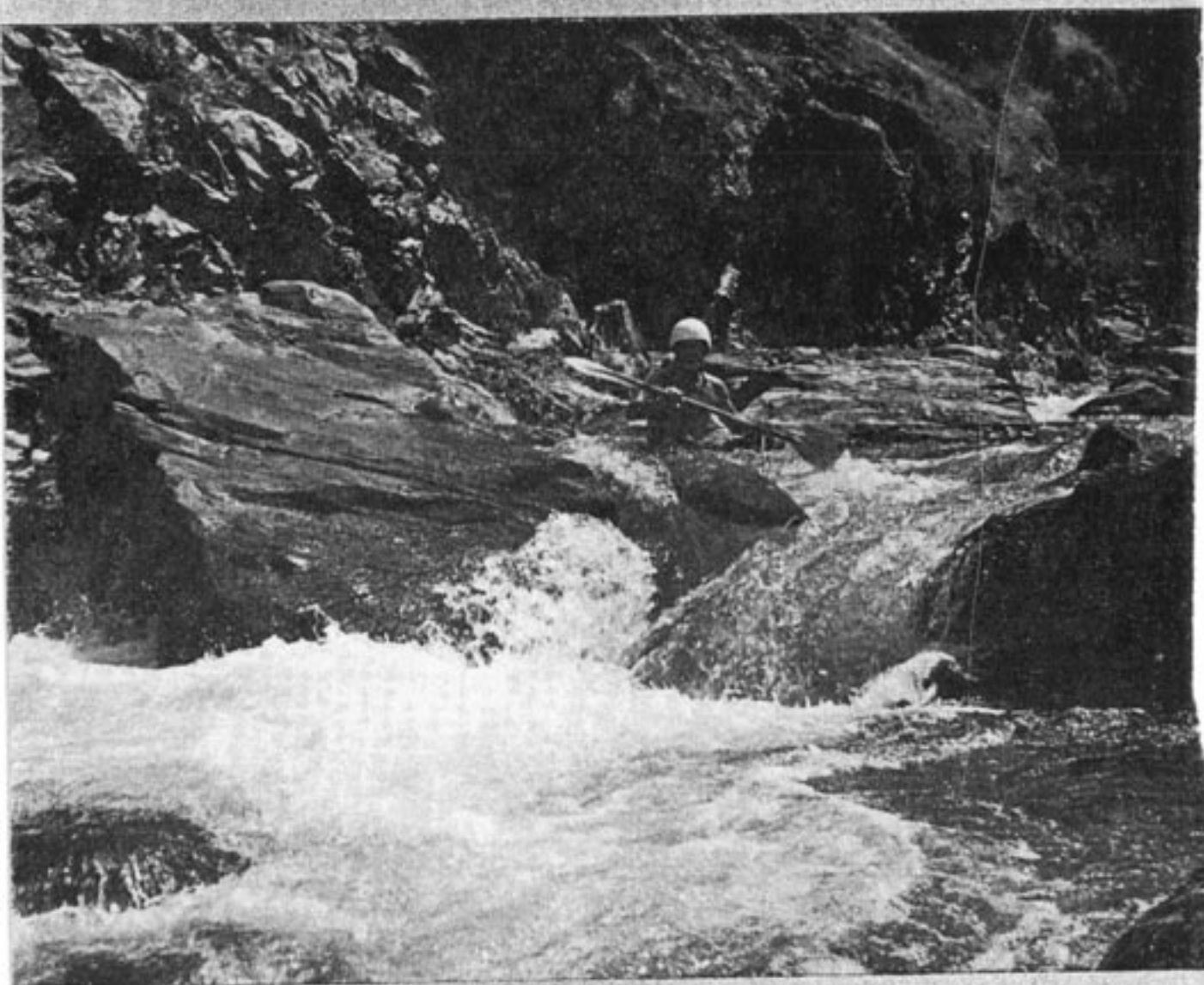


American
WHITEWATER

the Journal of the American Whitewater Affiliation



WINTER, 1971

Vol. XVI, No. 4

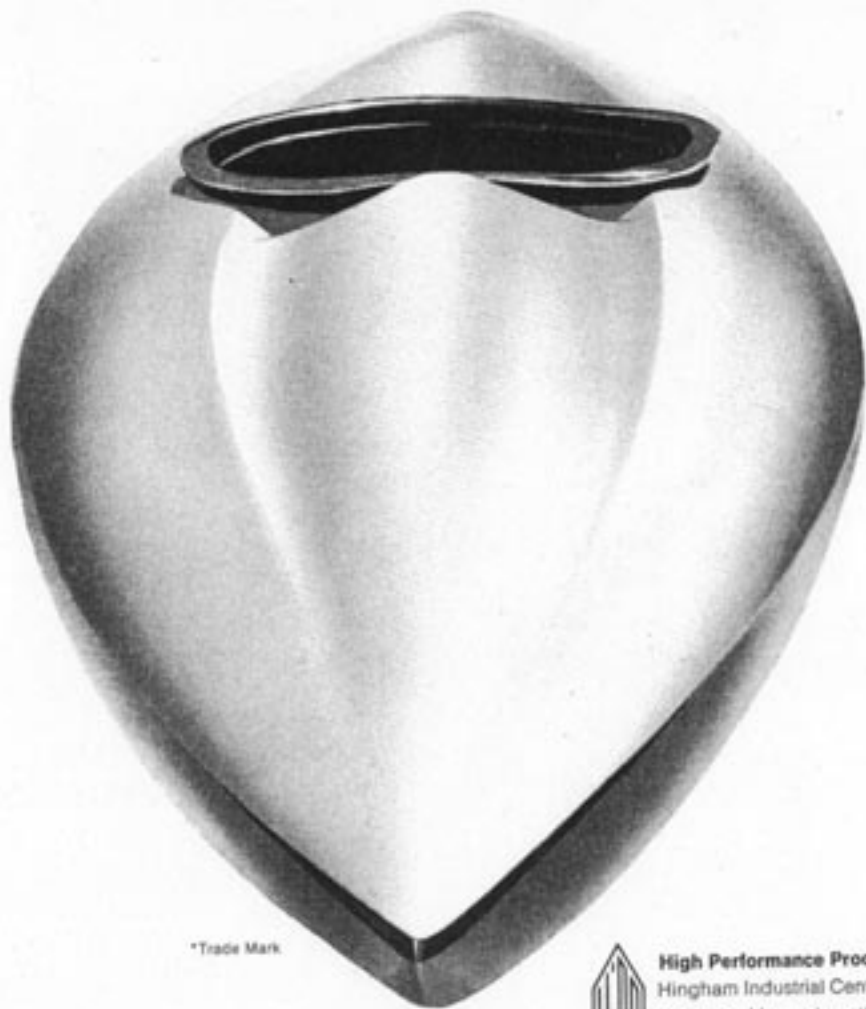
put yourself in a winner



Put yourself in a Prijon* or Lettmann* designed boat, manufactured in the U.S. under exclusive license to High Performance Products Inc. At the World Championships in Merano we supplied 53 boats to the U.S. team . . . the same designs which are available to you now.

Slalom, downriver, touring, surfing and kits — 22 canoe and kayak models available for every enthusiast, from Olympic contender to recreational paddler.

Distributors of Kober, Schafer and Prijon paddles, Rohmer helmets, plus life jackets and paddling suits, flotation bags and spray skirts. Dealer inquiries invited.



*Trade Mark



High Performance Products, Inc.
Hingham Industrial Center, Bldg. B56-B
Hingham, Massachusetts 02043
Telephone (617) 749-5499



Chester Summit at Bull Falls on the Shenandoah R. The chute blasted for longboat freight haulers is between the rock ledge behind the canoe and the rock wall. Photo by Louis J. Matacia.

EARLY HAPPENINGS AT BULL FALLS

By Grant Conway, 6032 Broad St., Washington, D. C. 20016

American Whitewater has published a couple of articles on the lower Shenandoah River written by Wally Foster of Frederick, Md. Wally described the delights of Bull Falls, through the winding Staircase and his 'discovery' of the hidden waterfall tumbling over the bluff on the east side of the river at the head of the Staircase. Wishing to know more about the history of this seemingly wild and scenic area through which boaters pass, Wally and Al Webb stopped one evening at our house near where the Shenandoah and Potomac merge. Being familiar with local waters

and the neighboring people during a period of declining population along the river, having had an opportunity to talk to many of the old timers before they passed from the scene, and supplementing this information from dusty courthouse records and old newspapers, I was able to overwhelm them with a fusion of folklore and recorded history which they did not dream existed. Much of the lumber hidden away in our house was salvaged from Shenandoah River gondolas whose crews braved the rapids to bring wheat, flour, whiskey and other products from the fertile

Shenandoah Valley to market. This has added zest to rediscovering the river and its earlier inhabitants.

James Rumsey, inventor of the jet-propelled steamboat in the late 18th century, was Superintendent of the Potomac Co. in 1785 and 1786. His letters recorded the problems of blasting chutes or bypasses around Shenandoah Falls, the name given in those days for the series of rapids which encompass the present-day Staircase and Bull Falls. On Sept. 26, 1786, Rumsey wrote from Keys Ferry (at the upriver end of Millville where canoeists embark for the downriver run; a portion of Braddock's army crossed here in 1755) as follows: "One of our best men had the misfortune of having both (sic) his hands most horribly maimed by a Charge of powder—. The hammer and auger was blew quite out of sight, I hope the President (George Washington) and directors will take his case into consideration and allow the poor fellow something—."

Eventually boat chutes were blasted around the west side of Bull Falls and the Staircase, remnants of which can still be traced, and downriver boats called gondolas were carrying produce to tidewater markets by 1800. "River Commodore" Jacob Sipe boated 5,623 barrels of flour from Port Republic above Harrisonburg in 1841, and 41 barges set forth from Riverton near Front Royal in one week in the spring of 1861. After the War Between the States, river traffic resumed until the destructive floods of the late 1880s. Recorded shipments from Riverton in May 1880 included burned lime, flour, sole leather and wool, as well as sheep, corn, millreed, dried fruit, sumac, brandy and whiskey. The standard long boat was 76 feet long and nine feet wide. Lumber making up the boat sold for approximately \$25 at Harpers Ferry.

With a good head of water to cover the scattered boulders which have not been cleared from the bypass channel in more than 75 years, this left bank chute is still the most dependable at Bull Falls.

How did Bull Falls get its name? No one knows at this late date. "It's always

been called Bull Falls," is the usual reply of the old timers. The last conductor, Capt. C. Edgar Dudrow and his father before him, spanning close to 100 years of service related to the Winchester Branch of the B & O RR, always remembered it as Bull Falls. The **Martinsburg** (W. Va.) **Statesman** for Nov. 14, 1889, reported a train striking a cow at Bull Falls. The engine and first six cars derailed and slid 20 feet into the Shenandoah.

Capt. Dudrow remembered the leisurely pace of the Winchester and Potomac (later Winchester Branch of B & O) in earlier days. In its 114 years of passenger service, ending in 1949, its cruising speed was three to five miles an hour. "We slowed down for local people to exchange news with the passengers, and in season we stopped at Bull Falls to allow the passengers and crew to pick berries. During one period Murphy was the only competent engineer on the line, and he liked to stop for a drink at the bars along the way. When Murphy was too drunk the train didn't run."



RELAX AND FLOAT DOWNSTREAM

Enjoy a clean, quiet vacation. Shoot exciting rapids on large, safe rafts. A new experience in living for all ages. Slalom canoes and kayaks welcome.

Write for brochure.

**AMERICAN GUIDES
ASSOCIATION**

Box B, Woodland, Ca. 95695

Several of the old cliff dwellers in Harpers Ferry suggested talking to Louise Rau Lawson. Her mother, Minnie Rau, retired after 32 years as post-mistress of Bolivar, adjacent to Harpers Ferry, and Louise succeeded her until her retirement, after which she moved to Arizona. On a visit to old friends during May of 1971, it was my good fortune to spend a couple of evenings swapping stories with Louise. The following is an interpretation of her narration of her happy and adventurous days at Bull Falls.

"When I was growing up in the period of World War I and early Prohibition days (18th Amendment went into effect in 1919), there was always a summer canoe camp at Bull Falls. People from Washington and Baltimore came up on the train and they were coming and going all summer long when they had vacations. There was a good-sized local delegation and we got along fine. We had a few cars for shuttling people and canoes. The canoes were launched above Millville and drivers shuttled the open touring cars to the end of the road at the beginning of the Staircase and walked up the railroad tracks to the camp. We had an arrangement with Capt. Dudrow and the train crew to drop us off a 100-pound block of ice daily. There was a good limestone spring nearby and someone hauled in a community ice chest. We also had an arrangement with a local farmer for a supply of milk, butter and eggs, and sometimes there would be fresh vegetables. Someone donated a hand-crank ice cream freezer and we made our own ice cream, usually with fresh berries starting early in June with wild strawberries. We had fish fries almost every day.

"I had so much fun one year, I stayed all summer. We would position our canoes and shoot through the spout pointed toward the right bank, draw quickly to the left to miss Elephant Rock at the foot of the pool and glide swiftly through the only open channel at the usual summer level of water.

"Spencer Butts, who had been on the boxing team at the Naval Academy, was our sergeant-at-arms. The only

time he had to exercise his authority was when his friend Tod Brady was drunk and slipped off his clothes and dived into the pool. Spencer had to slug him in the jaw and tow him to shore.

"Liquor was our big problem. Anyone who didn't live through the great national experiment, Prohibition, can't imagine the difficulties of acquiring a regular, dependable supply of booze. I'll never forget the night the camp ran dry. Jack Shirley and I both lived in the area and we were sober which qualified us to volunteer to replenish our supply of moonshine.

"The closest supplier was Johnnie Nick who sometimes operated a retail outlet downstream on the wooded flat at the waterfall [rediscovered by Wally Foster for an article in AWA, Winter 1962/63], on the east bank of the Shenandoah at the head of the Staircase. It was over a mile across rough country to the nearest dirt road (an insurance against revenooers), and Johnnie's customers poled themselves across the river in flat-bottomed punts after swinging a lantern from a silo on the top of the hill on the west bank to bring Johnnie Nick from his cabin on Loudoun Mt. to the rendezvous by the river, sometimes called Drunkards Dell in those days. Johnnie Nick and his mountain friends wore formless black felt hats with a peak, like the mountain boys in the old Esquire magazine cartoons of the 1930s, and sat around and chewed and spit tobacco. Jack and I didn't trust his product ever since he went on a medicinal herbs kick and flavored a batch with the essence of skunk cabbage. 'Cures asthma and opens you up everywhere,' Johnnie bragged. Anyway, in addition to moonshining Johnnie moonlighted as the midnight midwife of Loudoun Mt., and was probably at this moment swinging his coal oil lantern on his way to a delivery.

"Spencer Weaver had a reputation for good quality moonshine, and it wasn't cheap. His tri-state gang had producing moonshiners in Maryland, West Virginia and Virginia to insure a steady supply. Spence introduced cra-

dle-to-the-grave benefits for his employees long before it was adopted on a national scale. He was a wholesaler and didn't sell to everyone, but he knew the value of good local public relations, and he had on occasion patronized the Rau family general store and would recognize me. I knew his nerve center and underground storage for shipment to Baltimore on the B & O was on the Maryland side of where the two rivers join. The old building facing the Chesapeake & Ohio Canal had been operated by Spencer's father under the name of the Salty Dog Saloon before Prohibition.

"Jack Shirley had his car parked at the top of the Staircase on the west side of the river, where flood waters had swept away the remains of Shenandoah City in 1889, and we cruised down the river in our canvas-covered canoe in the moonlight, missing an occasional rock. Driving down the Shenandoah River road to Harpers Ferry we crossed the highway bridge, which would be swept away in the 1936 flood, and turned upriver on the road used by John Brown and his raiders in 1859. The Salty Dog was heavily shuttered with no lights showing. Dark front porches ran the length of the building and we knocked on the nearest door. A peephole for an earlier blind pig operation (before Spence went big time) opened and exposed us to inner eyes and recognition. The door was unbolted and we were received by Spencer's aunt, and the heavy door was quickly closed and bolted again. Before negotiations could be opened there was a heavy pounding on the door behind us. A master switch turned the inner building to darkness. The unwelcome intruder finally became discouraged and footsteps leaving the porch could be heard. After a suspense-packed period of quiet in the dark, lights flashed on to reveal Spencer Weaver pointing a double-barreled shotgun at the door. He had entered the room in the darkness, and Jack and I were standing between Spence and the door.

"After we were liberally supplied with booze and settlement was made, I expressed concern that the unknown



This photo, taken during the operating days of the C & O Canal, shows the Salty Dog Saloon (the rambling two-story structure on the far right). Photo courtesy of C & O Canal National Historical Park.

stranger would hijack our liquor before we could make a getaway. Spence reassured us by slipping out a back door in the dark with his shotgun and taking a position behind a rock fallen from the cliff overhead. We dashed for our car, which started immediately, and roared across the bridge into slumbering Harpers Ferry and on to Millville without being followed. Quickly, we unloaded the canoe from the auto, filled it with illegal moonshine and quietly paddled to camp where a big reception awaited us at Bull Falls."

Louise resolved never again to volunteer to supply the camp at Bull Falls with booze.

Klepper Folding Boats

Enjoy Western rivers,
lakes and waterways.
Many models to choose from!
Write for free catalog.

THE SKI HUT

1615 University Ave.
Berkeley, California 94703

KLEPPER FOLDING BOATS
OLD TOWN CANOES
KAYAKS **SAIL BOATS**

Write for catalogs
CLYDE R. SEELINGER, AW
Shown by Appointment, (816) 842-0273
2111 Erie, North K. C., Mo. 64116

THE BIG DEBATE

By John P. Wilson

While the big effort at the 1971 Whitewater Championships at Merano was to beat the Germans, the big debate among the Americans was — to copy, or not to copy.

For those who don't know, a fiberglass boat can be produced in two ways: either by taking another boat and making a female mold over it, or by building a male plug of a more or less original design and then making a mold from it. The former is called copying, while the latter is called designing.

The former has also been called stealing, and there is the rub.

Original and successful new boat designs often involve 500 to 1,000 hours of work. Many evolve only after years of experimentation. The professional boat designer must amortize this in the purchase price of his boat. He can protect his design with a copyright. However, the designer, not the government, must enforce the copyright through the courts. This might take two or three years and in the meantime the boat in question has probably become obsolete.

England and some of the other European countries are strict about not allowing copied boats to compete in major races. There the officials of the sport enforce the copyright rules instead of the courts. In other countries, such as West Germany, paddlers themselves enforce no copying by vigilante techniques, such as breaking a copied boat in the dark of the night. Not a very happy situation.

The reason that officials and racers get involved in such disputes is that a designer-manufacturer has a great deal to offer competitors. New designs are the most important. In order to win, a competitor must have the best design for the course. This means a constant upgrading of new designs to satisfy the individual course. Not only must designs be improved but also construction techniques must be continually upgraded to produce the lightest functional boat. A gifted designer should be

working full time at improving his product. It is not something a racer can do while training and maintaining a job or going to school. It is a full-time job for professionals.

Tony Prijon of Rosenheim, West Germany, is a case in point. Prijon has designed some of the most successful whitewater competition boats in the world. Prijon has a fine eye for beauty which he incorporates in his boats. Yet Prijon is having difficulty in making a go of his enterprise. His boats are too popular and everyone has a mold. The copiers can produce boats much cheaper because they don't have to amortize the design expenses. Prijon is trying to tighten up but still has a long way to go if his enterprise is to be a success.

