holes no more. Besides that, they are all but invisible. The result is a series of load line loops that are strong enough to hang the kayak from, literally. I later learned from Dr. Zimmerly that this was not correct and that the loops were originally sewn to the *amiq*. My method worked fine and, I believe, it resulted in a much stronger system.

The *pautik* (paddle) is 11'1" long and weighs 56oz. and is made from a nice clear, fairly straight grained 2"x4" and has built in *kodlosiut* (drip rings). It needs some refinement but propels the kayak quite nicely nonetheless. Four coats of boiled linseed oil provide the finish.

Launch day. Since I always paddle alone this is how I launched it, alone, my new creation and I, the sole participants. I enjoy the solitude. This is what I seek, and get, from kayaking. I have paddled with others and find it distracting. I feel bound somehow, the antithesis of my goal to be unbound, free. I am not saying that paddling with a group holds no appeal for me. I just seem to more fully appreciate the experience by my self. I definitely know my limitations.

LAUNCH DAY



June 1, 2003. Winds 15 to 20 mph. Temperature 56 degrees in Summersville W.V. on Summersville Lake. Chop 16 to 18 inches and boat wake to three feet. Now, this may not excite most of you but being an inlander, I find these conditions to be as wild as it gets around here. It is the largest lake I have locally and it is an absolute gem to play in. The water is crystal clear with great mountain scenery and gorgeous sunsets. The fishing is great and the camping peaceful.

DECLINES AND PADDLE



The *Ivuyivik* kayak tracks great if you pay close attention to your forward stroke. Let off the gas a little on one side and you are headed somewhere else. It is heavy at #108, so it is slow getting up to speed but once there it is easy to maintain. I think the cruising speed is great and when you dig in with all 45" of the blade you can really get this kayak moving. It is also very, very maneuverable. I can basically turn 180 degrees in one spot with one or two strong stern sweep strokes. The combination of the flat bottom, rocker and my bow skeg seem to produce the desired effect since it does weathervane into the wind, and I had great conditions for testing that. The bow skeg appears to act as a fulcrum. It is far more maneuverable than my Queen Charlotte 19, which is Pygmy's most agile boat, or at least was at the time (no knock on Pygmy kayakers, I love them). It handles waves in great fashion, no matter what direction they are coming from; it's up and over. It is a little difficult to maintain directional stability in quartering waves from the stern but it is easily managed. I find the initial stability to be not as stiff as I had imagined and secondary stability far exceeds my expectations. I can lean out far enough to bury the *aponmak* under water (that is a lot of freeboard to put under the surface) and that is not using a J-lean but rather a bell-buoy lean (?) where you lean with the kayak, and still it wants to right itself. It feels very reassuring.

I have experience with a limited number of kayakers, so am I full of it or do I really have a kayak that is fast,

maneuverable, has decent tracking qualities, and has great stability? Let's explore the possibilities.

Harvey Golden told me that I chose a difficult first boat to build. I say ignorance is bliss and I have been rewarded with a wonderful kayak. Dr. Zimmerly said that his quickly became one of his favorites among his varied fleet of kayaks, and in time I am sure I will feel the same

A principal resource for material in this article was the paper by Eugene Arima 1963 "Notes On The Kayak And Its Equipment At Ivuyivik, P.Q." National Museums of Canada Bulletin 194, Contributions to Anthropology, 1961-62 (Pt.II).

"Arko", lives in Charleston, W.V. with his wife and two daughters. He is an industrial and medical ventilation technician and has been kayaking since 1997. His interest in native kayaks was ignited by the Qajaq USA forum, and the kayak-building bulletin board <http://www.kayakforum.com/KayakBuilding/index.shtml>



Trial and Error

The Evolution of a Folding Kayak

By Tom Yost



Folding kayaks, by and large, have long been looked upon as something of an oddity by the kayak building public.

They are generally viewed as low performance boats when compared to high performance traditional SOF and hard-shell kayaks. In addition, they have proven a difficult challenge for homebuilders due to the complexity of building and assembly. For the average homebuilder to be successful, simplicity of design, construction, and assembly are critical

About 10 years ago I decided to take on this double challenge. I wanted a homebuilt folding kayak with overall design and performance comparable to hard-shell and traditional SOF kayaks. At the same time, it was to be easy to construct and quick to assemble. No small task, as I would soon find out.

Initially, my folders were based on the all-aluminum frame, non-folder designs of George Dyson. However, my first attempts centered around all wood frame construction, with sewn and coated one-piece nylon skins. This configuration proved problematic, as the stringer to cross section connections required the fabrication of mechanical connectors, which were difficult to make, and slow to assemble.

WOOD FRAME CONSTRUCTION



This is not a problem for commercial manufacturers, but is a major obstacle for one-off homebuilders. The sewn nylon skins, though fine for a non-folding SOF, had a tendency to continue shrinking after removal for storage, rendering them useless.

Next, I tried aluminum stringers / plywood cross-sections with sewn and coated polyester skins. This hybrid frame, though easier to make, proved no easier to assemble, as mechanical connectors were still required.

Sewn one-piece polyester proved an acceptable folding skin, but was still more suited to non-folder use due to the repeated stress of folding and assembly. In addition, the use of multi-chines on these early folders was proving cumbersome.

ALUMINUM STRINGERS



The first time I saw a commercially produced Feathercraft folder, I knew that the stringer to cross section problem was solved. By snapping the tubing onto the High Density Polyethylene (HDPE) cross-sections, Feathercraft had eliminated the need for mechanical connectors. For the homebuilder, it meant faster construction and assembly times, due to much less complexity. Also, since aluminum and HDPE require no shaping, sanding or finishing, additional construction time was saved.

