Portages on Olema Creek, Calif. See story on p. 22. Photos by Joe Bauer
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COVER: Marge Uhalde (yes, a gal in a C-1!) negotiates First Drop Rapids on Wisconsin’s Peshtigo R.
See article, p. 12. Photo by Bruce Weber
Dear Jim and Iris:

Thanks for another fine AWA Journal — slightly late but worth waiting for.

I was glad to see Wildwater West Virginia get a good review. I would like to have written it as I could have filled in the one gap in your review — the river descriptions are accurate, and are also helpful both to old W. Va. hands and newcomers alike. I'm familiar with most of the runs described and would have to say the guide is outstanding and worth the price. River ratings are always open to both criticism and confusion, but these are generally consistent and correct within the spirit of the International System. A few may be slightly on the conservative side, which is better than the converse, but don't go out pooh-poohing the ratings and expect to stay out of trouble! Only two substantive errors have come to my attention: Seneca Creek is underrated by about a class, which could be dangerous, and the takeout for Lost River is on the wrong road, which could be confusing.

John R. Sweet
118 So. Buckhout St.
State College, PA 16801

(The authors of the above-mentioned guide tell me that part of the reason for the relatively high cost of the book is that they opted for a high-quality binding which will not disintegrate with a few weeks' use. The guidebook, which was reviewed in the Autumn, 1972 issue of American Whitewater, is available from Bob Burrell, 1412 Western Ave., Morgantown, WV 26505, for $5.25. — Ed.)

Dec. 1, 1972

Jan. 6, 1973

Dear Iris,

Thought it might interest you and/or your readers to know that partly because of their response to our article (Autumn, 1970 — "Touring Western Whitewater"), we have written a book. The first half is a how-to-do-it section covering such topics as obtaining and interpreting information about wilderness rivers, types of whitewater boats and their relative advantages, river safety, and planning trip food. The second half includes detailed guides (general river description, maps, and specific information on campsites and rapids) to nine wilderness tours (all three days or longer). The rivers include the Salmon River system, Rogue, John Day, Grande Ronde, and the Owyhee. The book, Wildwater Touring, will be published by Macmillan Inc. in Fall '73 or Spring '74.

Sincerely,
Scott and Margie Arighi
16624 S. Copley Rd.
Oregon City, OR

Jan. 16, 1973

Dear Jim,

I have finally decided to update my C-1 spray skirt and make a nylprene one. Our K-1 paddlers are using your instructions on "How To" which ap-
HELP NEEDED FROM WHITEWATER BOATERS

Have you noticed how many technically trained people gravitate to the sport of whitewater canoeing and kayaking? There must be something about the observation of the hydraulics, velocity, etc. which attracts the scientifically trained outdoors enthusiast to whitewater paddling.

Here in the Cincinnati area we hope to construct a whitewater slalom course. In discussing design with non-boaters, I try to explain in layman's terms how gradient, water quantity, obstructions, discontinuities, and direction affect such things as velocity, water depth, current direction, eddys, standing waves, souse holes, etc.

I have yet to see in any of our paddling literature any fundamental analysis of whitewater hydraulics. Put another way, if you were in charge of a construction of a stream bed, what sort of bottom topography would you put down for different surface effects?

This insertion in this magazine is to ask for help from you talented guys and gals to share with me ways to mathematically describe flow phenomena as they relate to what makes a good slalom or wildwater course. We can't offer any remuneration, but you will have the satisfaction of contributing in a meaningful way to the future of whitewater sport in this country, assuming we can get a course built.

Send your ideas to Ray McLain, 25 Elm Ave., Cincinnati, OH 45215.

AWA SAFETY CODE

Again available to Affiliate Clubs and others wishing to distribute copies of the AWA Safety Code as part of their canoe-and/or kayak-handling seminars, for $8 per hundred, postpaid.