Prijon has leased his designs for manufacture in the U. S. to Mithril Boats (High Performance Products). Mithril is fighting the battle in the U. S. in order to keep boats from being copied. The battle is one for the survival of the business.

Let's go back a minute: In the 1960's whitewater boat manufacturing in the U. S. was done on a commercial basis by a few designer-manufacturers, usually working alone or hiring one or two assistants. Their production was limited and second-hand boats were scarce. Under these conditions a certain amount of copying was justified in order to provide inexpensive boats in sufficient numbers. Today Old Town Canoe and Mithril are both manufacturing designed boats on a high production basis and frequently change their models. The supply of boats is plentiful and the frequent model changes have created many second-hand boats, which can be purchased at reasonable prices. Today the justification for copying is questionable since inexpensive boats are available, both as second-hand boats and in kits.

Another aspect came out at Merano which is very important for the growth of the sport: Mithril supplied both Lett-



FLOTHERCHOC LIFE VEST

First choice for comfort and
wearability • Lightweight
Allows complete freedom of
movement



*See your nearest dealer.
If there is none in your area,
please contact us directly.*



Exclusive importer for the U.S.

ONE DESIGN SPECIALTIES, INC.

123 Tollgate Trail

Longwood, Florida 32750

(305) 831-0909

mann and Prijon boats at no cost to members of the United States team. In all they supplied 53 boats to the 34-member team. Not only that, they repaired and altered all the boats at the request of the boaters. This meant that the competitors did not have to stay up late at night repairing their boats and that they did not have to baby their boats when the going was rough in a race. The United States team had some of the best boats in the race. They were as light as the European boats, but more flexible due to the superior state of the art of the American plastics industry.

The support that the manufacturer can give any sport which requires sophisticated equipment is immeasurable. With our deep engrained feeling favoring amateur athletics, support from the equipment manufacturers is one of the few legitimate ways we can assist our competitors. When we go to Europe and compete, we are always competing against semi-professional teams, usually funded by a large subsidy from their federal governments.

The ACA Slalom committee has met this fall and tentatively has agreed that the support of the manufacturers is necessary if whitewater is to grow. The details in working out the enforcement of no copying have not been arrived at. The rules must be written to protect not only the manufacturers but also the small designer who has an original design and wants to get into manufacturing, and the racer who has a new design but wants to keep it for his own exclusive use. Enforcement will be a complex problem in a sport which is already one of the more complex sports. Without such enforcement it is questionable whether U. S. manufacturers will continue to develop new boats for advanced competition.

Anyone for track?

(John P. Wilson was the public relations official for the 1971 U. S. Whitewater Team. To avoid misunderstanding, it should be pointed out that John — not to be confused with Tom Wilson of High Performance Products or "Mitbril" — is neither connected with nor spokesman for that company. — Ed.)

THE PHYSICS OF THE KAYAKER'S ESKIMO ROLL

By Jim Sindelar

(As was announced in the Fall, 1971 issue of AMERICAN WHITEWATER, this paper was selected the winner of OLD TOWN CANOE CO.'s contest for the best description of the physics of the kayaker's Eskimo roll.)

Background

The Eskimo Roll is the act whereby a kayaker rights his craft with his paddle after a capsize, and it has long been recognized as perhaps the most spectacular feat of kayaking.

There are many kinds of roll—some with double-bladed paddle, some with single-bladed paddle, and some with no paddle at all, using only the hands or a small board or other such implement. The stroke which provides the rolling torque also varies widely, but is usually (either singly or in combination) a straight downward push starting at the surface of the water, or some variant of sweep or scull stroke, whereby the paddle blade is moved through the water with the leading edge at a slight planing angle so that the blade continually tends to climb toward the surface as the roll progresses. This sweep stroke may be either toward the bow or stern, and in some cases is a combination of both. The ultimate is perhaps the roll done with only one clenched fist, an Eskimo feat which has been duplicated by some of our modern recreational kayakers. The other arm is not used, and for demonstrations or contests, Eskimos often held a rock in the fist to prove that the open hand had not been used for added thrust while under water.

It was while watching, learning, and reading about new rolls and old, that curiosity developed regarding the physical principals common to all the rolls. The elements to be discussed were gradually recognized as a result of experimentation in attempting the various rolls in different boats under different conditions, and by watching others attempt them in modern fiberglass kayaks and decked whitewater canoes.

Basic Principle

When a kayaker is upside down in his boat, the center of gravity of the system lies below the longitudinal or roll axis of the boat, about which the system must rotate when it is righted. The paddler supplies the torque necessary to right the boat in the direction opposite that of the intended roll by forcing his body and paddle* against the water in an arc around the roll axis of the boat; it is the **reaction** to this torque, transmitted to the boat via the paddler's body, which rights the boat. The paddle stroke itself may take the form of either the direct arc described above, or a sweeping, propeller-like sculling stroke whose motion may nearly parallel the roll axis. In the latter, the angle or pitch of the paddle provides a component of force which still supplies the required torque.

From this point, the roll will be described in terms of two phases: during phase one, the boat is rotated from the inverted position to the 90 degree, or half-way point; during phase two, the boat is rotated from the 90 degree position on its side to the fully upright position.

Effect of Position of Paddler's Body Relative to Boat

The torque generated by the paddler is a maximum if the paddler reaches his paddle as far as possible from the roll axis when he executes the stroke, and this is done during the first phase of the roll while the body of the paddler is below the surface of the water. During this phase, the torque available is a maximum, but the only torque required is that needed to tip the boat on its side; the paddler's body, being about neutral in buoyancy, requires almost no energy to bring it to the water surface. However this extended position also maximizes the torque **requirement** as the paddler's body starts to rise above

*or body and hand(s) in the case of the "hands only" roll

the surface of the water, since it maximizes the distance of the system center of gravity from the roll axis. (This doesn't matter while the paddler's body is submerged and almost weightless.)

Therefore the position of the paddler relative to the boat should change at the start of the second phase of the roll. As the paddler's body starts to rise above the surface of the water, the paddler moves his body closer to the roll axis of the boat and also down into the surface of the water. This need not be a sharp transition—rather the paddler executes the paddle stroke in such a way that he starts phase one with his body stretched as far from the roll axis as possible, and at some point in the process, starts bending at the waist so that near the end of phase two, he is much closer to the deck of the boat. He may actually be touching it with his head, back, or chest in some cases. A possible advantage of the rolls incorporating forward or reverse sweeping strokes is that the paddler is naturally led to move his body closer to the boat as the stroke progresses.

This motion does three things that contribute to the success of the roll. First, bringing the system center of gravity as close as possible to the roll axis when the paddler's body is above the water minimizes the torque requirement. Second, since the system at this point has some rotational energy, bringing the moment of inertia closer to the roll axis has the effect of adding angular velocity to the motion, much the same as the ice skater who starts a spin with arms and leg outspread, and then suddenly spins much faster as the arms and leg are brought in tight to the body. Note that this effect contributes far more to a fast roll than a slow one. Third, the boater can get some extra torque during this critical phase of the roll by leaving his body in the water as long as possible, since the slight positive buoyancy of the paddler's body, and the added surface of the head and torso as they change position relative to the boat add considerably to the effect of the paddle; they actually act like an extension of it. The combination of these three effects due to the change of position of boater's body relative to



the boat is called "hip snap" by kayakers, and is the difference between a strong, positive roll, and the marginal one which would result if the torque were applied alone without any such motion.

Effect of Terminal Paddle Position

Also of importance is the motion of the paddle through the water under the influence of the applied force, since the effectiveness of the roll as it nears completion is greatly reduced if the paddle is very far below the surface. Because the body is left in the water as long as possible, it is still down near the surface of the water toward the end of phase two after the boat itself is nearly righted, and must then be brought up over the boat. The center of gravity of the head and torso is therefore still beyond the gunwale of the boat, and since the stability of the boat in its slightly tipped position is insufficient to bring it up, the paddler must supply a final vertical component of force with his paddle to brace against. If the paddle blade is much below the surface, the angle of the blade will be too large and it will not supply enough vertical component to allow him to lift his body over the boat. The result is familiar to anyone who has tried—the roll is three-quarters complete, the paddle has sunk so far that the vertical component is insufficient, the boater's body pulls him back over, and he follows his paddle toward the bottom again. Assuming the angle is correct and the blade planes as it should, the rolls incorporating sweeping strokes may have an advantage here, in that the paddle should take longer to sink to this critical depth. This would allow the effort required for the roll to be spread over a greater time interval.

If the paddle stroke starts near the

surface at the beginning of the roll (usual, but not universal),* the ideal situation would be for the paddle to remain fixed at the surface throughout. This ideal is impossible, but since the motion of the paddle through the water is viscous damped, the necessary force will result in far less motion if applied **quickly**. This factor, along with the moment of inertia effect previously described is the reason that a roll which is fast is a great deal more effective than a slower one.

Effect of Boat Hull Shape

The shape and configuration of the particular boat used has a considerable effect on the effort required to execute the Eskimo Roll. Most obvious is the fact that any sharp edges or corners on the boat (such as a large, flat deck with squarish gunwales) will catch and push water ahead of them as the boat is rotated, a viscous effect which slows the roll. The distance of the system center of gravity above the roll axis is also very important. (Kayaks with high seats are harder to roll, decked canoes in which the paddler kneels rather than sits are hardest of all.)

A somewhat unexpected effect which has been noticed by many boaters is that the less stable boats, such as "wild-water" or downriver racing kayaks, often prove more difficult to Eskimo roll than the stable designs. (Stability here refers to the natural tendency of the boat to stay in either its normal or its inverted position. The least stable boat would thus have a cylindrical cross section, like a log which will float with any surface up.) The reason is that tipping a **stable** boat on its side actually stores potential energy by raising the center of gravity of the boat above its normal position. The boater supplies this energy during phase one of the roll when the available torque is a maximum and the required torque is a minimum. He gets it back in the form of an extra push when he most needs it—during the critical second phase of the roll when the center of gravity of

*Heath, John D.: "World's (Onetime) Best Kayakers" (King Island Roll). *American Whitewater*, Vol. XIII, No. 4, 1968.

his body is above the water and the blade of the paddle has sunk somewhat below the surface. The limiting case would of course be the boat which is so stable when inverted that the paddler can't generate enough torque to tip it on its side during the first phase of the roll. (A conventional canoe equipped with a deck approaches this limit, and a decked rowboat would almost certainly be impossible to roll for this reason—a ghastly thought indeed to anyone who has ever tried to roll a boat.)

Conclusion

It is certainly possible to execute an Eskimo Roll which does not depend to any great extent on one or more of the effects dealing with the change of the paddler's position relative to the boat, and the physical configuration of the boat. In fact, my observations indicate that such things as the type of roll used, the boater's physical strength, and his body weight distribution will cause the contribution from each effect to vary over a wide range from boater to boater. I have even noticed that the contributions from the various principles vary slightly from attempt to attempt in my own roll, depending on my physical condition, degree of exhaustion, amount of recent practice, and mental attitude.

The good, positive rolls, however, usually use most of these principles in some degree, and any roll which does not incorporate one or more of them would generally be even more effective if it did.

WORLD'S FINEST SPORT CANOES

- Can be used with Motor - Sails - Paddles
- Built-in carrying yoke - full length keel
- Fiberglass construction

LENGTH: 16 Feet
WEIGHT: 80-90 lbs.
COLORS: Blue, Orange,
Green, Yellow, Red, Camouflage

UNSINKABLE!
CAPACITY:
Approx. 1000 lbs.
DEPTH: 15"

Send
for
FREE
Brochure

VIKING
EXPLORER
CANOES

3727 South 9th East St.
Salt Lake City, Utah 84106

W.W. WOODEN CANOE PADDLES

Designed and built in limited quantities
by world champion Josef Sedivec.

Write for information to

SEDA PRODUCTS

P.O. Box 369, La Mirada, Calif. 90638



TROUBLE ON THE TUOLUMNE

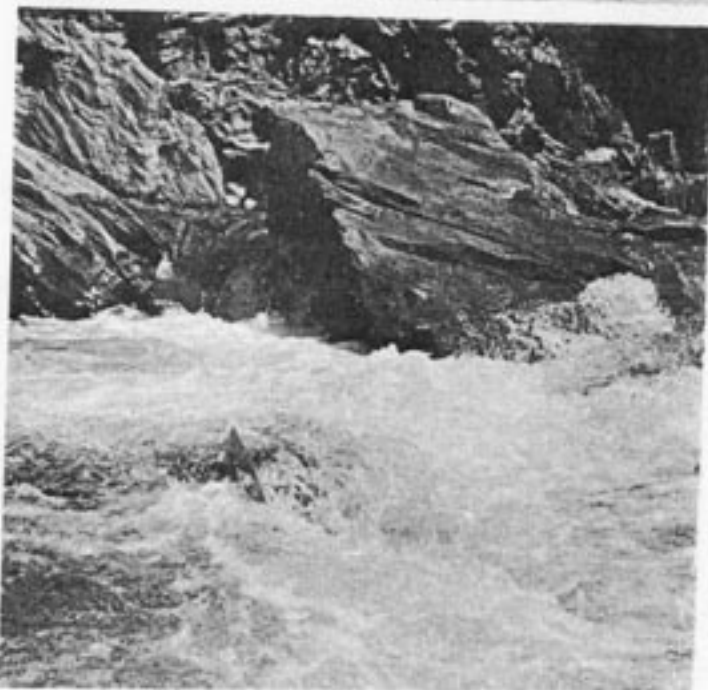
By Carl Trost, 257 Pacheco St.,
San Francisco, CA 94116

It is disconcerting to watch one of your friends disappear under a mild chute of water, particularly when you have just run through the same spot. "Disconcerting" is hardly the word when he fails to reappear.

The scene was a Sunday in September, a time when nature and the local power company conspire to bring down both the exuberance of our "big-water" boaters and the river flow to what prudent kayakers would consider to be more reasonable levels. In fact, the magnificent rapids of this fantastic, 18-mile run (AWA, XV-4, page 22) had been reduced to a series of long "rock gardens."

Eight of us had just finished running a typical rapid—a labyrinth of boulders, a hidden chute, a series of pools and small drops between the rocks, and a final drop of three or four feet. John Ramirez had lagged some distance behind to accompany John Googins, who had sacrificed his own weekend of kayaking to row, push, and cajole our baggage raft through the rocky course on our slow-water, two-day trip. I had not planned to shoot any more pictures, but during our rest stop I decided to reload my camera.

Finally, the baggage raft appeared, followed by John Ramirez. Googins slithered through the course and pulled into our eddy. John Ramirez approached the last drop (cover photo). As he came down the chute I heard the familiar "clunk" of fiberglass meeting rock. John's forward motion halted abruptly (top photo). The water pouring down the chute was now shoving the kayak under and water was spraying over John's back and head (middle photo). I continued to shoot John's paddle, expecting to see him come up in his usually reliable roll, when I realized that John was no longer attached to the paddle but was still being held at the base of the chute (several seconds after, bottom photo).



By the time I had hopped the rocks back upstream, John Googins was already in the river up to his waist and a few yards from the site. John Ramirez popped up a moment later, followed by his kayak. John had been unable to get out of the cockpit because of the water pressure against his back. He was a bit shaken, his bloody shins gave evidence of his attempt to wriggle out of the boat, but after a brief rest he continued down the river.

GUIDEBOOK

MAKENS' GUIDE TO U. S. CANOE TRAILS, James C. Makens, Le Voyageur Publishing Co., 1319 Wentwood Drive, Irving, Texas 75161, \$4.95. Contains an alphabetic listing of some 900 rivers in the U. S., and also catalogs these rivers

by state, giving a brief description of each. The size of the book (5½ x 8½ inches, 82 pages) limits the river descriptions to a line or short paragraph, which, as the author warns, are generally insufficient information for the person planning a river trip. Both flat and rapid runs are included, and only some of the latter use the international I to VI danger scale. The **GUIDE** is primarily a literary research, and as might be expected, the coverage and descriptions are quite inconsistent from river to river and state to state. Perhaps the most valuable feature is the well catalogued bibliography, which in spite of some rather prominent omissions, (**Appalachian Water** by Burmeister, **New England Canoeing Guide** by the Appalachian Mt. Club) is perhaps the most complete list of sources on the subject to date.

WATER MEISTER SPORTS INTRODUCES LENDAL'S

Revolutionary, New slalom and downriver competition kayak paddles. Special glass shafts, optional patented offset hand control grips, laminated wood blades. A combination of strength with lightness and balance.

Write or Call: P.O. BOX 5026 • FT. WAYNE, IND. 46805 • (219) 433-5323

SALE OF VALUABLE ANTIQUES! COLLECTOR ISSUES

AMERICAN WHITEWATER JOURNALS of years gone by. Enjoy action photos, exciting trip stories, valuable technique instruction, equipment and safety information . . . Six-Pack "F" (\$2.50, Foreign \$3.00) is of the following dates: Autumn 1961, Winter 1964, Summer 1964, Autumn 1964, Winter 1969, and Spring 1969.

These 6 issues include the following articles:

River Trips: The Peshtigo River, Wisconsin; The Moose River, New York; The Obed River, Tennessee; The Petawawa River, Canada; and Wilderness River Touring in Canada.

Racing: Ireland's Liffey Descent; World Whitewater Championships, 1963.

Technique: Emptying a canoe in deep water; Milo Duffek rolls with hands only in an exploding wave.

Lake Trips: Canoeing in Yellowstone, Wyoming.

Send \$2.50 for all 6 issues, 6-pack "F" (\$3.00, Foreign)

AMERICAN WHITEWATER

BOX 1584

SAN BRUNO, CALIF. 94066

THE JAMES BAY PROJECT

By Carl H. Williams, Salisbury School, Salisbury, Conn. 06068

How many wilderness rivers are there left in the continental United States? Not many—I've seen the number somewhere, and as I remember it we have only about a dozen. The dam builders are hard at work to tame the last few that remain, but the wilderness rivers here have become sort of a minor league operation for the power companies now. They have new fields to conquer—the hundreds of wild rivers that flow through Canada—these are foremost in their eyes right now.

As the director of a Canadian canoe camp (Camp Kapitachouane) I have canoed about 15,000 miles through the rivers of Quebec from the Ottawa north to the Ruppert. I know what the country is like, and it's not the unpopulated mosquito filled muskeg swamp that most people envision. Its big lakes that are blue under the sky; a long open stretch of river that is a leaden grey, with white caps driven by a rain almost as cold as sleet; a tiny moose pond surrounded by a forest of black spruce with their cone filled tops clear against the skyline; a rapid-filled river with beautiful clear bush underneath the jackpine; a tiny winding creek almost choked with alders; and a lovely rocky point with a canopy of birches over my tent. But the power companies have their eyes on all this. The latest threat is the James Bay Project which will dam the Nottoway, Broadback, and Ruppert Rivers. And I am sure that there will be others to follow.

These are real wilderness whitewater rivers that flow into the southeastern corner of James Bay. The Nottoway is formed by the confluence of the Bell and the Waswanipi in Mattagami Lake. It flows 160 miles north to the Bay with a drop of 760 feet. The Ruppert is the outlet of Mistassini Lake and the Broadback is formed very near there. Both of them flow west to the Bay, a distance of about 400 miles with a drop of approximately 1200 feet. All three of them were regularly traveled by Indians in the days of the fur trade, with

the Ruppert being one of the most important canoe routes from the interior of Quebec to Hudson's Bay.

There is some great canoeing and some great whitewater on these (and other) rivers up there, and to give you a flavor of what it's like, let me quote a few pages from my trip diary of August 1970 when I went down the Broadback River. There were ten of us on the trip; eight campers, another counselor, and me. We had canoed from Chibougamau to Assinica Lake from July 29 to August 6. We were resupplied there by plane and then started out from Assinica Lake on Friday, August 7.