My first kayak built this way was the Aleut inspired FAP-16 single-chine folder. After it's first assembly, I knew that a major hurdle had been overcome.

ONE-PIECE POLYESTER SKIN



After building a couple more folders this way, I decided to tackle the one remaining major obstacle. That being: to find a skin that was easy to make, and capable of standing up to repeated folding, storage, and assembly.

That skin material, again from the commercial sector, was PVC. With it's polyester core and two sided vinyl coating, it was possible to construct an inexpensive, durable, and above all easy to make skin. I opted for a two-piece skin due to it's simplicity compared to the more complex sewn and glued multi-paneled skins.

The two-piece skins require no sewing, with the hull and deck being glued together at the gunwale. Though not as clean looking as the paneled hulls, the ease of construction was, at least for me, a fair tradeoff.

TWO-PIECE PVC SKIN



Recently, I've started building Greenland influenced designs for easier construction and skinning then the earlier Aleut types. This, plus additional simplification of the assembly process, has allowed the construction of folding kayaks with build times well under 75 hours, and assembly times under 30 minutes. "Symetrik" is the latest of this design type.

The design specifications and performance of these kayaks compares favorably with commercial fiberglass, wood, and traditional SOF homebuilts. In addition, most hard chine kayak designs, whether wood or SOF, can be reproduced using this non-traditional method in either folder or non-folder configurations.

These kayaks can be transported in a golf travel case or softbag and checked in as luggage for airline travel. At 30 - 35 lbs, they are among the lightest full size kayaks available.

TRAVEL CASE



After 10 years and eight folding kayaks, I'm still learning, and the kayaks are still evolving.

Tom Yost, a Retired (Accountant - DOD) and former kayak marathon racer, (18th place Nationals,) hails from Elizabeth, Colorado. He has built 20+ kayaks since 1973 including S&G, SOF, Woodstrip, and folding SOF. Email - tom_yost@msn.com

Some of his work can be seen at the following websites:

<http://www.rtpnet.org/robroy/baidarka/slideshow/>

<http://home.arcor.de/hmaroske/node-i53.html>

<http://yostwerks.com/symetrikpics.jpg>

Notes from the Regions

IF YOU HAVE SOMETHING TO SHARE FROM YOUR REGION, E-MAIL YOUR REGIONAL CONTACT:

THE NORTHEAST

Filed By: *Keith Attenborough*
QAJAQ USA Vice President

If you're in the Northeast, feel free to send in more tidbits for the next issue. keith@qajaqusa.org

FROM THE NORTHWEST

Filed By: *Mike Hanks*
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THE GREAT LAKES AREA

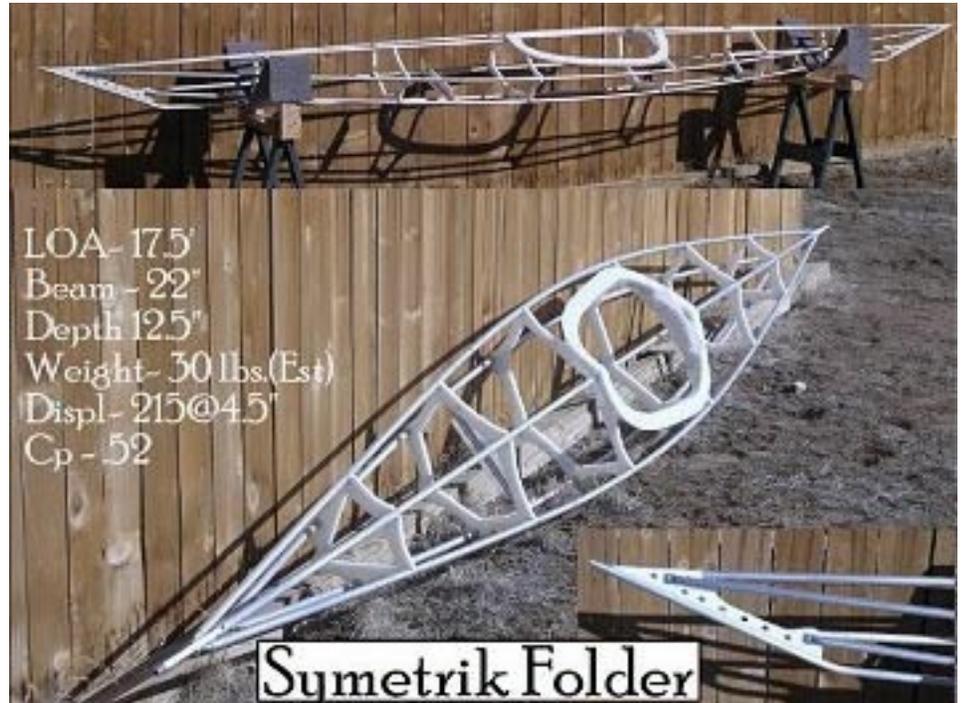
Filed By: *David Braun*
QAJAQ USA Membership

If you're in the Great Lakes Area, feel free to send in more tidbits for the next issue. dave@qajaqusa.org

TRIAL AND ERROR

cont. from page 18.

GREENLAND INFLUENCED DESIGN WITH HDPD CROSS-SECTIONS



SHARE THOSE HAPPENINGS. Publish Your Experiences in the MASIK.

Any traditional kayaking related material is encouraged (e.g. baidarkas, etc).

On average articles would be one – two pages in length.

Longer articles would be acceptable.

Best if composed with a word processor

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Accompany Your Text With Photos

The optimal format: JPEG, 300DPI color, 4-6 inches wide.

Material submitted doesn't have to be flawless.

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Changes deemed necessary will be made only upon approval from author.

A draft will be available to the author for review prior to publication.

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