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VOL. XVIII / 1
It was sometime in the early 1950's when Bob, then an engineering student at the University of Massachusetts, first picked up an ash paddle and put it in fast moving water from the stern of a 17' Grumman canoe. My first still vivid memories of Bob go back to 1955; by that time he was an expert instructor and I just a novice in the Connecticut Chapter Appalachian Mountain Club whitewater program. Bob had developed a voice of authority which easily carried from bank to bank, when "draw right!" and "draw left!" were about the extent of the whitewater lexicon. Bob had a natural bent for hydraulics, and was invariably the first one to jump waist deep into cold water to dislodge a wracked up canoe, or to attach a rescue line at just the right angle.

Bob was an innovator, appearing one day with a Klepper foldboat, when anyone with a double bladed paddle was a lonesome figure, indeed. He delighted in demonstrating his self-taught kayaking skill to all us metal men, and would tackle the biggest of haystacks with a "whoop!" while the rest of us scouted, lined, sneaked, or otherwise nursed our boats down a heavy drop. I can still remember his facial expression, a mixture of grin and disdain, as he waited innumerable waits in a bottom pool for us to catch up. By 1959 he was an acknowledged master of the foldboat, and placed first in the Domestic F-1 Class in the Third Annual Eastern Whitewater Slalom Championships held on the West River, Vermont on April 25-26, 1959. It would still be some years before the K-1 class replaced F-1.

Fiberglass as a boat building material was virtually unknown, and the reassembly of the sticks and fabric of a foldboat was a highly developed skill. Racing was delightfully informal in those days, always on natural runoff. Many of the paddling techniques we take for granted today were just being introduced to us by our European counterparts.

Bob was an innovator in slalom, too. He early recognized the potential that racing held for developing whitewater skills. He single-handedly fashioned one of the first complete sets of slalom gates available in this part of the country, together with rigging which was workable and adjustable. For several seasons he and his Volkswagen bus traveled regularly from race to race, chock full of poles and line and wire, with just enough space left to squeeze in his wife and children. He helped develop a working relationship with the U.S. Army Corps of Engineers for providing controlled water. He helped to develop and improve scoring and timing techniques, and his voice was always heard loud and clear in those early and seemingly interminable discussions concerning the interpretation of slalom rules, which had come to us in imperfect translation from the European-dominated International Canoe Federation. Bob was chairman of the
Jamaica Races in 1959 and 1961, which, by the standard of the time, were models of efficiency. He proved that races could start on time, could be reasonably scored without too much disaffection from the competitors, that an attractive race program could be printed with income from advertising, and suitable trophies could be obtained for the winners.

Once slalom was well established, Bob's concern turned to the development of family type competition, and to the introduction of new paddlers to racing. He became a mentor of the Hudson River Derby, held annually at North River, New York, and over several years during the mid sixties served as chief course-setter, and as a principal advisor to the race committee. He served both as course-setter and chairman of the Appalachian Mountain Club Class II slalom held annually on the Salmon River in Connecticut, one of the few introductory type slaloms of its time.

Along about the same time, Bob recognized the value of a strong national association of paddlers. He became active in the American Whitewater Affiliation, served as chairman of its Advisory Committee in 1964, and as Executive Secretary in 1965. He was a faithful correspondent in those dark days of the AWA, when most canoeists considered paper work an anathema.

Bob was a devoted family man and father. He married Rosalie Britton in 1959, and helped bring up his son Keith and daughter Heather to become camping and canoeing enthusiasts. He was a recognized expert in water resource management, and used his special knowledge in making many voluntary contributions to the conservation efforts of both the Appalachian Mountain Club as a member of its Conservation Committee, and to his home town of Redding, Mass., as a member of its Planning Board.