Monday, Aug. 10: "We reached 'Long Rapid' at about 10:45. The first two rapids were easy. I was able to find and point out the channel without leaving my canoe. I had Doc and Kiff look at the next one from shore and we were able to run that along the right shore, missing the big swells. There was a nifty rocky point there so we stopped for lunch where I doubt anybody had ever stopped before. A great swimming spot which we all took advantage of because it was so very hot. With the heat and the humidity it started to cloud up during lunch. We had beans and Tang. I would have given five dollars for a bucket of ice cubes. I managed to cut the bannock into eight pieces, but some boys didn't want any so we made out all right.

"We started out at 12:45 and almost immediately got rained on, but it still stayed very hot and humid. In No. 16D I wanted to go next to the right shore but got started in the middle by mistake. (All of these rapids were being run "Follow Me" fashion without stopping to look at them from shore.) The current was very strong, much too strong to pull against, so I took it down the middle. Several canoes shipped water and Doc hit a big rock right in the middle of the rapid. Fortunately he did not turn over, but he did turn around and have to finish up the rapid by running it backwards. It then started

to rain very hard so that the drops were kind of bouncing off the water and the visibility was really lousy. No. 16E looked OK from the top so we started down. However, there was more drop than I thought and the waves were bigger than they seemed through the rain. Before I knew it we were all right in the middle of a big rapid. I was headed for a "V" that looked OK and then I suddenly realized as I looked at it through the gloom that it was full of rocks. For a second I thought we had really "bought the farm" but at the last instant I was able to snake the canoe through a real mess of rocks and swells. We all shipped lots of water, but got through OK. So much for running rapids that you cannot see, have not really looked at, and have never run before! We got to this portage in the rain at about 1:30, just after that rapid. There was a good campsite at the upstream end; it looked like rain for the rest of the afternoon; reportedly the trout fishing was good here; and so I decided to camp."

There aren't many rivers left where a real wilderness canoe trip can be taken, and if the James Bay Project is completed that there will be several less. Exactly what is the project going to do? According to the magazine **Electrical World** of July 15, 1971, Quebec Hydro would dam the Nottoway River, divert it through canals and tunnels into the Broadback River, which in turn would be dammed and diverted into the Rupert River. 420 miles of access roads must be built just to start construction. From nine to eleven power dams and powerplants would be built on the Rupert with an additional six control dams on the other rivers. Several tunnels of about 4000 feet each, and 50 miles of dikes would be needed. Also there has been consideration of the construction of a 200-mile railroad. Once the roads are made, construction camps and then towns would follow, and by the early 1980s an area of 2000 square miles (that's the size of the state of Delaware) would be flooded at a cost of maybe four billion dollars. And another piece of real wilderness will be gone forever.

What can you do to help prevent this rape of the wilderness? Speak, write, and let your thoughts and concerns be known. Naturally you should support financially and write to all the conservation organizations here in the U. S., but also those in Canada. This project will need massive financial support, and much of that must come from the U. S. Write to your congressmen, senators, governors, and state legislators that you are against any public financial support (either direct or hidden—as in tax relief for power producers) for this project. Write to the New England River Basin Commission and the New England Regional Commission, both of whom are involved in a survey of power needs for New England. But above all, do something about it. If enough voices are heard we may be able to stop the project before it gets too far along.

Conservation Groups to write about James Bay Project:

Friends of the Earth, 620 C. Street S.E., Washington, D. C. 20003.

Sierra Club, 235 Massachusetts Avenue, Washington, D. C. 20002.

The Wilderness Society, 729 15th Street N.W., Washington, D. C. 20005.

Sierra Club of Ontario, 43 Victoria Street, Toronto, Ontario.

Atlantic Chapter, Sierra Club, 51 W. 51st Street, New York, N. Y. 10019.

New England River Basins Comm., 55 Court Street, Boston, Mass. 02108.

New England Regional Comm., 55 Court Street, Boston, Mass. 02108.

Canadian Council of Resource Ministers, 620 Dorchester Blvd., West Montreal, 101, P. Q.

Canadian Audubon Society, 46 St. Clair Ave. East, Toronto 7, Ontario.

Canadian Wildlife Federation, 1419 Carling Ave., Ottawa 3, Ontario.

The Nature Conservancy of Canada, 1407 Yonge St., Toronto 7, Ontario.

JR. SIZE K-1 — MINOR

All other Klepper models in stock; complete line of accessories, paddles, and Sawyer canoes.

WOLF T and A

109 E. Superior Ft. Wayne, Ind. 46802

TRIP REPORT, BOREAS RIVER

By David Binger

From the Newsletter of the Kayak and Canoe Club of New York

KCCNY Paddlers: Jan Binger, Dave Binger, Walter Blank, George Famy, Jim Bowen, Gerhard Mueller and Sierra Club members Paul Arches, Bill Clark and Bob Haas.

I would like to quote a passage from my notes, made after running the Boreas on May 7, 1966; four years ago.

"The road into the Gooley Camp was closed because of mud, so we decided to run the Boreas River, a tributary of the Hudson. We put in at a bridge at Rte. 28N, about 15 miles from North Creek, north and slightly east. The Boreas was obviously low, but we embarked anyway, eleven paddlers strong. We started right off with a bang. A steep and tricky staircase was encountered almost immediately, and one of our paddlers (Hoiberg) came to grief. After that, the river looked as if it might offer a long, arduous and perhaps, dangerous run. Many of our paddlers were novices, but in spite of the fact that most of them turned over at one point or another, all made it through except for one canoeist (Creighton), who bashed his boat and had to carry it down the railroad tracks which accompany the river towards its end, to a take-out place near the Hudson confluence. For a while, the river became a still-water, flowing almost imperceptibly through park-like country. Below that, however, were about 4 miles of uninterrupted rapids. At that water level, it wasn't too demanding, but required a great deal of close attention and hard work. At a higher level, it would seem that great caution must be used in attempting to run the Boreas. The Hudson River gauge read 4 feet 7 inches. We're not sure of the correlation between the Hudson's water level and that of the Boreas, but will try to find out."

Well, we found out all right. On the day we ran the Boreas this year, the Hudson River gauge read 6 feet 9 inches. The "steep and tricky staircase" referred to above was a big, ugly, semi-waterfall, followed by a real

waterfall. The first two or three boats went over before they had a chance to really wet a paddle. Walter Blank was separated from his boat, severely bruised on his legs, and after being reunited with his fancy, super-strong epoxy-S-cloth kayak, decided to walk out, as his boat's bow had been holed. The boat had been swept downstream over horrendous rocks and rills for about 2 miles with scarcely any damage except for the tip of its bow. A polyester boat would have been reduced to shreds by the same treatment.

Slightly shaken by the fact that we seemed to be irrevocably wed to a monster, we proceeded downstream. The still-water was still there, quiet and deceptively reassuring. This time, we knew what lay below it, and were scared. And suddenly, there was the endless rapid, churning convulsively downhill like a ski trail in an earthquake. For a while, things went well enough, but the fact that there was no respite for such a long time put quite a strain on all of us. Each paddler just had to fight his way down as best he could. The rapids got bigger and angrier, and the Boreas seemed, to some of us, at least, better run at a lower level.

We came to a corner, and what lay around it was partially blocked from view. It sounded nasty, and looked worse. Jan got out and scouted it. When she came back, looking thoroughly unenthusiastic, she gave us some directions that sounded like, "Right, left, left, right, right," or something of that sort. I was nervous. I felt like a tight-rope walker crossing Niagara Falls with one shoe untied and his pants coming down. I started first, down a huge drop with a hole at its base. Try as I would, I couldn't paddle up out of the hole, and finally, and most unwillingly, turned my head toward the bottom of the river. I tried to roll up, but was jolted along on my head and shoulders on a series of rocks as I tumbled down the river bottom. My helmet had



come off, and I was taking a bad pounding. I decided to get out of there, but couldn't turn myself into a position from which I could extricate my legs properly. I was stuck, and beginning to slip into unconsciousness. At the edge of that black void, I gave another heave, and popped out. The swim that faced me was hardly a joyride. It was rough, and the water cold. Worse was the fact that the rapid, as mentioned above, seemingly had no end, and there was no pool to gently gather the exhausted swimmer.

I finally got to shore, with boat, but without helmet or paddle. Let me say right here that I have lost two helmets in big water in two years. They were both of the horse-training variety, black, with a short brim and held under the chin by a thin strap which sometimes snaps in place. I am through with that type of hat as of this writing, for good, and urge those of you who still use this becoming but inadequate bonnet, to switch with me to the "Top-tex" helmet which can be purchased at any surfing or mountaineering supply house. It's a big improvement. After a lot of scrambling around, my paddle was returned to me by most most help-

ful traveling companions, but I was pretty shaky, and didn't feel that I wanted to beat my head into the Boreas' bottom any more, especially without a helmet. I walked out, carrying my boat (about a mile and a half, I would guess), down the railroad tracks to the North Woods Club road. Several others in the party wanted to join me, but paddled on, instead. The river calmed down after the big drop where I went in, and there were no accidents thereafter.

The Boreas can be run when the Hudson is at 6 feet, 9 inches. The question is, should it be? If you are a competent high-water paddler with a very good to infallible roll, go ahead. But watch it! Use your head! (Not as a bottom-scraper, as I did!) Scout everything that you can't see, or are unsure of. There's a real waterfall near the top of the river that could give you a lot of trouble. Take a strong party and some extra paddles, and don't be ashamed to line around places that don't appeal to you. Wear a whole wet suit, both top and bottom. Those who didn't, both on the Boreas, and on the Cedar the next day, suffered for their negligence, either by getting hurt in the river, by becoming so cold that they had to take out before the end of the river or by going into semi-shock from exposure.

If you want to know what the Hudson Gorge is like at 6 feet 6 inches or thereabouts, you'll have to ask Walter Blank. As for me, when that operation was going on, I took my previously softened head, still without helmet, to the Adirondack Museum at Blue Mountain Lake for one of the most enjoyable and satisfying museum visits I have ever made. You must see this unbelievably beautiful place to believe it. I recommend it to all paddlers who are in the North Creek area.

SIMS FLOTATION BAGS

Prices F.O.B. Vancouver

K-1	(2 bags)	3.1 lbs.	\$ 9.50
C-1	(2 bags)	4.5 lbs.	\$12.00
C-2	(3 bags)	5.5 lbs.	\$15.50
C-2	(center bag)	3.2 lbs.	\$ 9.60

Quality 20mm Vinyl Electronic Seal

P.O. Box 8979 • Vancouver, B.C., Canada



OLYMPIC REPORT

By Jay Evans, U. S. Olympic Coach

The 1971 racing season is now behind us and we can look back on a period of solid achievement: the emergence of a respectable, full-scale K-1W class; a new C-2 team; and other new faces coming up through the ranks. What made this past year so exciting was the double attraction of competing in the World Championships and at the same time pointing toward the Olympics itself.

The World Championship results indicated clearly that, even though we improved in many categories and in spite of a team unwieldy in size, whitewater slalom is still very much a European sport and we are still outsiders looking in. Nevertheless, three major events helped our cause:

1. Olympic support: for the first time, by way of an Olympic grant, whitewater paddlers were able to afford decent living and eating conditions at the World Championships and help with transportation.

2. High Performance Products, of Hingham, Mass., with great generosity, provided 53 boats and support services for the entire U. S. Team.

3. Some 20 volunteers were on hand to help with the American effort at Merano. Without all this backing our team could not have done nearly as well as it did.

After the World Championships it became my responsibility, following the directives of the U. S. Olympic Kayak and Canoe Committee, to choose an Olympic 'A' squad from among our best paddlers. It should be emphasized that being named to this 'A' Squad is in no way premonitory toward being given a spot on the actual Olympic Whitewater Team. The team is chosen at the trials, and this is as it should be. The purpose of the 'A' Squad is to concentrate our limited resources and coaching manpower on improving our best boaters. It is a 'preparation concept' rather than a 'development' concept. The 'develop-

ment' of new boaters more rightfully belongs under the jurisdiction of the national sport committee which in our case means the National Slalom Committee of the American Canoe Association. Long years of experience by various Olympic committees has proven the wisdom of this method in preparing our best athletes for world class competition. Selection to the 'A' squad was based primarily on three qualifications: A) racing record, B) demonstrated desire to sacrifice and train for the Olympics, C) actual racing experience on the new Augsburg Olympic course. The following have been named to the Olympic 'A' Squad for Whitewater Slalom:

K-1—David Nutt, Dwight Campbell, Eric Evans

K-1W—Linda Hibbard, Louise Holcombe, Peggy Nutt

C-1—Sandy Morrison, Jamie McEwan, John Sweet

C-2—Draper and Rogachenko, Hager and Endicott, Burton and Southworth

The above-named athletes are currently enrolled in an individualized National Whitewater Training Program and will be asked to enter all three of their region's regional Olympic Trials next spring. A training camp was held at Tarrifville early last fall, and a National Olympic Training Camp is scheduled for the 'A' Squad on April 15-16, 1972 at Mascoma. An Olympic Whitewater Training Handbook has been issued to the 'A' squad and to other top flight paddlers, and Karl Knapp's training manual is being translated (courtesy of the Ledyard Canoe Club) and will be available to 'A' squad members and other top racers. In addition, reels and reels of training film have been taken of last summer's race at Augsburg and are circulating around the country.

Hopefully all these efforts will help our paddlers to realize their maximum potential next year at the Olympics.

ARE YOU HOPING FOR A SPOT ON THE U.S. OLYMPIC SLALOM TEAM?

The hope that any of the U. S. entries will be medal winners next August in Augsburg depends on a lot of hard training.

Jay Evans as Coach and Tom Johnson as manager will be giving up a lot of their "paddling time" in an effort to help the hopefuls and increase the chances of medals. It can't be done with week-end training.

Tom is offering to conduct a pre-racing season training camp in Kernville, California starting February 1 and ending with the annual races there on April 22-23. The river is normally low at the beginning of this period, increasing gradually to 1200 CFS. This offers gradual increase of difficulty with many suitable sites for slalom training as the water rises.

Those with team capabilities who wish to participate in this camp should contact Tom Johnson, Box 675, Kernville, Calif. 93238.

USOKCC FILM

A 26-minute 16mm color film with sound has been produced by Jon Fauer for the U. S. Olympic Kayak and Canoe Committee. This exciting film portrays for the first time in 16mm the thrill, excitement and pageantry of the U. S. Whitewater Team in slalom at the last World Championships in Merano, Italy, in June, 1971. Copies of this film can be secured by writing to the U. S. Olympic Kayak and Canoe Committee, Eric Feicht, Chairman, 608 W. 192nd St., New York, New York 10040.

ROCKFORD POOL SLALOM

Second annual Rockford Pool Slalom, February 19-20, 1972 at Rockford College, Rockford, Ill.

Sponsor: Fred Young, c/o Forest City Gear Co., Roscoe, Ill. 61073. Telephone (815) 623-2168, work; 623-2612, home.

15-gate pool slalom expert, intermediate, novice, K-1, K-1W, C-2, C-2W, C-1, C-1W. Team runs if possible.

Films, smorgasbord, fellowship Saturday evening. Pre-registration requested to Fred Young.

VOYAGEUR PROTECTION



Voyageur's exclusive new Camp-Pak Bag is waterproof, airtight and transparent. The patented sliding closure seals the bag at any point along its length, adjusting the Camp-Pak's size to your requirements. Size 22" x 36", large enough to carry two lightweight sleeping bags. The Camp-Pak Polyethylene Bags are replaceable at only 75¢ each.

A woven polypropylene outer bag, the Pak-Guard (not shown), which adds abrasion and puncture protection, is optional at 75¢ extra.

Voyageur Camp-Pak \$3.35 ea.

-with Pak Guard \$3.98 ea.

Please add 85¢ for postage.

Order two Camp-Pak Bags and get a replaceable Camp-Pak Polyethylene Bag worth 75¢ FREE. MONEY-BACK GUARANTEE.

Voyageur's waterproof bags are used by canoe and kayak enthusiasts in 43 states and Canada. Special club rates on request. Free folder available.

VOYAGEUR ENTERPRISES

P. O. Box 512-A

Shawnee Mission, Kansas 66201

1971 RACE RESULTS III

Wolf River Slalom (Wisconsin)—May 22-23, 1971—Class III

K-1 Expert		K-1W Expert		C-1 Expert	
1. S. Powers	231.6	1. L. Seaman	378.8	1. S. Powers	252.0
2. A. Button	247.8	2. D. Geisler	421.0	2. A. Button	327.8
3. D. Anglin	318.2	3. J. Anderson	445.4	3. W. Brummond	393.8
C-2 Expert		C-2M Expert			
1. Powers/Brummond	292.2	1. Olsen/Losick	341.2		
2. Button/Nichols	378.0	2. Nichols/Geisler	345.6		
3. Weber/Campbell	429.8	3. Powers/Anderson	371.3		

Rocky Mountain Cup Race and Rocky Mountain Division Slalom Championships—August 8, 1971

K-1		C-1		K-1W	
1. D. Nutt	172.3	1. J. McEwan	243.4	1. P. Nutt	191.5
2. R. Mason	173.9	2. S. Lenkerd	310.1	2. C. Goodwin	222.0
3. B. Nutt	178.8	3. D. Knight	356.3	3. L. Holcombe	229.4
Teams				Rocky Mountain Championships	
1. Seaman/Nutt/Nutt	236.8	1. R. Mason	173.9		
2. McCandless/Martins/Mason	283.6	2. J. McCandless	188.6		
3. Holland/Martin/Kelsey	292.4	3. U. Martins	193.3		

National Kayak Slalom Championships—August 14, 1971—Buena Vista, Colorado

Men		Women		C-1	
1. Eric Evans	198.7	1. Cindi Goodwin	290.6		
2. David Nutt	201.6	2. Peggy Nutt	297.0		
3. John Holland	203.6	3. Louise Holcombe	303.0		
Juniors					
1. D. Peterson	267.8	1. J. McEwan	272.7		
2. D. Guskey	305.9	2. S. Powers	351.1		
3. D. Reker	364.1	3. S. Lenkerd	414.1		
Teams					
1. Evans/D. Nutt/B. Nutt	366.2				
2. Martin/Kelsey/Holland	413.7				
3. Martins/Mason/McCandless	533.4				

Buena Vista Downriver Race

K-1		K-1W		C-1	
1. R. Mason	18:55.6	1. N. Lemmon	10:21.0	1. A. Button	20:47.0
2. C. Martin	19:37.1	2. J. Benisek	10:26.0	2. D. Knight	21:25.9
3. U. Martins	19:48.5	3. S. O'Brien	10:35.3	3. S. Lenkerd	22:11.5

EUROPEAN RESULTS—Summer 1971

Augsburg, Germany—site of 1972 Olympics

K-1 (53 boats)		C-1 (30 boats)		K-1W (24 boats)	
1. U. Peters, GER	250.00	1. R. Kauder, GER	333.00	1. U. Deppe, GER	350.80
2. B. Dichtl, GER	265.30	2. W. Peters, GER	337.50	2. P. Nutt, USA	443.40
3. A. Baum, GER	276.00	3. J. Forster, GDR	360.20	3. A. Bahmann, GDR	453.30
25. E. Evans, USA	407.80	9. S. Morrison, USA	492.90	17. L. Hibbard, USA	734.00
45. D. Nutt, USA	617.00	15. T. Irwin, USA	608.10		
		17. R. Spencer, USA	618.10		
		23. W. Walker, USA	705.90		

Icebreaker Slalom—October 2-3, 1971—Unadilla, N. Y. (17 Gates, Class 2+)

C-1		K-1		K-1W	
1. J. Sweet	129	1. K. Lettmann	123	1. C. Goodwin	182
2. T. Irwin	161	2. L. Bechdel	137	2. L. Wright	242
3. J. McEwan	164	3. B. Alexander	148	3. C. Clark	243
C-2M		C-2W		C-2	
1. Sweet/Shuster	188	1. Shuster/Stein	300	1. Draper/Rogachenko	137
2. Holcombe/Holcombe	189	2. Routhannel/Fetch	451	2. Liebman/Feldman	174
3. Liebman/Mela	229	3. Hesselgrave/Lewis	453	3. Irwin/Yearick	216

St. Croix Slalom Results (Olympic Trials Qualifying Race)—September, 1971

K-1 Expert		K-1W Expert		C-1 Expert	
*1. A. Button	390.9	*1. L. Wright	577.5	*1. S. Morrison	374.9
*2. S. Morrison	399.1	*2. B. Losick	811.9	*2. A. Button	399.9
*3. S. Martin	402.9	*3. M. Uhalde	835.7	*3. E. Olsen	677.6
*4. D. Reker	554.3				
*5. D. Withers	575.0				

C-2 Expert		C-2M Expert	
*1. Braman/Braman	546.1	1. Button/Watson	532.5
*2. Olsen/Ransburg	722.6	2. Brummond/Uhalde	640.9
*3. Withers/Conrad	732.0	3. Olsen/Losick	758.0

1971 National Poling Championships—September, Times Beach, Mo., Meramec R.

Top Ten:		Score	
1. Mike Guenther	169.2	6. Bob Fuchs	214.9
2. Syl Beletz	178.7	7. Jim Vogt	223.9
3. Ron Kloepper	180.3	8. Dave Belleville	240.6
4. Al Beletz	199.6	9. Ken George	482.4
5. Scott Schulte	213.7	10. Ron Ehmsen	666.6

*denotes trials qualifier

AMERICAN WHITEWATER

Cumulative Index, Vols. XI-XV (1965-70)

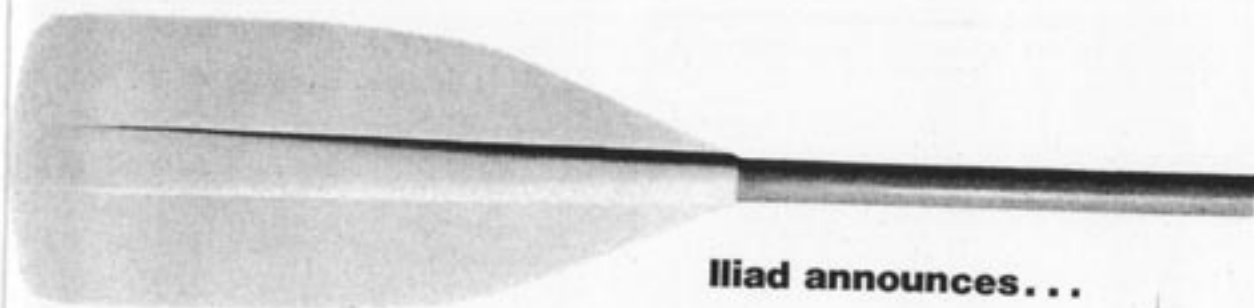
Prepared by Claire Martin, President, Penn State Outing Club

Author	Articles	Vol., No.,	Page
ADNEY, EDWIN/CHAPELLE, HOWARD	<i>The Bark and Skin Canoes of North America</i>	XI	3, 24
ALEXANDER, BOB	1970 Race Results	XV	3, 23
ALEXANDER, EDGAR	Review Safety Codes	XV	2, 30
ALLER, ROD	Zoar's Gap Training Camp	XIV	2, 17
ARIGHI, MARGIE	Touring Western Whitewater	XV	3, 5
BELETZ, AL	First U.S. National Poling Championships	XII	2, 6
BENNETT, CARL	The Vermillion in Winter	XV	1, 15
	We Run the Peshtigo	XIV	4, 7
	The Wonderful First Time on Whitewater	XV	2, 14
BERNT, BILL	Defeat in Missouri for Scenic Rivers	XIV	3, 30
BINGER, DAVID	Easterners on the Middle Fork	XIV	1, 9
	First Eastern Slalom Clinic	XII	1, 22
	Polly Ester in Wonderland	XI	1, 30
	The Log (Hudson River)	XIII	2, 17
	The Moose River of New York	XIV	3, 28
BLANK, WALTER	Six Beeps a Go-Go River	XV	1, 27
	Snake River	XIII	2, 28
BOMBAY, JOHN	South Fork of the Cumberland	XII	2, 10
BUCK RIDGE SKI CLUB	<i>Basic River Canoeing</i>	XIV	1, 30
BURLESON, BOB	Mexican Rivers are Really Wild	XV	1, 24
	AWA's Purpose and Usefulness	XIV	3, 20
	Running the Rio Grande	XI	3, 3
	Running the Rio Grande (II)	XI	4, 18
BYDE, ALAN	Caving by Kayak	XV	1, 18
	The Kayak Hunter	XII	1, 5
CARDWELL, PAUL	<i>America's Camping Book</i>	XV	2, 28
CARPENTER, CHUCK	Low Cost Grand Canyon Run	XV	3, 15
CARR	<i>Death of the Sweet Waters</i>	XII	2, 5
CLARK, MIKE	Ireland's Gruelling Liffey Descent	XIV	4, 16
COFFIN, STEWART	An Episode of the Kazan	XII	3, 16
	How Long Should Paddles Be?	XIII	4, 29
CORBETT/MATAZIA	<i>Blue Ridge Voyages</i>	XII	4, 11
CUTTER, FRAN	Cache Creek	XV	4, 8
DAVIDSON, A. F.	Survival: The Will to Live	XII	1, 13
DIXON, PETER	The Complete Book of Surfing	XI	1, 28
DUBOIS, ELIOT	How AWA Began	XII	2, 3
EVANS, JAY	Dartmouth on the Danube	XII	1, 10
	The Fish-Pole Slalom Gate	XIV	2, 16
	Hypothermia (Cold Water Effects)	XII	2, 14
	Pool Training Techniques	XV	4, 26
	Testing Quechee Gorge	XII	1, 3
	A Two-Second Roll	XI	4, 20
	World Championships 1969	XV	2, 17
	Whitewater Racing Report	XII	3, 7
	A Whitewater Park	XIV	2, 20
	Racing Report, Winter Activities	XIII	1, 11
	Racing Report	XIV	4, 20
	Race Organizing is Hell	XV	3, 3
	Pool Training and Kayak Polo	XIII	4, 13
	Foiling the Boat Muncher	XV	3, 13
	International Ranking	XIII	3, 19
FAWCETT, MARK	The Lessons of Spittal 1965	XI	2, 18
FINLEY, CURTIS	Canoe Camping	XV	4, 6
	The Meek Wild Growing Things	XII	3, 17
FRASER, J. C.	The Threat of California's Water Export Plan	XIV	4, 30
GIDDINGS, J. CALVIN	Cross Mountain Conquered	XI	4, 5
GRAY, DORIS EDNA	The Music of the River	XIV	4, 13
HACKAMACK, ROBERT	The Tuolumne River of California	XV	4, 22
HARE, CHRIS	An Eskimo Kayak Race	XIII	3, 4
HARRIGAN, ROBERT	How To Go About It	XIII	4, 20
	Robert Francis Kennedy	XIII	4, 3
HAUTHAWAY, BART	Fantasticks on the Farrington	XIV	1, 17
	Origin and Directions of AWA	XIII	3, 24
	Recruiting New AWA Members	XIV	4, 26
HAWKSLEY, OZ	River Guide: The Bois Brule	XII	1, 39
	Missouri Ozark Waterways	XII	2, 15
	Proposed New Constitution and By-Laws	XIII	2, 6
	Report from the Nominating Committee	XIV	2, 24
	Report on the Present Status of AWA	XIV	1, 24
	River Protection Legislation, Now or Never	XIII	1, 8
	Scenic River Bills	XIV	2, 26
HAWKSLEY, OZ and DOROTHY	Hoback, Grey's and Wind Rivers of Western Wyoming	XV	4, 10
HAYES, MARCIA	The U.S. Army Corps of Engineers	XV	4, 10
HAZZARD, JACK	A Setting Pole for the Canoe	XV	1, 28
HEATH, JOHN	Eskimo Kayakers of King Island	XIII	1, 10
HOAD, M.	I Don't Like to Wear a Lifejacket	XV	2, 28
HULL, LIZ	Getting Beginners Started	XV	4, 4
JACK, NANCY	Ozark Anti-Litter Crusade	XII	2, 35
	The (Merry) Sound of Metal	XI	3, 9
JACOBSON, ERIC	Helmets for White Water Canoeing	XIII	1, 10
JOHNSON, MIKE	Watertight Kayak Spray Cover	XV	4, 15

Author	Articles	Vol., No.	Page
JONES, LESLIE	Grand Canyon at Low Water	XI	1, 4
	Making Aluminum Kayaks	XIV	1, 26
KAUFFMANN, JOHN	Rapid River Race Clinic	XV	2, 20
KELLY, DUANE	What Is Conservation?	XII	3, 18
KUGLE, BILL	Boating on the Border	XIII	1, 12
KURTZ, DAVID	A Stiff Program of Slalom Training	XII	1, 32
LENTZ, JOHN	Wilderness River Touring	XIV	3, 3
MARTIN, CHARLES	The Wild Middle American	XV	4, 2
MATAZIA, LOUIS	The Blue Ridge Voyageurs on the Cacapon	XII	4, 4
MAY, HERBERT	Rouge River Roughhouse	XII	1, 30
MCALISTER, JIM	The Breeze and I	XI	2, 8
	A Few Western Rivers	XII	3, 9
MERAL, GERALD	Running Rivers in Costa Rica	XV	2, 4
MUELLER, GERHARD	The New River of West Virginia	XIV	2, 32
NEAL, ED	Key Fall River Ruling	XV	3, 11
NEAL, HARRY	Pacific Coast 1971 Schedule	XV	3, 3
NICKERSON, ELINOR	Kayaks to the Arctic	XIII	3, 25
NORMAN, DEAN	A Land Built by Fire and Water	XII	3, 4
	Bareback Canoe Riding	XIV	1, 14
	Canoeing Crazy Horse Canyon	XIII	3, 6
	Lewis & Clark's Real Route	XIV	4, 10
	Thunder on the Mulberry	XI	3, 10
	Is Civilization a Disaster?	XI	1, 23
	Bette Suffers Cheerfully	XIV	3, 9
	Gravel Bars, Bullfrogs, and Such	XV	3, 17
PEEKNA, ANDRES	Safety of Car Top Carriers	XII	4, 15
	Maximum Flotation For Safety	XIII	3, 31
	No Noise at All	XII	1, 33
PRIME, WILLIAM	The Kennedy Hudson Hegira	XIII	2, 15
	Wild Rivers	XII	4, 9
ROSCOE, D. T.	Neoprene Sleeve Mit	XV	3, 12
RUPP, VERN	Organize for Safety: Riverbank Signs	XIII	3, 35
	Use of Standard Warning Signs	XIV	1, 28
RUSSELL, WILLIAM	Tennessee's Scenic Rivers Act	XIV	2, 26
SCHAFER, ANN	The Colorado Below Hoover Dam	XIV	2, 4
	Down the Wide Missouri	XV	4, 29
	One Tough Takeout	XV	2, 6
SCIKLIW, LECIC	Seduction of the Rapid	XI	1, 32
SCHNELLER, MEL	A K-2 for Training Novices	XV	3, 21
SCHULTE, SCOTT	River-Touring with the Peace Corps	XIII	3, 14
SEARS, GEORGE	The Roaring Mattawin	XIII	1, 4
SHAFER, RONALD	AWA Film Report	XV	2, 21
SINDELAR, IRIS	The Grand Order of WOWB's (Whitewater Wives)	XV	4, 25
SINDELAR, JIM	Rediscovery of New Hampshire's Bristol Gorge	XV	3, 14
	Make a Super Spray Skirt	XV	4, 16
SMITH, ANTHONY	The Army Engineers and the Potomac	XIV	3, 31
STEARNS, WILLIAM	Wildwater Open Canoe Championships	XV	2, 20
TOUTILL, KATHLEEN	Our Fight for Life	XII	1, 17
URBAN, JOHN	A Whitewater Handbook for Canoe and Kayak	XII	4, 11
VANDERLECK, J. M.	Tales from the Wilderness of Northern Canada	XI	4, 14
	The Singing Loons	XI	2, 11
WATERS, BILL	Teaching and Learning	XIII	4, 31
	Teaching the Put-Across Roll	XV	2, 14
WHITMORE, MARY ELLEN	The Upper Stanislaus Gorge	XV	3, 4
WHITNEY, PETER	River Tragedies	XIII	3, 36
	New Board of Directors; Membership	XIII	4, 28
WILSON, JOHN	How the Androscoggin Was Saved	XIII	3, 27
	Racing Helps Conservation	XV	2, 17
WINN, BILL	The Animas of Colorado	XIII	4, 4
YOUNG, JOHN	Rescuing an Overturned Kayak by Two Kayaks	XIV	2, 28
YOUNG, TED	The 1969 World Championship Course	XIV	2, 13
Boating Organizations			
	AWA's Purpose and Usefulness, Bob Burleson	XIV	3, 20
	How AWA Began, Eliot Dubois	XII	2, 3
	New Board of Directors; Membership, Peter Whitney	XIII	4, 28
	Nomination of Board of Directors, 1970	XIV	2, 10
	Origins and Directions of AWA, Bart Hawthaway	XIII	3, 24
	Proposed New Constitution and By-Laws, Oz Hawksley	XIII	2, 6
	Report on Present Status of AWA, Oz Hawksley	XIV	1, 24
	Report from the Nominating Committee, Oz Hawksley	XIV	2, 24
Books and Writing			
	AMC New England Canoeing Guide	XI	3, 24
	America's Camping Book, Paul Cardwell	XV	2, 28
	The Bark Canoes and Skin Boats of North America, Edwin Adney and Howard Chapelle	XI	3, 24
	Basic River Canoeing, Buck Ridge Ski Club	XIV	1, 30
	Blue Ridge Voyages, Corbett and Matacia	XII	4, 11
	The Complete Book of Surfing, Peter Dixon	XI	1, 28
	Death of the Sweet Waters, Carr	XII	2, 5
	The Kayak Hunter, Alan Hyde	XII	1, 5
	Kayaks to the Arctic, Elinor Nickerson	XIII	3, 25
	Missouri Ozark Waterways, Oz Hawksley	XII	2, 15
	River Guide: The Bois Brule, Oz Hawksley	XII	1, 39
	Seduction of the Rapid, Lecic Scikliw	XI	1, 32
	A Whitewater Handbook for Canoe and Kayak, John Urban	XII	4, 11
Conservation			
	The Army Engineers and the Potomac, Anthony Smith	XIV	3, 31
	Cache Creek, Fran Cutter	XV	4, 8
	Dams Sometimes Cause Floods	XI	4, 24
	Defeat in Missouri for Scenic Rivers, Bill Bernst	XIV	3, 30

	Vol., No., Page
Down the Wide Missouri, Ann Schafer	XV, 4, 29
Help in Buying Eastern Slalom Course	XIV, 2, 27
How the Androscoggin Was Saved, John Wilson	XIII, 3, 27
How to Go About It, Robert Harrigan	XIII, 4, 20
Is Civilization a Disaster?, Dean Norman	XI, 1, 23
Natural Resources Act	XII, 2, 12
Ozark Anti-Litter Crusade, Nancy Jack	XII, 2, 35
Racing Helps Conservation, John Wilson	XV, 2, 17
River Protective Legislation, Now or Never, Oz Hawksley	XIII, 1, 8
Scenic Rivers Bills, Oz Hawksley	XIV, 2, 26
Snake River, Walter Blank	XIII, 2, 28
Tennessee's Scenic Rivers Act, William Russell	XIV, 3, 24
South Fork of the Cumberland, John Bombay	XII, 2, 10
The Threat of California's Water Export Plan, J. C. Fraser	XIV, 4, 30
The Tuolumne River of California, Robert Hackmack	XV, 4, 22
The U.S. Army Corps of Engineers, Marcia Hayes	XV, 4, 10
What Is Conservation, Duane Kelly	XII, 3, 18
Wild Rivers, Bill Prime	XII, 4, 9
Working Toward Tennessee's Scenic Rivers Bill	XIII, 3, 26
Equipment	
Foiling the Boat Muncher, Jay Evans	XV, 3, 13
Glass Deck Supports	XII, 3, 15
How Long Should Paddles Be?, Stewart Coffin	XIII, 4, 29
Helmets for Whitewater Canoeing, Eric Jacobson	XIII, 1, 10
Klepper's Rigid Kayaks	XIV, 2, 22
A K-2 for Training Novices, Mel Schneller	XV, 3, 21
Make a Super Spray Skirt, Jim Sindelar	XV, 4, 16
Making Aluminum Kayaks, Leslie Jones	XIV, 1, 26
Maximum Flotation for Safety, Andres Peekna	XIII, 3, 31
The (Merry) Sound of Metal, Nancy Jack	XI, 3, 9
No Noise at All, Andres Peekna	XII, 1, 33
Neoprene Sleeve Mitt, D. T. Roscoe	XV, 3, 12
Old Town Whitewater Kayaks Introduced	XIV, 3, 18
Safety of Car Top Carriers, Andres Peekna	XII, 4, 13
A Setting Pole for the Canoe, Jack Hazzard	XV, 1, 28
Wardco Beach Barge	XIV, 3, 22
Watertight Kayak Spray Cover, Mike Johnson	XV, 4, 15
Flora and Fauna	
The Meek Wild Growing Plants, Curtis Finley	XII, 3, 17
The Singing Loons, J. M. Vanderlock	XI, 2, 11
Humor and Miscellany	
AWA-ACA Winter Canoe Camp	XV, 2, 19
AWA Film Report, Ronald Shafer	XV, 2, 31
Bareback Canoe Riding, Dean Norman	XIV, 1, 14
Bette Suffers Cheerfully, Dean Norman	XIV, 3, 9
The Breeze and I, Jim McAlister	XI, 2, 8
Eskimo Kayakers of King Island, John Heath	XIII, 4, 7
The Grand Order of WOWB's (Whitewater Wives), Iris Sindelar	XV, 4, 25
Gravel Bars, Bullfrogs, and Such, Dean Norman	XV, 3, 17
How Long Should Paddles Be?, Stewart Coffin	XIII, 4, 29
Is Civilization a Disaster?, Dean Norman	XI, 1, 25
The Music of the River, Doris Gray	XIV, 4, 23
One Tough Takeout, Ann Schafer	XV, 2, 6
Polly Ester in Wonderland, David Binger	XI, 1, 30
Recruiting New AWA Members, Bart Hawthaway	XIV, 4, 26
Robert Francis Kennedy, Robert Harrigan	XIII, 4, 3
Six Beeps a Go-Go River, Walter Blank	XV, 1, 27
Weather Bureau Helps You Read Rivers	XV, 2, 29
Navigation Rights	
Key Fall River Ruling, Ed Neal	XV, 3, 11
Our Fight for Life, Kathleen Toutill	XII, 1, 17
Racing	
Canoeing Is Different in the Wild East	XI, 1, 18
Fantastics on the Farmington, Bart Hawthaway	XIV, 1, 17
First Eastern Slalom Clinic, David Binger	XII, 1, 22
First U.S. National Poling Championship, Al Beletz	XII, 2, 6
The Fish-Pole Slalom Gate, Jay Evans	XIV, 2, 16
Help in Buying Eastern Slalom Course	XIV, 2, 27
International Ranking, Jay Evans	XIII, 3, 19
An Eskimo Kayak Race, Chris Hare	XIII, 3, 4
Ireland's Gruelling Liffey Descent, Mike Clark	XIV, 4, 16
The Lessons of Spittal, 1965, Mark Fawcett	XI, 2, 18
New U.S. K-1 Slalom Champ	XI, 1, 16
Pacific Coast 1971 Schedule, Harry Neal	XV, 4, 18
Pool Training and Kayak Polo, Jay Evans	XIII, 4, 13
Race Organizing Is Hell, Jay Evans	XV, 3, 3
Racing Report, Jay Evans	XIV, 4, 20
Racing Report, Winter Activities, Jay Evans	XIII, 1, 11
1970 Race Results, Bob Alexander	XV, 3, 23
Rapid River Race Clinic, John Kauffmann	XV, 2, 20
A Stiff Program of Slalom Training, David Kurtz	XII, 1, 32
A Whitewater Park, Jay Evans	XIV, 2, 20
Whitewater Racing Report, Jay Evans	XII, 3, 7
Wildwater Open Canoe Championships, William Stearns	XV, 4, 13
The 1969 World Championship Course, Ted Young	XIV, 2, 13
World Championships 1969, Jay Evans	XV, 1, 3
Zoar's Gap Training Camp, Rod Aller	XIV, 2, 17