The joys of wilderness tripping did not escape him. Anyone with his skills and enthusiasm would naturally be an asset in the wilds. Add to this his love of fishing, his inveterate habit of arising each morning at first light and starting a fire, and his constitutional inability to make a portage with less than seventy-five pounds on his back—then you have the perfect wilderness paddling companion. He had his idiosyncrasies, of course. He loved to fish, but he never brought along a net. It got a little complicated at times landing his catches. One particularly nice northern pike was finally landed in a hastily emptied food sack, and on occasion he would barehand a catch. So every once in a while, he would get himself impaled on a fish hook, but then with great calm he would dig out the hook with his hunting knife and go on to the next catch. At other times his equal affinity for photography and water would betray him. Stretching for a particularly good shot, in the drink he would go, camera and all. We would bemoan the loss, but he would shrug, knowing there were many more pictures left to be brought home for successful development. His ultimate perfection was making oatmeal. A measuring cup was an unnecessary baggage. Fire, pot, sack of oatmeal, water and salt he could combine with an unerring eye. After a proper boil he would

Impaled on a fish hook.
call out, "Lee, oatmeal!" then "Carol, oatmeal!" then "George, oatmeal!" and so on in succession to each member of the party, and, sure enough, its consistency would then perfectly match the individual palate, soft to firm. As any tripper well knows, if the morning goes well, then the whole day is practically made. Mornings were always great with Bob.

Bob paddled for twenty of his forty years—innumerable miles, innumerable drops, chutes, riffles, bars, lakes and streams, and with innumerable people. No accounting of the development of the sport over the past twenty years would be complete without a mention of the contributions made by Bob. It is safe to say that he left something very special with each and every person he paddled with—an encompassing enthusiasm, a sense of comradeship, a willingness to help—and a sense of respect for all the marvelous and wonderful elements that make up our whitewater environment.

All of us who shared traveling the waters with Bob were blessed by his presence, and we will continue to be blessed by a stream of many rich memories—many, many more than can be retold here.

BOOK REVIEW

Whitewater Coaching Manual, by Jay Evans, U.S. Olympic Coach, 56 pp. Publ. 1973 by Ledyard Canoe Club of Dartmouth, 201 McNutt, Hanover, NH 03755. $5 postpaid. With ten years' experience as coach for Dartmouth's Ledyard Canoe Club, two seasons as U.S. National Whitewater Team Coach and one season as U.S. Olympic Slalom Team Coach, Jay Evans is eminently qualified to write such a manual, "a guide for the dedicated racer and the person who wants to help him." It is written for those athletes who have no coach or trainer available and must work on their own, as well as for the coaches themselves. Chapters include: The Coach-Athlete Relationship; Mental and Physical Preparation; Psychological Testing; Diet: Nutrition and Drugs; Pool Training; Slalom and Wildwater Training; Racer Preparation; Physical Performance and Race Performance Checklists; Coaching Paraphernalia (use of videotape, etc.); tips on the international scene, how to conduct a training camp. This manual is clearly a must for anyone seriously interested in international competition.—ILS

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Flotation for Open Canoes

By T. Walley Williams III, 71 Orchard St., Belmont, MA 02178

If you own or plan to buy an aluminum canoe for whitewater, consider adding extra flotation and mechanical strength where it really does some good — along the sides.

History of a Unique Design

About seven years ago at the annual meeting of the Appalachian Mountain Club Interchapter Canoe Committee, the design criteria for "perfect" canoe flotation were developed in a round table discussion. Subsequently, John Urban worked out the details of the system described here. This flotation has been successfully tested for six years with minor improvements along the way. Fourteen Club boats have survived almost continuous use without a single "wrapup" requiring a boat to be scrapped.

The classic problem in an open boat is water coming over the upstream gunwale due to hanging up on a rock or insufficient lean while going out into a strong current. After an upstream swamp one wishes to have positive buoyancy along the side of the boat to lift both the submerged gunwale and the keel so that the bottom is out of the water rather than exposed to the rocks ready for a "wrapup." Of course, even with such flotation the boat may occasionally lodge on a rock with current operating on both of the open ends. Here, mechanical strength is needed. The flotation described below makes each side of a canoe into a beam with considerable strength.

General Description

Two slabs of closed cell polyethylene foam are placed along each side of the canoe just under the gunwale. They are held in place by the thwarts and by a series of stainless steel clips and a lacing of nylon cord. The detailed procedure below was written expressly for a 17-foot Grumman canoe with shoe keel; however, it should serve as a starting point for use of the system on any other open canoe. The foam is available from suppliers of shipping materials. Look in the Yellow Pages under Packing Materials — Shipping. An individual canoe can be equipped for about $30.00 but it costs only $18.00 per boat when several are done and the foam can be purchased in quantity.