	Vol., No., Page
Rivers and Trips	
The Animas of Colorado, Bill Winn	XIII, 4, 8
Bareback Canoe Riding, Dean Norman	XIV, 1, 10
The Blue Ridge Voyageurs on the Cacapon, Louis Matacia	XII, 4, 4
Boating on the Border, Bill Kugle	XIII, 1, 12
The Breeze and I, Jim McAlister	XI, 2, 8
Cache Creek, Fran Cutter	XV, 4, 8
Canoe Camping, Curtis Finley	XV, 4, 6
Canoeing Crazy Horse Canyon, Dean Norman	XIII, 3, 6
Caving by Kayak, Alan Bye	XV, 1, 18
The Colorado Below Hoover Dam, Ann Schafer	XIV, 2, 4
Cross Mountain Conquered, Calvin Giddings	XI, 4, 5
Dartmouth on the Danube, Jay Evans	XII, 1, 12
Down the Wide Missouri, Ann Schafer	XV, 4, 29
Easterners on the Middle Fork, David Binger	XIV, 1, 9
An Episode on the Kazan, Stewart Coffin	XII, 3, 16
The Farmington River	XV, 4, 12
A Few Western Rivers, Jim McAlister	XII, 3, 9
Grand Canyon at Low Water, Leslie Jones	XI, 1, 4
Hoback, Grey's and Wind Rivers of Western Wyoming, Oz and Dorothy Hawksley	XII, 2, 4
How the Androscoggin Was Saved, John Wilson	XIII, 3, 27
Information Regarding Canoe Trails	XV, 4, 12
Ireland's Gruelling Liffey Descent, Mike Clark	XIV, 4, 16
The Kennedy Hudson Hegira, William Prime	XIII, 2, 15
Key Fall River Ruling, Ed Neal	XV, 3, 11
A Land Built by Fire and Water, Dean Norman	XII, 3, 4
Lewis and Clark's Real Route, Dean Norman	XIV, 4, 10
The Log (Hudson River), Dave Binger	XIII, 2, 17
Low Cost Grand Canyon Run, Chuck Carpenter	XV, 3, 15
Mexican Rivers are Really Wild, Bob Burleson	XV, 1, 24
The Moose River of New York, David Binger	XIV, 3, 12
The Music of the River, Doris Gray	XIV, 4, 13
The New River of West Virginia, Gerhard Mueller	XIV, 2, 32
They Went Nottaway	XI, 3, 27
100 Years Ago This Summer: Powell's Great Adventure	XIV, 4, 4
Rediscovery of New Hampshire's Bristol Gorge, Jim Sindelar	XV, 3, 14
River Guide: The Bois Brule, Oz Hawksley	XII, 1, 39
River-Touring with the Peace Corps, Scott Shulte	XIII, 3, 14
The Roaring Mattawin, George Sears	XIII, 1, 4
Rouge River Roughhouse, Herbert May	XII, 1, 30
Running Rivers in Costa Rica, Gerald Meral	XV, 2, 4
Running the Rio Grande, Bob Burleson	XI, 3, 3
Running the Rio Grande (II), Bob Burleson	XI, 4, 28
Snake River, Walter Blank	XIII, 2, 28
South Fork of the Cumberland, John Bombay	XII, 2, 10
Survival in the Wilderness, Cecil Wilkins	XI, 4, 16
Tales from the Wilderness of Northern Canada, J. M. Vanderleck	XI, 4, 14
Testing Quechee Gorge, Jay Evans	XII, 1, 3
Thunder on the Mulberry, Dean Norman	XI, 3, 10
Touring Western White Water, Margie Arighi	XV, 3, 5
The Tuolumne River of California, Robert Hackamack	XV, 4, 22
The Upper Stanislaus Gorge, Mary Ellen Whitmore	XV, 3, 4
The Vermilion in Winter, Carl Bennett	XV, 1, 15
Weather Bureau Helps You Read Rivers	XV, 2, 29
We Run The Peshtigo, Carl Bennett	XIV, 4, 7
Wilderness River Touring, John Lentz	XIV, 3, 3
The Wild Middle American, Charles Martin	XV, 4, 2
The Wonderful First Time on Whitewater, Carl Bennett	XV, 2, 14
Safety	
Maximum Flotation for Safety, Andres Peekna	XIII, 3, 31
Car Top Carriers, Andres Peekna	XIII, 4, 13
Helmets for Whitewater Canoeing, Eric Jacobson	XIII, 1, 10
Hypothermia (The effects of cold water), Jay Evans	XII, 2, 14
I Don't Like to Wear a Lifejacket, M. Hoad	XV, 2, 28
Organize for Safety: River Bank Signs, Vern Rupp	XIII, 3, 35
Rescuing an Overturned Kayak by Two Kayaks, John Young	XIV, 2, 28
Review Safety Codes, Ed Alexander	XV, 2, 30
River Tragedies, Peter Whitney	XIII, 3, 33
Teaching and Learning, Bill Waters	XIII, 4, 31
Safety Is Thinking Ahead-Loose-Live-Adventure	XV, 3, 22
Survival in the Wilderness, Cecil Wilkins	XI, 4, 16
Survival: The Will to Live, A. F. Davidson	XII, 1, 13
Use of Standard Warning Signs in River Guides, Vern Rupp	XIV, 1, 28
Technique	
Eskimo Kayakers of King Island, John Heath	XIII, 4, 7
First Eastern Slalom Clinic, Dave Binger	XII, 1, 22
The Fish-Pole Slalom Gate, Jay Evans	XIV, 2, 16
Getting Beginners Started, Liz Hull	XV, 4, 4
Indoor Training: Key to Competitive Success	XI, 3, 15
A K-2 for Training Novices, Mel Schneller	XV, 3, 21
Pool Training Techniques, Jay Evans	XV, 4, 26
Precocious Paddlers (several)	XIV, 1, 3
Rapid River Race Clinic, John Kauffmann	XV, 2, 20
Rescuing an Overturned Kayak by Two Kayaks, John Young	XIV, 2, 28
A Stiff Program of Slalom Training, Dave Kurtz	XII, 1, 32
Teaching the Put-Across Roll, Bill Waters	XV, 2, 10
A Two-Second Roll, Jay Evans	XI, 4, 22
Wilderness River Touring, John Lentz	XIV, 3, 3



**Iliad announces . . .
the engineered kayak paddle.**

CONCEPT

Iliad is now producing a lightweight paddle of superior strength that is capable of unparalleled performance. High-strength materials and modern technology, combined with a realistic understanding of the requirements of the serious boater, have made possible a significant advance over previous designs.

All boaters, whether paddling the heavy waters of the West or the busy waters of the East, will appreciate the Iliad paddle's large blade area when executing crucial braces or power strokes. And the blade's light weight affords at least a one-third reduction in the moment of inertia, when compared to paddles of similar length — providing the boater with a more effective power stroke and a quicker return with less effort.

CONSTRUCTION

Iliad paddles are constructed of high-density fiber glass and an epoxy resin of high molecular weight and exceptional strength. These materials are pressure molded to precise limits, resulting in a glass/resin ratio that has been experimentally determined to give optimum impact resistance. The resin is uncontaminated by fillers or thixotropes, and only enough pigment is added to the semi-transparent blades to assure good visibility. The aluminum shafts are custom drawn by Alcoa and are reinforced for additional strength and a comfortable grip. Superior bond between shaft and blade is achieved through a proprietary process of etching and surface treatment.

SPECIFICATIONS

Blade dimensions

Width: 9 in. (23 cm.)

Length: 22 in. (56 cm.)

Area: Approx. 162 sq. in.
(1050 sq. cm.)

Thickness: .063 in. (.16 cm.)

Shaft diameter: 1 1/4 in. (3.3 cm.)

Color

Shaft: Red, blue, yellow

Blade: Semi-transparent blue

Stock lengths

78 in. (198 cm.)

80 in. (203 cm.)

82 in. (208 cm.)

84 in. (213 cm.)

86 in. (218 cm.)

Other lengths available on special order and at additional cost of \$2.

Weight

82-in. paddle: 2.8 lbs. (1285 gr.)

Price: \$28, plus shipping

ILIAD inc 168 Circuit Street, Norwell, Massachusetts 02061

Sales and distribution: Sumner P. Bennett, 582 Franklin Street,
Cambridge, Massachusetts 02139



Dan and Harry Baxter, 1st place (C-2) 1971 Open Canoe Slalom Championships, Dead River, Maine.
Photo by Bruce A. McMillan

1971 NATIONAL WHITEWATER OPEN CANOE CHAMPIONSHIPS

The second National Whitewater Open Canoe Championships, sanctioned by the A.C.A. and the U.S.C.A., were held on the Dead River in August, 1971. One hundred five open canoes competed for eight national titles in both slalom and downriver, while 63 covered boats competed in parallel events. The two-day race weekend in Maine's Flagstaff-Sugarloaf-Forks area drew representatives from 14 states and Canada, and established whitewater open canoe racing as a national sport. The

fastest time of 3 hours and 5 minutes for the 22-mile downriver course was in a 20-foot canoe of traditional design and construction. The course included flat water, a portage and 16 miles of near continuous Class II and III rapids, and was a true test of canoeing skill and design. Further information about this type of canoe racing may be obtained from the A.C.A. National Standing Committee for Whitewater Open Canoe Racing, c/o Wm. Stearns, Box 121, Stillwater, Maine, 04489.

Championship Downriver Results:

C-1	
1. Jim Henry, Vermont	3:35:21
2. Jim Martin, Maine	3:35:29
3. Ron Leonard, Maine	3:42:43

C-2 Long	
1. Buzz Adams/Scott Adams, Maine	3:05:13
2. Victor Wolmer/Herb Burnham, Conn.	3:08:54
3. Matt Waddle/Robert Waddle, Maine	3:13:32

C-2 Short	
1. Monte Smith/Leon Wiggin, N. Y.	3:07:01
2. Peter McMullen, Mass./ James McMullen, Maine	3:24:49
3. Jim Nesbitt/Tim Henderson, Maine	3:26:22

Championship Slalom Results:

C-1	
1. Jim Martin, Maine	347.7
2. Jim McColl, Ontario	366.1
3. John Tompkins, New York	552.9

C-2	
1. Dan Baxter/Harry Baxter, Maine	307.3
2. Peter Wilson/John Wilson, N. H.	317.2
3. Monte Smith/Leon Wiggin, N. Y.	352.8

Non-Championship Downriver Results:

C-2 Family	
1. Sam Hixon/Ed Hixon, Vermont	3:36:20

K-1 Long	
1. John McColl, Ontario	3:14:36

K-1 Woman	
1. Kay Henry, Vermont	3:58:45

Non-Championship Slalom Results:

K-1 Junior	
1. David Wolmer, Conn.	333.5

CC-2	
1. Victor Wolmer/Herb Burnham, Conn.	446.9

CC-1	
1. John Berry, Vermont	478.0

C-2 Mixed	
1. Fern Stearns/Bill Stearns, Maine	3:17:15
2. Karen Gebe/Barry Bryant, N. H.	3:19:45
3. Beth Sargent/Don Fletcher, Maine	3:20:32

C-2 Medium	
1. Dan Baxter/Harry Baxter, Maine	3:07:41
2. Steve Lotz/Peter Smith, Vermont	3:12:19
3. Mike Beebe/Sandy Enequess, N. H.	3:31:18

C-2 Mixed	
1. Fern Stearns/Bill Stearns, Maine	416.4
2. Martha Baxter/Harry Baxter, Maine	517.4
3. Karen Gebe/Barry Bryant, N. H.	575.1

L-1 Short	
1. Penn Estabrook, Mass.	3:20:47

CC-1	
1. John Berry, Vermont	3:39:13

C-2 Woman	
1. Carol Beers/Suzanne Corkin, Mass.	3:55:48

K-1 Woman	
1. Linda Harrison, Delaware	520.0

C-2 Family	
1. John Moulton/Albert Moulton, N. M.	587.4

K-1	
1. Mark Pallovitch, Mass.	233.5

The greatest river runners now carry a new sign!

GRUMMAN

STILL the strongest aluminum
white-water shoe keels made

STILL T-6 tempered aluminum

STILL built with extra ribs for
extra strength

STILL easy to maneuver in
wild water—holds a course
in quiet water.



Send for **FREE** new catalog.

Grumman Boats

Marathon, N. Y. 13803

I DIG HAIR — BIG, NOT LONG

By Dr. Walt Blackadar, P.O. Box 1110, Salmon, Idaho 83467

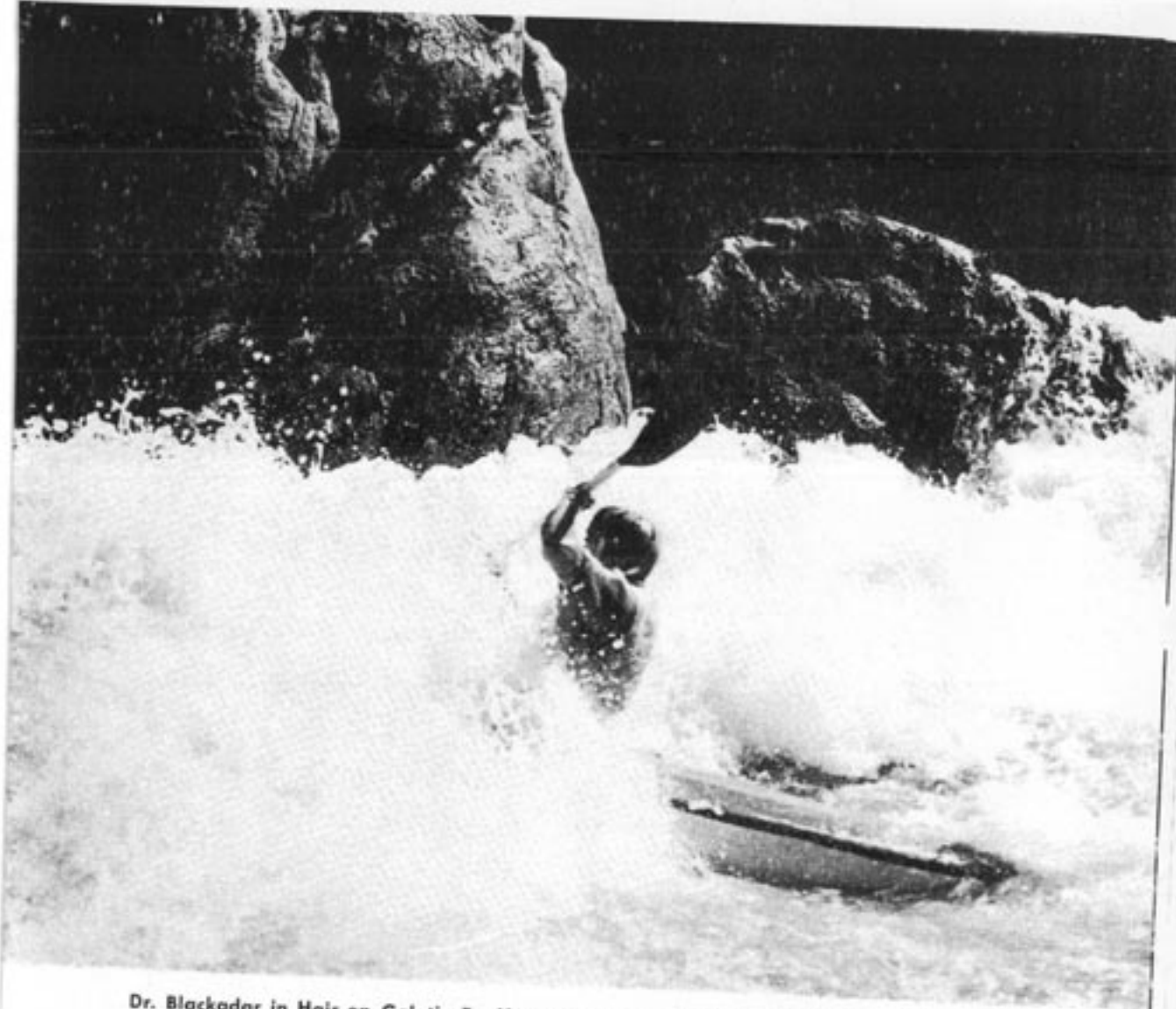
Paddling Hair need not be nearly as exhausting as many boaters make it. We all started paddling our first big water with the shout "paddle hard — paddle!" in our ears. Many of our best boaters have never been able to forget this philosophy even after they no longer needed it for reassurance. Actually the charge technique is sometimes the cause of upsets in big water. My motto is quite the antithesis, "When in Hair relax and keep your paddle high and dry."

Most of us have graduated to white-water via open canoes, and we soon learned in these fragile craft to back paddle and let the boat climb the waves. A crashing onslaught by the boater soon brought a full boat and capsize. A kayak (K-1) under forward power, going faster than the oncoming wave, has no chance to rise and ride over the challenge but rather cuts through and becomes unstable. A craft floating at the speed of the wave is very stable until it reaches the brink and then tends to get flipped back from the crest. Thus a boater can relax, almost go to sleep, even in huge hair, until his boat reaches the summit of each wave. At that instant a brief but definite downstream feint or if necessary stroke/brace combination prevents the expected upstream flip and lets one again relax for a couple of seconds until the next crest is reached. This feint is actually a bluff rather than a stroke, and usually never hits the water; however it does shift the body weight, and if the wave has been read properly, nothing more is required, even for a big wave. If the feint proves insufficient, it is then continued on into a stroke or brace to which one then commits himself as much as necessary.

I frequently watch kayakers fight their boats to maintain a bow-downstream approach in Hair, and I am sure that most of them who watch my nonchalant attitude feel that it is pure showmanship to enter sideways or

backwards. This is not always true; in reverse it is possible to lie back on the rear deck and shift one's weight way back and one's arms easily reach almost to the stern. Once immersed in a wave on a high brace, it is easy to hold on for some time until the lightened bow climbs over the wave. The stern thus becomes a sea anchor, pulling the kayak to safety. Sideways is stable if on hitting a cresting wave you fall downstream and catch a high brace through the wave, pulling the boat over the top before righting your body. If you really commit yourself on the brace, it is impossible to flip upstream no matter how violent the wave.