How the Boat Handles

The flotation adds about 10 pounds to the weight of the boat. It is somewhat less when installed, but the surface of the foam picks up a little water during a "wet" trip. Portaging is, of course, more arduous, but the foam is easily removed for lake canoeing if desired.

When a flotation-equipped boat flips, it tends to seek a stable upside down position well out of the water. In this position a single swimmer can dive under one gunwale and push up to right the boat. Alternatively, a paddler in a second boat can lift one gunwale and flip the boat upright. In either case, the boat rights itself only half full of water — a considerable safety advantage in itself. A boat that is merely swamped with this flotation maintains some residual righting momentum even when full of water. It is possible to paddle the swamped boat ashore or to control it while bailing is undertaken.

Finally, if the boat gets stuck on a rock with the upstream gunwale under water, the flotation provides approximately 165 pounds (75 kg) of lift where it is needed most. Situations that formerly required a rope and winch can now be handled by the paddlers themselves.

Manufacturing Tie-in Clips

The clips for lacing the flotation into place are made from inexpensive stainless steel welding rod. A half pound (200g) of 1/16 inch (1.5-2.0 mm) rod can be bought for less than $2.00 from any welding supply dealer. The simplest clip is the one used for hooking into a rib since it is bent up all in one plane. Start with a piece 2.5 inches (6.5...
mm) long and bend it to roughly the dotted line shape shown in Fig. 1. The clip is bent into the final form shown during installation. Make 10 of these lower clips.

![Fig. 1. Stainless steel clip installed in a rib, cross sectional view. Dotted lines show shape of clip prior to installation.](image)

The second type of clip hooks onto the gunwale as shown in Fig. 2. Start with a slightly longer piece of rod—3 inches (65 mm). It is important that the holes in the gunwale be drilled \( \frac{3}{8} \) inch (10 mm) in from the edge to avoid the thick part of the extrusion. Thus, this section of the hook is fairly critical in size. Try making and installing one clip before making the other nine clips.

![Fig. 2](image)

**Location of Holes for Clips**

The flotation runs aft in the boat beginning just behind the forward thwart. Start with the rib under this thwart and install clips in it and the four ribs aft of it—there are 10 lower clips in all. New Grumman canoes have a painted antireflection deck that makes clip location easy. The clip holes go one inch (25 mm) outboard of the painted area. Alternatively, force the flotation into its final position and mark the inboard edge with a pencil. The clip holes go one inch further outboard. Study figure 1 and note that the holes are close to the skin of the canoe on the side of the ridge running down the center of each rib. Caution—do not drill too close to the bottom. You might go through, and it will make it more difficult to install the clips. Use a drill a little larger in diameter than the clip rod—3/32 inch is good for 1/16 inch clip rod.

The holes for the upper clips are located \( \frac{1}{4} \) inch (10 mm) apart. Place a pair of holes on each side of the boat centered between each pair of ribs which have been prepared for the rib (lower) clips. An additional pair of gunwale holes will be required aft of the last rib. Place these holes 71 inches (180 mm) from the forward thwart so that the line going to them catches the back of the flotation.

**Cutting the Flotation**

The flotation itself is Ethafoam brand of Polyethylene closed cell foam and comes in standard sheets measuring 1\( \frac{3}{8} \) x 24 x 108 inches (48 x 610 mm x 2.75 m). It may be cut with a sharp bladed knife or a band saw. The flotation is first cut crosswise into pieces measuring 36 and 72 inches and then cut lengthwise. Each canoe requires 11/3 sheets.

After cutting lengthwise as detailed below, this will net two sheets 6 ft. long and four sheets 3 ft. long, plus an extra 6-ft. sheet if you are only doing one boat. The two 6-ft. sheets go nearest the keel of the boat; the 3-ft. sheets go between the long sheets and the sides of the boat, where the center cut is not noticeable.

(a) Cut 6-ft. (inside) piece as shown.