This opens a new approach to big-water kayaking. Forget the angulation of one's boat, relax until reaching the crest of a wave, and look for danger. This latter adage is the single most important aspect of staying alive in Hair. Read the water at a glance, react only if needed. Don't focus your attention all over the river but concentrate on the second or third wave directly ahead just as you crest, occasionally glancing farther downriver to check your general position relative to what is coming. In big water uniform waves are your safety, and breaks in the rhythm suggest danger. All mounds with no wave showing below are potentially dangerous; each flat pancake is a warning of the hole directly upstream. At first one fears crashing down huge water in big waves, but it soon becomes apparent that one can usually avoid those yawning holes with only one or two strokes if floating with the water and staying in the waves. If your boat is sideways when you get to the very brink of disaster, you don't have to slop into it! You're already pointing to safety, and a single forward or backward stroke often allows you to circle the rock or hole. If floating backwards, you are in the best possible position to avoid trouble because you are perfectly set up for an upstream ferry to either side



Dr. Blackadar in Hair on Galatin R., Mont. Photo by James Henry, Waitsfield, Vt.

to safety. As you become more skilled in this relaxed approach, you will find yourself riding the waves more and more with your hips, keeping your paddle high, similar to a tight-rope walker with a long pole. It helps to maintain your balance and serves as an ever-ready wand to tap ever so lightly on a brace when needed to maintain stability. Watch the wave that is hitting you and reach your paddle over and through this wave so as to tap the downstream face. Then, if the wave proves more violent than expected, the tap becomes a grab, which is used to pull the boat through. A wave coming from the side, rebounding off a cliff or a rock, is treated similarly by leaning into the wave, throwing the paddle over the crest and into the back side just as the wave crashes on you.

I would emphasize the necessity of

an infallible roll, first learned in flat water and then transferred to Hair and eventually to rolling in holes on purpose, thus technically and psychologically steeling yourself to the big Hair rolls. When practicing, forget the usual flip in roll position; instead concentrate on flipping in various inconvenient positions so that you can learn to get organized under water. Remember to practice a broken-paddle roll in case you end up with only half a paddle. I have never felt there was any place for the layout (put-across) type roll in big water and would concentrate on developing an infallible screw roll. Any roll that requires a change in hand positioning is certainly slower, and carries a higher risk of losing your paddle while trying to get organized. However a dependable roll is far more important than a fast one. When you flip, take

enough time to get everything right before your first try and then come up every time.

I put the paddle in position alongside my boat, slide my rear hand back to the inactive blade, and wait until the blade breaks water before I start up. In huge waves, I find that my paddle won't break the surface until I reach the crest of a wave and an immediate roll brings me up in time to get stable before the next summit.

Next to roll practice in big water, I emphasize hole practice. Start small and work up but eventually bite off holes you cannot get out of by any technique except to swim. While in holes I follow and concur with the excellent article by Jim Sindelar and Walt Harvest which was printed in this magazine about a year ago (spring 1971). My technique in essence is as follows: First, get stable on a downstream brace then try to paddle forward or back and haul the kayak over and out, but do not do the same thing over ten seconds. Change to something else before you get too tired. One helpful trick, when all else fails, is to try to get the boat perpendicular to the hole by pulling the bow up or downstream. Once lined up, lunge the upstream end into the apex of the hole and thus into the downstream water. This will usually result in an end-over-end and a prompt exit from a nasty hole. Lastly, when all else has failed, drop in, keep trying something different upside down with your paddle as deep as possible. Also as part of this technique, remember to save a little energy and roll up even though you know you are still in the hole and look around, you will usually remember something that you forgot to do. Note that it is sometimes remarkably easy to roll up in that squirrely water. Try it! If everything else fails, then do a wet exit and go deep but keep your life jacket on. I have never felt that the buoyancy of a life jacket meant anything in a hole. When you are able to join the downstream water, you will be pushed out. Also should you by any chance become unconscious, you have an excellent chance of resuscitation when picked up within five minutes

floating in your jacket, and it will be impossible to find your body in that length of time if it is drifting deep without a jacket. Note that the first boater to reach an unconscious swimmer should swim or float alongside him while immediately rendering mouth to mouth resuscitation. The quicker those first few breaths can be given, the greater the chance of revival.

While I emphasize playing in holes to become thoroughly acquainted with the hole technique, actually while paddling Hair, one should never need to call upon this reservoir of tricks. If a mistake is made in reading the water and suddenly one crests over the last wave in a series and stares into a flat which rapidly becomes a boiling hole, it is too late to avoid it! So charge! Go into high gear at the first sign of your error. Stroke hard on top and if possible on the way down, then reach far forward into the soup and hit it with as many strokes as possible and as hard as you possibly can. If you follow my advice and the hole is big, you will probably flip, but hopefully downstream of the hole. If you do flip, the temptation is to try a quick roll, but poorly organized rolls in the soup of a hole have a notoriously low success ratio for most people. Better, unless there is something horrible directly downstream, is to **KEEP PULLING ON THE POWER STROKE UNDER WATER** until the turbulence subsides—then roll up. Using this approach, your chances of getting out on this first try are greatly increased, since you never let up on the power, and your body in the underlying fast jet helps pull you on through. However if you don't make it out and are hauled back into the hole, then shift into the technique that I have just outlined and get stable on a downstream brace and start trying one thing and then another.

If you plan to paddle big water, you must use a big life jacket because swims can easily become disastrous. Thus forget about the life jackets with ten to fifteen-pound flotation, and secure the Grand Canyon type vests which have thirty-three pounds of buoyancy. These are easy to paddle in, do not hinder a roll, and it becomes

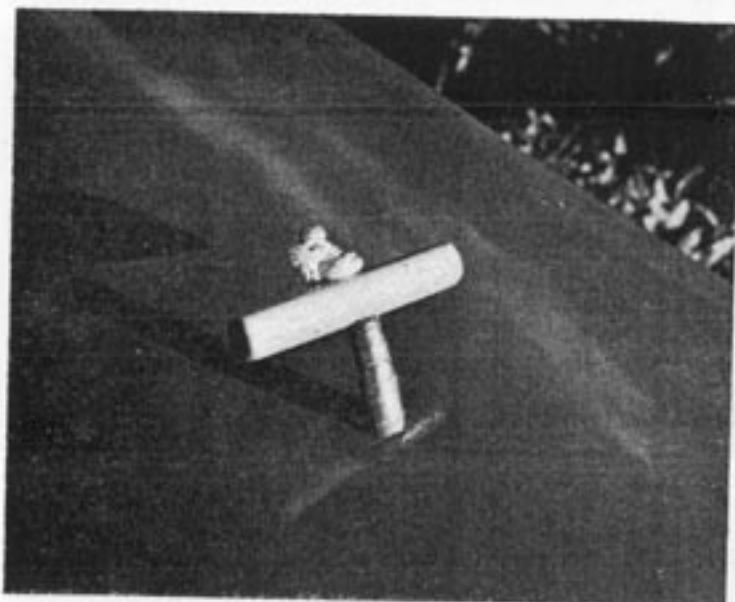
much easier to relax, knowing that a swim is possible as a last resort.

We equip our kayaks with a handle* one-third of the way back on the rear deck, which is made by placing a block of wood on the inside of the deck and glassing it well in place before drilling a quarter-inch hole for a rope through the deck and block. A wood handle, much like the old fashioned outboard motor starting rope handle, on a two-inch rope is then attached and allows the boater to take a swimmer through nasty water with ease. Without this handle it is necessary for the swimmer to cling to the boater's cockpit which is a very unstable situation, or to cling to the stern grab loop of the boat. In really big water, the ends of a kayak whip violently in the waves, and the swimmer could easily suffer a broken jaw unless the boat is turned loose. Several injuries have in fact resulted from this. However with the swimmer clinging to the handle and with his other arm over the stern of the boat, he is firmly anchored to the boat and no bruising will result. Should the boater flip, the swimmer automatically lets the boat twist around under his arm and stays up even though clinging with one hand to the now under water handle. If the boater rolls up on the same side he went in on, both rescuer and rescued will be equally happy with the result.

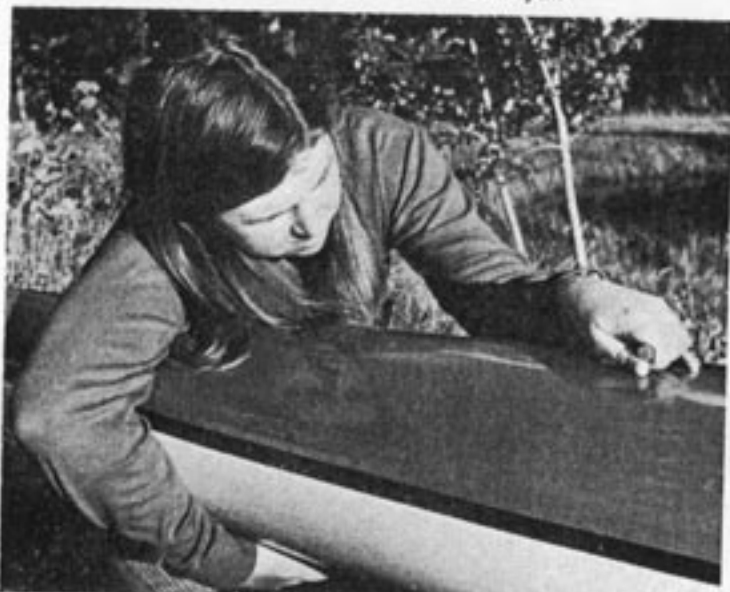
My views regarding paddles are not yet firmly entrenched in my mind, and I hesitate to give advice. Certainly I can see the advantage and do use a heavily spooned blade in ordinary paddling. In Hair however, you can't afford a paddle that might trip you up, and I personally use a big unspooned blade. The bigger the water the bigger the paddle—you're not using it for propulsion, only for a brace. Whichever type you use, a spare paddle is essential.

I hope that some of these ideas will prove helpful in polishing up your big water technique—remember that when

*This rescue handle was designed in 1970 by Dr. Blackadar and Jim Henry, who designs and builds canoes, kayaks and paddles under the name Mad River Canoe, Waitsfield, Vt.



Above: Rescue handle affixed to kayak



Above: Kay Henry demonstrating proper position: grab the handle with one hand, wrap the other around the hull so that the rider moves up and down with the boat he is riding on. Below: Jim Henry bringing in Bill Maden (KCCNY) on the Locksa R., Idaho, August, 1970.



the Hair gets huge, don't fight the water any more than absolutely necessary. Try to relax, riding the waves with your hips and keeping your paddle high, ever ready for a brace. As we say up here in Idaho, enjoy the ride. You're going HOME.

COMMENTS *and* ANALYSIS

By Jim Sindelar

This article gives an excellent description of what we might call "riding light," or a "soft" technique. This technique has not received much attention, primarily we suspect, because it does not win races. Nevertheless, we feel it is definitely an expert's technique—a goal to strive for rather than something you just go out and do the first time, because it requires nearly perfect water reading ability, confidence, and the experience and quick reactions to change your plans on very short notice. If you guess wrong about the minimum amount of effort it takes to pull through a wave, you will find yourself surfing backwards on it; and if the wave is a diagonal one, you can easily get whisked

10 or 15 feet off to one side, where you had no intention in the world of going. To the uninitiated, these are unnerving experiences. Also, if you do happen to HIT a bad hole by mistake while drifting sideways with no headspeed, you are really a sitting duck, with almost no chance to break through. As you proceed down the river, you will have to move from side to side to avoid rocks and holes and pick the best route. If your long-term river reading and planning are good enough, a stroke or two may suffice, but if not, you will definitely have to point the boat to one side and turn on the power from time to time in order to survive. And if you are pointed some direction other than ahead, it will definitely take longer to move to one side than to the other — again emphasizing the fact that you must be pretty certain about what is coming up to get away with it.

For those who are not as familiar with big water, we might recommend a somewhat different technique to start out with: generally try to maintain a downstream attitude by moderate but definite forward paddling. Each stroke

IT'S TIME TO RENEW, NOW . . . DON'T WAIT!

It's time to renew your **American Whitewater** membership and subscription for 1972, UNLESS, you have already renewed or paid your membership/subscription in advance. (In which case please ignore the enclosed remittance notice.) You'll want Volume 17, Issue No. 1, Spring, 1972 as soon as it's off the press as well as Summer, Fall and Winter of 1972. So please, make out your check to AMERICAN WHITEWATER and mail today.

NEW MEMBER/SUBSCRIBERS

New membership/subscriptions start with issue No. 1, the Spring issue of each year. For example, if you join in October you will receive the Spring, Summer and Autumn issue right off with the Winter issue to follow. See the application form on the inside back cover for information about starting a subscription with the Fall or Winter issue.

CHANGE OF ADDRESS

If you **change your address** notify American Whitewater, Box 1584, San Bruno, Calif. 94066. The U. S. Post Office will not longer forward your Journal.

BACK ISSUE PURCHASES

Order back issues by Volume and Issue Number or by Date. Charge for Back Issues are \$1.00 each (foreign \$1.15); 4 for \$3.00 (\$3.50 foreign); 6 for \$4.00 (\$4.50 foreign).

should be about half way between a power stroke and a high brace, enabling you to lean on the stroke for three point stability. This is done by keeping your paddle blade angle at about 45 degrees relative to the surface of the water as you pull on it. You should plan these strokes far enough in advance so that you always have one ready on the correct side to reach over and dig into the wave that hits you. In this way you will always be leaning out on the tripod-like stability of the brace, will always have some headspeed (just in case), will always have the best visibility so as to see what is coming as quickly as possible, and always have the option of turning quickly to either side if need be. The back brace or low brace (done with the non-power face of the paddle) is generally a bad choice (except for backferries), since when you commit yourself on a backbrace, the paddle side of the boat will be slowed down, and soon your brace will have become an UPSTREAM low brace. You will then likely get a chance to practice your BIG WATER ROLL. The high brace/power stroke combination, by contrast, tends to turn the boat the other way, putting your stroke downstream of the boat.

As your confidence and water reading ability grow, gradually relax more, and make it a challenge to do as little work as possible. Drift through a few waves sideways, and as you see that nothing serious happens, you will be encouraged to let it happen more often. It won't happen overnight, but as you gain more experience, you will find that much of the work you had been doing will no longer be necessary.

This soft technique can also be used in a C-1, but the angulation of the boat is somewhat more critical, unless you are really good with an upstream brace. Therefore you tend to drift mostly in one direction, limiting your angulation so that your paddle generally stays in the two downstream quadrants. And it might also be used somewhat in a C-2, but in really big water, it would take nearly extrasensory coordination between partners to cope with the instantaneous decisions sometimes necessary,

Red Ridge College of River Canoeing

Buck Ridge Ski Club and the Red Cross of Delaware Valley will again sponsor the Red Ridge College of River Canoeing on the weekend of April 28, 29, 30, 1972. This is an intensive course to teach people to teach river canoeing. The aim is to spread improvements in technique and safety by teaching a few members of many clubs who in turn can teach others in their own groups. All participants must have had Red Cross basic canoeing or its equivalent. The school will be run on the Nescopeck Creek near Hazleton, Pennsylvania. Different sections of the stream will provide a range of whitewater for all levels of experience.

Most instruction will be in open canoes, but a limited number of places will be available for slalom canoes and kayaks.

Deadline for applications is April 5, 1972. For information and applications write:

LEWIS HOPKINS

4630 Chester Ave., Philadelphia, Pa. 19143

and, it would take at least one partner who didn't mind having his paddle upstream!

The technique of plunging the boat more deeply into a hole in order to escape is a good one that was overlooked in our Souse Hole article that appeared previously. Note that lining the boat up perpendicular to the hole is no mean feat, and may in fact not always be possible. Also, each hole has its own personality, and depending on the shape of the hole, and the distance beneath the surface of the deep jet, the boat may not always end-over-end when plunged into the soup. If the jet is deep the upward buoyant pressure may shoot the boat out hard up and backwards before the jet really hits the bow. Or, even if you can't get much of a lunge, it might be enough to set up the oscillations which could enable you to rock the boat out by reinforcing them a la Walt Harvest. But in any case, the lunge will likely break up a stalemate and perhaps get you out.

With this article, we think Dr. B. has made a valuable contribution to the technical boating literature. After all, what could be more appropriate than for a recreational boater to relax, enjoy the river, and save his energy for the songs, wine, and campfire on the bank of one of those great western rivers? Idaho, here we come!

BURNT RANCH RUN

By Dick Schwind

Mel in his gay "Das Schnellerwagen" and Mike in his well-worn truck pulled off at Cedar Flat to join us. Both were loaded with boats in preparation for the big Labor Day weekend of kayaking. For some years Mel had been making Memorial and Labor Day trips to the Lower Trinity. Our plans for this very special trip on the day before the weekend shaped up rapidly—lightness was the word—no spare paddle, but plenty of rope. We made an effort not to attract the attention of the passing public and right at 10 a.m., carried to the river and launched.

Their boats seemed like feathers compared to mine, but I was carrying some extra insurance. In a long-unused box of equipment in the attic I had found a small, well-selected collection of pitons on a carabiner, which had been assembled a year or so before just in case the opportunity came up for this run. These, my piton hammer, and a pair of lightweight climbing boots were in my wet bag; I'd never taken such precautions before, though had joked about it on occasion. We might want to put up a fixed line for a traverse on steep rock.

The 8½ miles ahead was known as the Burnt Ranch Gorge section of the river, a "no-no" whose dangers the locals would go out of their way to warn boaters about. In spite of its reputation and my precautions, we were approaching the run as a day's outing, admittedly tougher than the usual, but definitely not as an expedition.

As we glided down the very first mile to China Gulch, I had a chance to contemplate. Mel was an explorer of boating technique, designs, construction, and men's minds. He was a keen observer, the master at teaching boating, and self-made philosopher. Like hundreds of other boaters, I felt as if he were a close friend, though we had never spent more than a few hours together—that was his knack. He was not a "river run bagger" and had not been on many standard river runs much

closer to home. However, all his trips past the Gorge had stirred that universal urge to explore. He had mentioned it to me a year ago: a cautious trip through the Gorge in low water with expectation of plenty of portaging. The estimated 350 cfs at the put-in was higher than usual for early September, even after a wet spring, but it would be okay.

"You know," Mel commented, "we had really planned to run this this summer, but first I was involved, then Bert (Wythe) went East on vacation. I talked to him on the phone and he was really upset that he was going to miss this."

I had called Mel a few days before to suggest that this would be a good opportunity for the run. He agreed, and said he would try to interest Mike, his son, in joining us. Mike was a superior boater to us and would no doubt do most of the leading. In spite of having just read that brilliant novel, "Deliverance," I wasn't the least bit nervous about the run. In the first long rapid our teamwork was shaky, but we quickly worked out a set of paddle signals, decided on our approach and I began to feel good about our team.

After the left turn a half mile below the County Dump at China Slide we saw Box Canyon. At its entrance was our first portage. We decided on having Mike portage it quickly and boat on to explore around the corner, then boat back. To portage a rapid in the canyon would require a lot of time and long-lost skill behind those pitons—the vertical rock walls plunged directly into the water. The portage would have to be up a long way and then a half mile to the other end. It was a big break that it was okay to run.

A combination of several Class 3 and 4 rapids and about 3 portages brought us to the Burnt Ranch Falls section. It is not a falls, but a series of 4 big drops spaced out with some runnable rapids between the first two. Reg Lake had hiked down from the Burnt Ranch

USNFS campground to join us and the many fishermen. After portaging the first rapid Mel took a short swim just above No. 2. Mike ran the second drop. It consisted of a Class 4 entry then a 7 ft. narrow clean-looking chute alongside a house-sized boulder and into crazy turbulence at the bottom. We guessed what it would do to him, but all got a surprise. Some uncle of the Loch Ness Monster must live in that hole; he simply pulled the boat in so far that Mike's bright blue helmet was barely visible, then popped his spray sheet and flipped him over.

With two strenuous portages after lunch we cleared the Falls area. The 3.6 miles covered in 3½ hours didn't mean much; it was the elevation drop that was important. We had covered half of the 380 ft. The 1.4 miles to the New River was exceptionally strenuous for all of us; there were 4 or 5 portages before the river shifted back to Class 4. Only one more portage remained, Gray's Falls, which came in about a mile. The fishermen were having particularly good luck there at hooking big salmon, so paid little attention to us nuts in boats.

The river immediately became easier. We saw the end of the canyon walls approaching and began to relax as we finished out the last couple miles.

"You know," said Mel, "this is going to be the high water mark of my boating career. I don't really expect to explore another river; I'll leave that to you younger guys. This is the one I wanted to do."

We were all tired. Mike and I had helped Mel as much as he would allow; he had felt uncomfortable about being helped. That was opposite to the way he lived.

The Hawkins Bar bridge appeared around the final corner. It was 5 p.m. Fishermen asked us about our run. We were modest, but proud of our accomplishment. We would be in camp shortly to greet the arriving boaters. Mel and I pulled out under the bridge.

Three minutes later, a sudden unscheduled trip of a different nature began. As Mike scouted the lower take-out a quarter mile away and I was draining water out of my leaky boat,

Mel collapsed. "Mel, what's wrong? Just a minute, you'll be okay!" He doesn't hear me. Not breathing. No pulse, I don't think. Pound on the chest. Artificial respiration. What's plugging the air passage? There, now it works! No response, but keep it up. Mike, Jan, Reg arrive. Ambulance. Resuscitator. Long ride.

"I'm sorry, . . . he's dead."

(From *RTS News Bulletin*, Sept. 1971, Sacramento, Calif.)

HAUTHAWAY KAYAKS

640 Boston Post Rd.

Weston, Mass. 02193

Slalom, Downriver, Touring and Junior Models

Surf Kayak, Lightweight Canoes

Paddles Spray Covers Life Vests Floatation

WHITEWATER BOOKS

Whitewater Sport by Peter Whitney, \$5.50 plus 25¢ postage; *Fundamentals of Kayaking* by Jay Evans, \$3.00; *The Exploration of the Colorado River*, Major Powell's diaries, \$4.75 plus 25¢ postage. Send order and check to AWA Guidebooks Committee, Ed Alexander, 6 Winslow Ave., East Brunswick, N. J. 08816

Lose or Ruin a Boat Lately?

Your Best Insurances!

HARVEST

Form-fitting flotation bags for Kayaks and Canoes made of tough, flexible, long-lasting 20-mil. Vinyl

K-1	3½ lbs.	4½ cu. ft.	\$11.54
C-1	5 lbs.	10 cu. ft.	\$12.54
C-2	7 lbs.	15 cu. ft.	\$16.50

Shipping \$1.25 per set in U.S. Check parcel post rates on large orders. 5% sales tax in Calif.

HARVEST ENTERPRISES

Phone (415) 538-7078

3976 East Ave. Hayward, CA 94542

WARM HANDS, WARM FEET

By Iris Sindelar

While winter is not the season when one is inclined to devote much thought or activity to boating (unless he is lucky enough to have access to a nice, warm pool), it is an ideal time to work on those items of equipment you never got around to last season, but which would have increased your enjoyment of the sport. High on this list, if you don't already have them, should be wetsuit socks and gloves. For a lot of boaters, spring boating means cold air, colder water, and coldest of all, hands and feet. Some gung-hoes don't seem to mind this, but I find it **much** easier to crawl into a boat from a snowbank when I know my hands will not become too numb to hold a paddle within a matter of seconds, and that I won't have to spend that painful hour or two after the trip thawing out my extremities. Wetsuit socks and gloves can be made quite easily and inexpensively, and they will **fit** you. I used scraps of $\frac{1}{8}$ -inch nylaprene (nylon on one side, but if you can get it with nylon on both sides, fine). You could probably get three or four pairs of each from a square yard of material with efficient placement of pattern pieces. Use at least four coats of wet suit glue on all seams for a good strong bond, in spite of what the directions on the can may say.

SOCKS:

This pattern is more complicated than some, but for use inside tennis shoes it is better than anything else we have seen, including the commercial ones. This is important, because we feel that for boaters, shoes should be considered a must. Several of our friends who wear only the wetsuit booties have had occasion to do considerable walking while on boating trips (scouting, rescue, broken boats, etc.). Their booties were generally ruined, and their feet didn't fare too well either.

For the sole pattern, trace around one foot on a piece of paper and add a triangular tab at the heel as pictured in Fig. 1. Make a mark between big

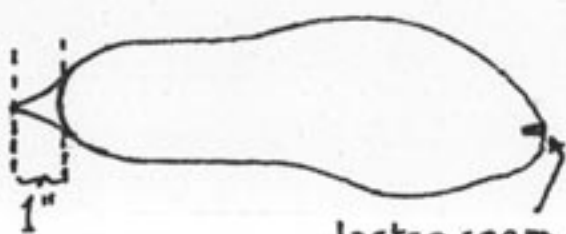


Fig. 1.

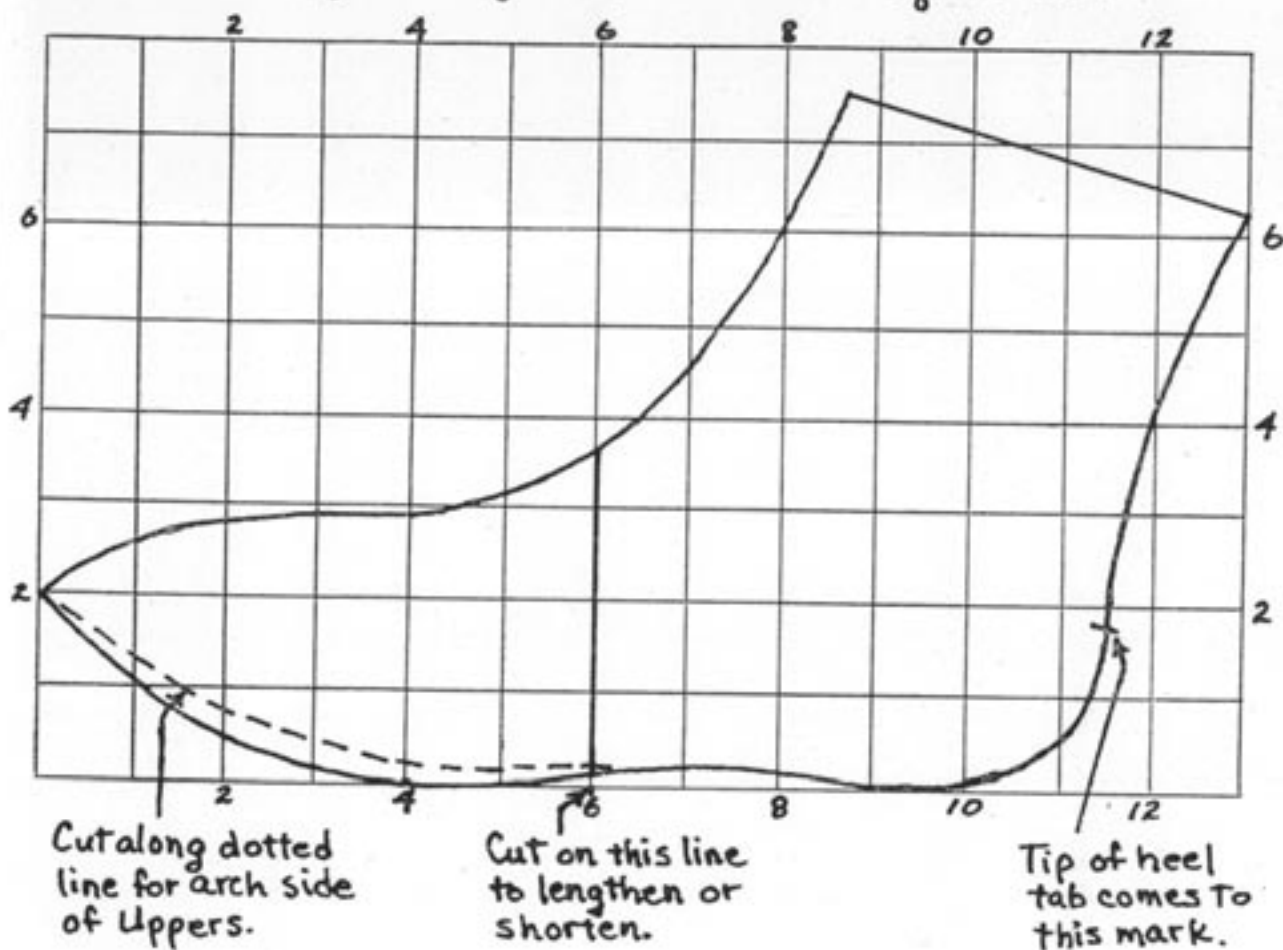
Instep seam meets sole at this point.

and next toe. For the uppers pattern, draw a grid to the proper scale (indicated in Fig. 2) and using it for a guide, draw the pattern. You will need a fairly large piece of paper for this pattern since the full-size grid will be 8 x 13 inches. Measure the sole pattern along the outside edge from toemark to point of heel-tab and compare it with the lower edge of the uppers pattern (from point of toe to mark on heel.) If alteration is necessary, cut the uppers pattern as indicated in Fig. 2 and either lengthen or shorten so that the measurements correspond. If your feet are much larger or smaller than the pattern (a men's size 10), you may have to add to or cut away the pattern along the top of the instep as well.

Chalk works very well to trace around the pattern pieces on the nylaprene. Note that the uppers pattern is really two patterns: untrimmed, it is for the **outer** half of the foot, and trimmed along the dotted line, it is for the inner, or arch side of the foot. Remember that you will be cutting **mirror images** of each pattern piece for the second foot, so after you trace one piece, flip the pattern over to trace the other. I made the soles of a double thickness, so that there was nylon on both sides and they would thus be more durable. If you decide to do this, trace four sole pieces: two rights and two lefts. For the uppers, trace the two (mirror image) pieces of the pattern for the outer sides of the foot, then fold or trim away the pattern along the dotted line (for the arch sides of the feet) and trace onto the nylaprene. Cut

Fig. 2. UPPERS PATTERN

Scale: each square on grid represents one square inch.



out the pieces — kitchen shears work well for this.

You need only a couple of coats of glue to bond together the two sole layers (nylon side out), and when you are sticking them together, bend the heel tab up as shown in Fig. 3. Mark (with chalk) the soles at the toe as you did the pattern; this is where the instep seam of the uppers will hit the sole. Also mark the heels of the uppers as shown in Fig. 2; this is where the point



Fig. 3. Stick glue-coated sole pieces together as far as heel tab, bend top layer of tab up, then bend up bottom layer and stick them together.

of the heel tab will come. Butt-join the uppers at the instep seams, using four or more coats of glue and allowing glue to dry between coats per directions. Now is a good time to alter the uppers if they are too wide at any point: put your foot on a level surface (floor) and mold the upper snugly over your foot. The bottom edge of the upper should come just to the floor. Trim off any excess.

Ready now to join uppers to soles. Nylon inside or out? If the nylon is on the inside, the socks are easier to get on and off. However, I put it on the outside as I felt the socks would thus be more durable, and the $\frac{1}{8}$ -inch nylaprene is so stretchy and pliable that getting them on and off has been no problem, especially if you dust a little

talcum powder inside before you put them on. But suit yourself. Put four or more coats of glue on the edges of the soles and uppers as above. The seam at the toe of the uppers should be positioned at the mark on the sole and you work back from here, making a smooth butt-joint. Be sure that the point of the heel tab will come to the marks on the uppers heel—if the edges don't quite match, a little stretching or easing along the edge of the uppers during the joining process will take care of it. Work the seams between your fingers to make sure that the bond is complete. Let the glue set overnight and there you are! They should fit well enough that a pair of tennis shoes a half-size larger than your usual size will go over them and this should make them last indefinitely.

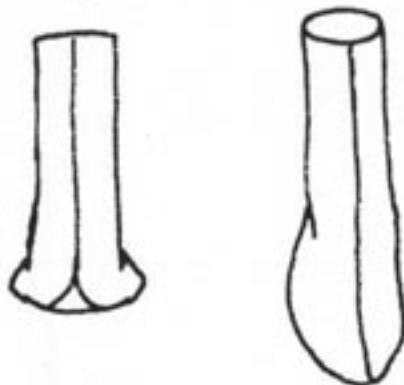


Fig. 4. Back and front view of finished wetsock.

MITTENS:

George Thomas (organizer of the annual Farmington River Races at Otis, Mass.) has developed a nice pattern for heavy (1/4-inch I think) wetsuit mittens, but he hasn't sent me the directions for them yet. However, the mittens I made from 1/8-inch nylaprene are very quick and easy, are warm enough for me, and give as good a grip on the paddle as bare hands do (and much better than you get with cold bare hands). Simply trace around your hand (fingers together) and up the wrist for three or more inches (see Fig. 5 for approximate angle of thumb). Each mitten will consist of a palm and a back, and the one pattern can serve for all four pieces of your pair of mittens. I cut both palms the same size as the



Fig. 5.

pattern (flip the pattern over for the second one), then cut the backs about 1/16-inch larger all around (again flip for the second one) to allow for the hands being curved around the paddle. Glue the palms to the backs in butt-joints, using four or more coats of glue. You'll have to stretch the palm edges a little when joining to make things come out even. Again, the 1/8-inch nylaprene is so stretchy that getting them on and off should be no problem, but if you're worried about this, you could make the wrists slightly wider. I have the nylon on the **inside** of the mittens as the neoprene side seems to grip the paddle better, but you can turn your mittens inside out if you wish, to see which way works best for you. Tip: put on your sprayskirt before you put on your mittens (although I **have** managed to get my nylaprene sprayskirt on and off while wearing my mittens!). Another tip: Guys, even if YOU think these items are sissy stuff, your wives, girl friends, sons and/or daughters will probably be **much** more willing to go along with you on those cold spring trips if they are properly outfitted with comfortable wetsuits, wetsocks and mittens. Just ask my husband!

CLASSIFIED ADVERTISING

College-Age Kayak and/or Canoe Instructors wanted in England and France for short or long periods between April-Oct., Write P.G.L., Adventures Ltd., Ross-on-Wye, Hfds., Great Britain.

Classified Ad Rates, Am. Whitewater Journal, 20¢ per word; send ad and check to Ad Mgr., H. Eble, 19 Oakvale Ave., Berkeley, Cal. 94705.

"ARIZONA FUN"

By Scott Holzhauser, Flagstaff, Arizona

For a river runner who lives in northern Arizona the phrase "go where the water is" is more poignant than usual and sometimes frustrating. You have two choices: the Colorado River, which you can run with permission from the superintendent of Grand Canyon National Park, or assorted mini-rivers which are occasionally wet. What follows is a description of some of my experiences with the latter.

Each spring I spend my weekends chasing ephemeral flood crests over the state during the spring runoff. Up-to-date information is essential. It is somewhat unsettling to arrive at the put-in point with all your gear for a two-day trip and find the river has jeep tracks all the way across it.

In Arizona the Verde, Little Colorado, Gila and Salt rivers offer possibilities. An excellent article on running the Gila appears in the March 1967 issue of Arizona Highways and describes the possibilities in a very interesting and entertaining way. The Salt River is the largest and meanest of the four and has been run frequently by people in the Phoenix area.

The Little Colorado

The Little Colorado River can be run in a couple of places. One scenic but not very exciting spot is to begin at Cameron, just upstream from the highway bridge, and take out seven river miles downstream, at the old Hopi trail crossing. This can be run successfully in a raft with as little as 300 c.f.s. in the river. A word of warning, though: the takeout point requires a pickup truck for access, and this is the last takeout point before you'd be plunging into the depths of the canyon. If you miss the spot, next stop: Phantom Ranch!

Another interesting trip on the Little Colorado is a twelve-mile stretch from Grand Falls to Black Falls. Grand Falls is a spectacular waterfall where the water tumbles down 180 feet in two stages. The canyon begins at the falls and extends for about ten miles downstream. The river channel is quite wide

and unless there is 1500 c.f.s. or more it can be a jolting trip. The water is nearly opaque; liquid mud is a better word. Water and all the rocks are brown. Spotting rocks takes some practice.

But the run is worth it. There are some good rapids, and side canyons to explore. When there is enough water, it is a fast trip. Seldom, however, is this the case. I have heard of no one else who has run this stretch, but it was my best trip of the 1968 season. This year the water never got high enough, so don't sit around Flagstaff expectantly waiting for the water and mud gods to fill the river up—try a rain dance.

The Verde Is Better

So much for the improbabilities of the Little Colorado River. The best possibilities in Northern Arizona are on the Verde River. The spring runoff comes early on the Verde as the watershed is nearly all below 7000 feet. March and April is the season. The Verde, at least, is wet all year, but not much. The spring runoff can swell the annual 200 c.f.s. to a violent, unpredictable torrent. This spring, 1969, the peak was about 4000 c.f.s. So by choosing your weekend carefully, you can get about any flow you want.

I have taken several trips on the Verde covering a 45-mile stretch from the U. S. 89A bridge to Verde Hot Springs. The scenery and the water change rapidly even in these few miles: each section is different.

From the bridge at Cottonwood to the first bridge at Camp Verde the river passes through the broadest part of the Verde valley. The shores are lined with cottonwoods (which the Salt River Project is busy cutting down) and many small ranches. A humorous article describing the hazards of this 17-mile stretch as seen by a self-confessed tenderfoot appeared in the January, 1969 issue of Desert Magazine. Fortunately, our experiences were somewhat different although little less inept. We started out in two craft, my

wife and I in our never-patched but well-used two-man raft, and my friend, whose vision is poor, and his wife, who had never been canoeing before, in their often-patched canoe. As I had forgotten my spare paddle, disaster was a foregone conclusion: the only unknown was when and where. The canoe had suffered a hernia in its more recent history, and had never fully recovered, having copious leaks in its midriff.

We started out with all the confidence of the ignorant. Disaster did not strike immediately—it always waits until we are a sufficient distance from the car. The preliminary mishap occurred a couple of miles down the river. We were shooting a small rapid between stretches of calm water. Nothing unusual except for a log in the middle, but with plenty of room on either side. The raft went by fine, but when the canoe approached, the paddlers reached simultaneous and opposite decisions about which side of the log to try. Each executed deft strokes to carry out his decision and soon each was on his chosen side of the log. Alas, the poor canoe. There is something topologically impossible about running a rapid this way, and soon the canoe was creaking and groaning around its tummy. It was saved only by a deft execution of the hop-out. For the rest of the trip we had several small artesian fountains playing continuously in the canoe.

Special Hazards

The hazards of the Verde are of a different genus than those of most rivers. Irrigation canals sidetrack the unwary, rusted hulks of ancient cars lurk like sleeping hippos, and just to be sporting, an occasional piece of barbed wire at the end of a rapid.

Ah yes, the barbed wire! We first saw it in a spot where the river narrowed, went under a tree and around a curve. There it was, right in the middle. No amount of emergency paddling or hollering at the wife could perturb our inexorable progress. Soon we found ourselves in what we later recognized as a humorous situation. I had both hands holding onto an 8-inch gash in the air chamber. The air was blue with commands to the co-pilot who was do-



ing her part by paddling us around in circles as hard as she could.