(b) Cut both 3-ft. pieces as shown. These go between the 6-ft. pieces and the skin of the boat.

![Fig. 3. End view of flotation cuts.](image)

Figure 3 (cross-sectional view) shows one way to make the cuts that divide the sheets lengthwise, but it is recommended that you try a cardboard template in your own boat before committing all your foam. Study Fig. 4. When the foam is cut properly, it will stand vertically in the canoe after considerable kicking into place with the heel and there should be a little gap between the foam and the side of the boat.
canoe. This kicking will force the thwart down into the flotation, which is to be desired and will also force the outboard piece up under the gunwale extrusion.

**Lacing the Foam into Place**

The foam is laced into place with \( \frac{3}{8} \) inch \((3\ mm)\) diameter braided nylon line or parachute cord. It is helpful to have excess line when making the installation, but 27 feet \((8.3\ m)\) will do if you are in short supply. First, place the flotation loosely in place with the upper edges of the pieces in place but the lower edges toward the center of the canoe. Next, pass the line through the top end clip in the stern and lace loosely, alternately from top to bottom. When the opposite or bow end clip is reached, tie onto it.

Tightening the lacing is tricky. Start at the tied (bow) end and pull gently on both lines to the first lower clip while a second person pushes or kicks the flotation over the clip. If you fail to keep tension in the line, the clip will pop out as the flotation goes into place or it will end up pointing out toward the skin in which case it will pop out when the tension is increased. Gradually, work the flotation tight at each rib. Go down the length of the boat several times. Finally, tighten the lines and secure the end with a taut line hitch or other adjustable knot.

**Embellishments**

The piece of line that runs to the rib just in front of the center thwart is a good place to hold onto when portaging the boat. (The flotation keeps you from hooking your hands on the gunwale.) Note, however, that \( \frac{3}{8} \) inch line is hard to hold onto. Consider placing a piece of old hose or tubing over the line in this area.

Try kneeling in the center of the boat as you would when paddling solo. You may want to remove a small amount of flotation along the bottom edge to form a knee pocket.

**Modifications of the Basic Plan**

The six feet of flotation suggested here is too long for a 15-foot Grumman. Shorten it until the knees of the sternman and the feet of the bowman are well clear. For boats without ribs you must rivet in an aluminum tie point or install one with epoxy and fiberglass. A six-inch length of nylon line with both ends tucked through holes near the center of two 6 x 6 inch squares of glass cloth will make a good tie point after the cloth is secured into place with epoxy resin. This technique will work on boats with fiberglass and plastic hulls.
This coming season the Midwest Division, ACA wildwater championship race will again be held on the Peshtigo River in northeastern Wisconsin. The site of the race is the Roaring Rapids section of the river—three and one-half miles of continuous grade III-IV rapids including six major drops with an average water flow greater than 1,000 c.f.s. at this time of year.

The Peshtigo, like the Wolf, flows over the granite bedrock of the Canadian shield. The rapids alternate between the boulder bed or rock garden type, which provides a fast, bouncing ride at high water, and the sloping (or not-so-sloping) ledge type which generates huge, curling waves and boat-size holes and rollers.

In the Roaring Rapids section the first ledge, appropriately named First Drop, follows about a mile of boulder-type rapids, and can be recognized by a recent forest clearing on both banks. The run is just right of center at high water, about on center at medium or low water. Second Drop follows within less than a half mile. It is not so high as First Drop but forms a strong roller across the entire river. Third Drop is on the far right side of the river, the left and center being occupied by a large rock shelf which is always exposed. It is usually a minor rapid with an easily negotiated roller, but at high water it has been known to prepare boaters in the worst possible way for Five Foot Falls, which
follows almost immediately. Five Foot Falls is the not-so-sloping ledge with a break at dead center, runnable only at very high water, and another about boat-width wide at far river left. This left chute terminates at a large, exposed boulder which can be avoided by a strong turn to the right.