This comical situation was relieved when the canoe came along. Containing their mirth somewhat, they facetiously suggested we get out of the sinking raft into the 18-inch-deep water and proceed towards shore on foot. Crestfallen, we did as we were told and took stock of the situation. We weren't really too worried; it was only a couple of miles to the nearest road that paralleled the river. But we decided to continue and loaded the raft and two more people into the canoe, which fortunately was a big one.

The trip proceeded smoothly for a while. The water was low and so was the canoe; we left aluminum on a relatively large number of rocks. The miles went fast in the canoe. As we were plagued by the customary headwinds, it was obvious that the raft wouldn't have made the whole trip in one day. In the canoe we finished the trip easily . . . well, almost. The last curve before the Camp Verde bridge looked as if it

AMERICAN CANOEIST . . . The official magazine of the American Canoe Association. Its 28 pages, published 4 times a year, deal with all phases of canoeing and kayaking including canoe sailing. 1 yr. at \$2.50, 2 at \$4.00; Foreign: 1 yr. at \$3.00, 2 at \$4.00. Send check to 11914 Oxnard St., N. Hollywood, Calif. 91606.

Jewelry for Paddlers—pins, charms, tie tacks, etc., etc. from the ACA National Paddling Committee. Profits go to promote racing. For ordering information write NPC Jewelry, Rt. 1, Box 83, Buchanan, Mich. 49107

might be a little tricky, so we put the girls out.

That was the only thing we did right all day. The current swept us under a tree and suddenly I found myself alone in an upright but swamped canoe. As everyone knows it is difficult to maneuver a canoe with a ton of water in it with much agility. So I jumped out too and let the canoe maneuver me through the rapid instead. Everyone was soaked, including the girls who jumped in to retrieve the usual assortment of floating paraphernalia. We lost nothing except our savoir-faire and as it turned out we didn't need that spare paddle after all.

There are three bridges over the Verde near Camp Verde. From the first bridge to the second is a stretch of two miles. The water moves right along and there are no rapids of consequence. It is an excellent place for beginners in any conceivable type of craft. Even inner tubes, not merely shunned but completely ignored by the aficionados of the sport, would make the trip with just the proper amount of dunking. Be-

tween the second and third bridges lurks that common Verde obstacle, the irrigation dam. Most of this stretch is backed up with still water. Unless the river is very high, forget it.

Where the Action Is

It is below Camp Verde that the action begins. The best bet is to drive as far down the west side of the river as you can before putting in. This avoids a lot of slow water.

The Verde valley was once dammed by a large lava flow and a lake formed behind this natural dam. The lake was 35 miles long and 8 miles wide and during its existence built up a deposit of limestone on the bottom of the lake. This limestone, called the Verde formation, is a very soft rock and is not conducive to the formation of white water. But where the river cuts through the old lava dam, things are different. Here the channel narrows into a deep chute complete with waterfalls. Plenty of excitement for anyone.

Let me describe my own experiences on this stretch of the river. I made two trips last spring, at two very different

INFLATABLE BOATS UNLIMITED



We carry a large line of neoprene nylon rafts and boats from 7' to 37'. For information write:



RON SMITH
Inflatable Boats Unlimited
Box 21021
Salt Lake City, UT 84121

levels of water. The first trip was on March 8, before the runoff began. There were four of us in my six-man raft. I was pilot, my wife Pat the chief cook and bottle-washer, and Ken O'Dell and Bill Willis provided the motive power. It was COLD. Pat and I slept by the river the night before; Bill and Ken slept in Flagstaff and planned to meet us in the morning at the river. It was 4 below in Flagstaff that night and the trip started out on a happy note when Ken had to mooch jumper cables for his car at six in the morning.

Nevertheless, we got in the river in fine shape, although a little late. The river was at 650 c.f.s. that day, which we soon found out was too low. We must have hit every rock in Arizona in the course of one mile. I would say 800 c.f.s. is a reasonable minimum. As we floated down through the limestone the river was docile, except for one rapid. One rapid that sneaks up very fast. We all got wet there in some big waves and as it was still cold we weren't too happy about this. Then a long calm stretch followed where we caught ourselves saying things like "what a let-down if that turns out to be the only big water on the whole trip."

We needn't have worried. The river gods must have heard us, for they proceeded to alleviate that situation with dispatch. The next rapid was where the river entered the lava and we took a long hard look at it and ran it safely. We grew confident. At the end of a long curve to the left we entered a long, gradual rapid, which turned out to be not so gradual as we were soon looking up at a three-foot waterfall. Somehow, with very short warning, we had seen it and gotten over upright but with a surprising lack of finesse—in our desperate upstream maneuvering we had gotten turned around and went over stern first. It works! I recommend the method highly for all beginning rafters attempting three-foot waterfalls.

Worse to Come

As we sat there looking at each other wondering what to do for an encore to the comedy act, I realized Pat was failing to see the humor of the situation. She looked like she had seen a ghost.

At about this time an ominous roar downstream brought her out of it. We realized our encore would become a repeat performance with sideshow unless we got to shore in a hurry. The decision was instantaneous and unanimous; we made it to shore in what must have been record time, if records of that sort are ever kept. We had narrowly missed going over THE falls, all five feet of them.

During the stop we reconnoitered, dried off, emptied and repacked the raft, and ate. Suddenly we realized Pat had not spoken for fifteen minutes. She hadn't eaten a thing, a phenomenon entirely uncharacteristic of my wife, and was now apparently seeing a multiplicity of ghosts. After much soothing her first words were that she would walk the seven miles back to the car through the rattlesnakes (which weren't out yet) before she would ever go on that river again. She was returning to normal. We all gathered around the big driftwood fire to finish eating and dry out. Bill wanted to be completely dry before departing and put his shoes too close to the fire. He soon had to put them in the river again.

The worst of the trip was behind us but we didn't know it then. Pat had lost her water wings entirely and practically had to be roped and tied to the rest of the baggage when we started again. The rest of the trip was anticlimactic. We hit many rocks and had to make one other portage and line through three rapids where the water was too low.

We finished the fifteen-mile trip about 2 p.m. the second day and it was clouding over ominously. But the weather was good to us. It didn't start snowing until we started back to Flagstaff. By the time we got there, Flagstaff had gotten five inches of snow and we had trouble believing we had been on the river that weekend.

Bigger Water

Fools that we are, we did it again three weeks later. And what a trip! The weather was much warmer and the water was higher. In fact we were on the river the day it crested for the spring runoff at 3600 c.f.s. You could have counted the eddies on that 15-mile

American **WHITEWATER**

Sponsored by The American Whitewater Affiliation

WINTER, 1971

EXTRA FAT BONUS ISSUE

Vol. XVI, No. 4



The
American
Whitewater
Affiliation

Board of Directors
1969-1970

President

EDGAR ALEXANDER
6 Winslow Ave.
East Brunswick, N. J. 08816

ROBERT HARRIGAN
5113 Wehawken Rd.
Washington, D. C. 20016

BART HAUTHAWAY
640 Boston Post Rd.
Weston, Mass. 02193

1968-69

OSCAR HAWKSLEY
Route 5
Warrensburg, Mo. 64093

Secretary

HAROLD KIEHM
2019 Addison St.
Chicago, Ill. 60618

ROBERT McNAIR
32 Dartmouth Circle
Swarthmore, Pa. 19081

PETER D. WHITNEY
459 Sixty-sixth St.
Oakland, Calif. 94609

Treasurer

CHARLES SMITH
1760 Walnut St.
Berkeley, Calif. 94709



Contents

ARTICLES:

Early Happenings at Bull Falls	Grant Conway	111
The Big Debate	John Wilson	115
Physics of the Kayaker's Eskimo Roll ..	Jim Sindelar	117
Trouble on the Tuolumne	Carl Trost	120
The James Bay Project	Carl H. Williams	122
Trip Report, Boreas River	Dave Binger	124
I Dig Hair — Big Not Long	Dr. Walt Blackadar	132
Burnt Ranch Run	Dick Schwind	138
Warm Hands, Warm Feet	Iris Sindelar	140
Arizona Fun	Scott Holzhauser	143

DEPARTMENTS:

Letters	110	Pool Slalom	127
Guidebook	121	1971 Race Results III	128
Olympic Report	126	1971 Open Canoe	
Pre-Olympic Training		Championships	130
Camp	127	Canoeing Instruction	137
Film Available	127	Affiliates	148
Cumulative Index, 1966-70		Center Fold	

Editorial Chairman and Editor: Iris Sindelar, 264 East Side Dr., Concord, N. H. 03301

Editorial Committee: Ed Alexander, Dave Binger, O. K. Goodwin, Bob Alexander, Charles Smith, Henri Eble, Geo. Larsen

Business Manager: Charles Smith, 1760 Walnut St., Berkeley, Ca. 94709

Advertising Manager: Henri Eble, 19 Oakvale Ave., Berkeley, Cal. 94705

Production and Circulation Manager: Surfing Reporter: Geo. Larsen, Box 1584, San Bruno, Calif. 94066

Racing Editor: Bob Alexander, 6 Winslow Ave., East Brunswick, N. J. 08116

Safety Editor: O. K. Goodwin, 1240 Moyer Rd., Newport News, Va. 23602

How to Write to American Whitewater

Deadlines for all material, including advertising, are the 15th of January, April, July and October for the Spring, Summer, Fall and Winter issues respectively.

Send Editorial material and photos to the Editorial Chairman.

Send membership/subscription payments, changes of address, non-receipt of copies to the Circulation Manager, Geo. Larsen.

Send Race Schedules and results to the Racing Editor, Bob Alexander.

Send Advertising copy, proofs and requests for information to the Advertising Manager, Henri Eble.

Send Payments for Advertising and Club Affiliation dues to the Business Manager, Charles Smith.

American Whitewater is mailed to all members of the American Whitewater Affiliation, an affiliation of boating clubs and individuals interested in whitewater paddle sport. Membership is open to interested individuals at \$3.50 per year and to clubs at \$8.00 per year. Club membership includes listing in the Journal.

Publication is planned at 4 times yearly. Single copies, \$1.00 each. Surplus back copies are available at reduced prices. Write the Circulation Manager for details.

The Staff and committee members listed above are unpaid Whitewater enthusiasts who volunteer their time and efforts to bring affiliate/member subscribers this journal. Your contribution of articles, letters, race results and schedules, photos and drawings are essential for their continued efforts and the timely publication of the American Whitewater Journal.

Cover: John Ramirez on the Tuolumne River, Calif. A routine chute? Not quite! See p. 120 for the consequences. Photo by Carl Trost

Letters from Readers

A Tribute

In the summer of 1969, I had the opportunity to spend a night, and I mean all night, discussing philosophy of kayaking, paddles and boats on the North Fork of the Yuba River. I had never spent any time previously with Mel Schneller, but I found myself drawn to him like a magnet. He described how his narrow "V-shaped" paddle could allow the physically weaker paddler to develop control, i.e., to develop draws, sculls, etc., instead of simply struggling to get the paddle through the water. He discussed his boat and what he wanted it to do and how he was attempting to do it. His boat, always outdated by the next idea, is a product of this analytical mind. He was a strongly opinionated man, often so much so that I have seen him intimidate many who didn't recognize that what he wanted was a provocative dialogue, not acceptance of his ideas. He wanted to learn from others and did so.

It is this man who taught me and influenced many Californians to boat. Mel has passed on like he would have wanted—running his favorite, the Trinity. For those of us who knew him, it will be a tremendous loss, but we do understand his ideas and hopefully, though never with elegance, we will be able to explain them to others.

J. R. Roberts
189 Camelia Ave., Apt. 1
Ottawa, Ont.

September 20, 1971

HOLE RESCUE TECHNIQUE

Dear Editor:

After re-reading the excellent article on "Souse Holes—The Ins and Outs" by J. Sindelar and Walter Harvest in the Spring, 1971, *American Whitewater*, it occurs to me that, probably because of Walt's humility, he left out a valuable safety suggestion in regard to souse holes.

Before the Salida downriver kayak

race in 1963, several kayakers were practicing in Cottonwood rapids when a 14-year-old boy broke a paddle in a souse hole, came out of his kayak, and wearing a life preserver, continued to bob up and down until it seemed that he would surely drown. Walt was the only one of several experienced kayakers nearby to have sufficient presence of mind to make a rescue. He paddled swiftly into the souse hole, grabbed the boy by the hair, and with only one hand on his paddle was able to skillfully drag the boy to safety. This procedure may save other lives if white-water kayakers keep it in mind.

Ronald B. Drummond
26206 E. Via Serra
P. O. Box 2012
Capistrano Beach, Calif. 92624

(Yes, this illustrates one of the best rescue techniques we know of . . . take Walt Harvest along!—Ed.)

Sept. 29, 1971

Hello Jim and Iris,

I received the Fall issue of *American Whitewater* this last week. The article "On Staying Small—A Minority View" has a very good point; we as enthusiastic boaters could be bringing our own downfall or overorganization by overselling the sport to the mass public. This mass public we may not be that interested in knowing. This sport will go like other sports—commercial—but does it have to be so soon?

I am planning on following Dad's philosophy of taking people out before they can buy a boat. It will give the prospectives some boating knowledge and safety and help determine whether they would want a boat.

So long for now,

Mike Schneller
1773 Broadway St.
Marysville, Calif. 95907



AWA Affiliates, *continued*

NORTH CAROLINA

Carolina Canoe Club
Bob Stehling, Box 9011
Greensboro, N. C. 27408

OHIO

American Youth Hostels, Inc.
Columbus, Ohio, Council
Charles H. Pace
565 Old Farm
Columbus Ohio 43213

Keel-Haulers Canoe Club
John A. Kobak, Rep.
1649 Allen Dr.
Westlake, Ohio 44145

Warner & Swasey Canoe Club
Wayne McRobie, Rep.
406 Mill Ave. S.W.
New Philadelphia, Ohio 44663

The Madhatters Canoe
Club, Inc.
Christ Wolf
2647 Norway Dr.
Painesville, Ohio 44077

OREGON

Oregon Kayak & Canoe Club
Toddy Stanley
13975 S.W. Bonnie Brae St.
Beaverton, Ore. 97005

PENNSYLVANIA

American Youth Hostels, Inc.
Pittsburgh Council
Bruce E. Sindquist
210 College Park Drive
Monroeville, Pa. 15146

Buck Ridge Ski Club
Hans Buchler, Rep.
1155 Schoolhouse Lane
West Chester, Pa. 19380

Central Ski Club of Philadelphia
Paul A. Liebman, Rep.
345 S. 18th St.
Philadelphia, Pa. 19103

Endless Mt. Voyageurs
Louis Hopf, Rep.
285 Short Hill Dr.
Clarks Green, Pa. 18411

Penn State Outing Club
John R. Sweet
118 S. Buckhout St.
State College, Pa. 16801

Philadelphia Canoe Club
4900 Ridge Ave.
Philadelphia, Pa. 19128

PENNSYLVANIA (Cont.)

Sylvan Canoe Club
Terry D. Sanders, Rep.
1935 Hampstead Dr.
Pittsburgh, Pa. 15235

Wildwater Boating Club
Richard S. Brown, Rep.
P. O. Box 77
Pine Grove Mills, Pa. 16868

TENNESSEE

Carbide Canoe Club
Jim Ford, 115 Lehigh Lane
Oak Ridge, Tenn. 37835

Bluff City Canoe Club
L. Migliara
Box 4523
Memphis, Tenn. 38104

East Tennessee White Water Club
Don Jared, Rep.
P. O. Box 3074
Oak Ridge, Tenn. 37830

Tennessee Valley Canoe Club
Robert P. Shepard
4403 Montview Dr.
Chattanooga, Tenn. 37411

TEXAS

Texas Explorers Club
Bob Burleson, Rep.
Box 844
Temple, Texas 76501

Explorer Post 425
B. Millett, 708 Mercedes
Benbrook, Texas 76126

UTAH

Wasatch Mountain Club, Inc.
J. Calvin Giddings, Rep.
904 Military Dr.
Salt Lake City, Utah 84108

VERMONT

Canoe Cruisers of
Northern Vermont
Mrs. Nan Smith
Shelburne Farms
Shelburne, Vt. 05482

Norwich University Outing Club
L. J. Hurley, Rep.
Northfield, Vermont 05663

VIRGINIA

Explorer Post 999
Thomas J. Ackerman, Rep.
610 Mansion Circle
Hopewell, Va. 23860

Blue Ridge Voyageurs
Ralph T. Smith, Rep.
8119 Hill Crest Dr.
Manassas, Va. 22110

VIRGINIA (Cont.)

University of Virginia
Outing Club
Box 101X, Newcomb Hall Sta.
Charlottesville, Va. 22903

Coastal Canoeists
R. L. Sterling, Rep.
309 Mimosa Drive
Newport News, Virginia 23606

WASHINGTON

Washington Kayak Club
Al Winters, Rep.
8519 California Ave. S.W.
Seattle, Wash. 98116

U of W Canoe Club
IMA Bldg.
University of Washington
Seattle, Wash. 98105

WEST VIRGINIA

West Virginia Wildwater Assn.
Idair Smookler, Rep.
2737 Daniels Avenue
South Charleston, W. Va. 25303

WISCONSIN

Wisconsin Hoofers
Outing Club
Steve Ransburg, Rep.
3009 Hermina St.
Madison, Wis. 53714

Sierra Club
John Muir Chapter
Tom O'Rourke, Rep.
728 S. Oneida St.
Rhineland, Wis. 54501

AUSTRALIA

Indooroopilly Canoe Club
Box 36
Indooroopilly 4068, Australia

CANADA

B. C. Kayak & Canoe Club
1200 W. Broadway
Vancouver 9, B. C.

Canadian Youth Hostels Assoc.
Maritime Region
Ruth Mackenzie, Rep.
6405 Quinpool Rd.

Halifax, Nova Scotia, Canada
Montreal Voyageurs
Rene Bureau, Rep.
360 Barberry Place
Dollard des Ormeaux
Montreal 960, Quebec, Canada

ITALY

Canoe Club of Milan, Italy
Federico Maccone, Rep.
Via Sarmartini 5
Milano, Italy

COUNT ME IN . . . Renewal Time for Member/Subscribers

Volume 16, #4 completes the current membership/subscription period.

Please help us by renewing for 1972 now.

New Members/Subscribers . . . Please check your option and mail with payment:

4 issues of 1972, starts in March	\$3.50, Foreign \$4.50	_____
4 issues of 1972 plus Fall and Winter 1971	\$5.00, Foreign \$5.50	_____
4 issues of 1972 plus Winter 1971	\$4.50, Foreign \$5.00	_____
Other specified back issues at \$1.00 each, Foreign \$1.15		_____
6-packs of different back issues, \$2.50, Foreign \$3.00		_____

Name _____

Address _____

_____ Zip Code _____

Please check: Renewal _____ New _____ Name of Club _____

Mail to: WHITEWATER, Box 1584, San Bruno, California 94066



SOMETIMES IT TAKES TWO

Three members of the Old Town white water family of kayaks and canoes double the excitement of downriver racing and touring. The POTOMAC, OJIBWAY, and BERRIGAN canoes feature the finest in fiberglass/polypropylene or fiberglass/end-grain balsa sandwich construction for rugged use with superb maneuverability and speed.

For singles, Old Town has six white water craft, includ-

ing the MINISLALOM, new in 1971, a medium slalom kayak, and the SURFER, especially designed for those who like their white water salty. The complete line includes slalom, downriver, C-1, C-2, and touring craft, all specifically designed to meet your requirements. Competition models fully conform to I.C.F. dimension rules.

All models are available in 169 color combinations.

Write today for the free 1971 Old Town Catalog.

Designed by Bart Hauthaway



Old Town® CANOE COMPANY

9083 Mill Street, Old Town, Maine 04468

Dealerships available in some territories