Horserace Rapid can be seen from the base of Five Foot Falls, and is probably the most difficult rapid in the section. The river becomes constricted considerably at this point, and flows over a huge granite sheet forming three closely spaced but distinct drops separated by extremely fast water before dropping off the edge of the granite between low rock walls in a short, turbulent falls. As the boater approaches the rapid he is quite conscious of the acceleration, which continues through the quarter-mile run, interrupted only by waves or holes, making line-up for the last drop tricky.

Another half-mile brings S-Curve, a short, winding rapid around the left of an island, followed by another mile or so of continuous Grade II before the flat water about a mile above the take out at Highway C bridge.

Only expert or intermediate paddlers should consider racing on this course. Mandatory scouting runs will be made before the race. Wet suits and full boat flotation will be necessary. For further details see the calendar of events.

Place: Junction Marinette City, Highway C, Peshtigo River, Athelstane, Wis.
Sponsor: Chicago Whitewater Assn.
Contact: John R. Laing, 4850 Lake Park Ave., Apt. 1607, Chicago, Ill. 60615.

Turbulence on the Peshtigo requires some quick maneuvering by Walt Bummond.

— Photo by Bruce Weber
Head Injury In Whitewater

By Donald H. Wilson, M.D.
Section of Neurosurgery, Hitchcock Clinic, Hanover, NH 03755

A boater who is knocked out in whitewater will probably drown. Prompt rescue is too difficult. If these statements are true then prevention of head injury becomes all-important.

Last fall Dr. Dick Tompkins and I were kayaking in the small rapids under the West Hartford bridge on the White River. Dick flipped but he did not surface. His paddle drifted beside his old, red kayak. Then a white face appeared, covered with blood, and a hand clutched weakly at the grab loop. I thrashed toward him and somehow we managed to stagger ashore. Below his hockey helmet there was a three-inch gash in his right temple. "I woke up underwater," he said, "very frightened." Too close, that.

The brain beneath the temple is easily injured. Although the temporal muscle is a fair cushion, the underlying bone is thin. A light blow may fracture it and rupture the middle meningeal artery which runs in a groove between the bone and brain. This "epidural hemorrhage" causes death within an hour unless an emergency operation is performed. But before that, coma renders the victim helpless.

Make this test. Put your index finger straight into the hollow behind the eye socket and above the cheek bone on the side of your head (shaded area in drawing). If the helmet does not deflect your finger it will not deflect a rock. A hockey helmet, for example, fails the finger test (and every other one, in my opinion). Dick Tompkins discovered this.

I think that a head injury is most likely to occur when a boater flips (side of the head) and before he comes up (front of the head). Thus the temple and the forehead are most vulnerable. A helmet must protect these two areas against a smashing blow. It follows therefore, that a good helmet must have both proper strength and proper shape.

Eric Jacobson discussed strength in his fine article on "Helmets for White Water Canoeing" (AWW, Summer 1967, p. 10). He believed that the liner of a helmet must be of crushable foam, e.g. Bell-Toptex, and that the sling-suspension liner, e.g. Rohmer and the hockey helmet, yield "at trivial forces." His team ordered the Bell-Toptex 'Malibu' helmet. This was designed for the rock climber though, who usually receives blows to the top of his head from falling rocks. It is strong but it fails to pass the finger test. The eggshell temporal bone is still exposed.

The whitewater boater cannot afford a stunning blow to his head. His helmet must be strong, light and it must cover both his forehead and (especially) his temple.

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- (215) 521-9550
Should the Corps of Engineers succeed in its present plans to build the New Melones Dam, one of the coffin nails that will seal the fate of one of the finest whitewater runs in California will be the idea of building a slalom course on the lower river. Not an actual slalom course, mind you, just the idea of one, combined with the Corps' fraudulently misleading claim that a test team of "expert kayakers . . . concluded that there was a potential for an intermediate slalom training course and for general recreational kayaking if access can be provided and if minor alterations to two falls areas can be made."

Brief mention of the "test team" and an earlier experiment at slalom building in ACA's American Canoeist implied a new spirit of cooperation on behalf of the Corps (Another Look at the Corps; July/Aug. 1972). The Canoeist was astute enough to add a footnote that suggested there was more to this "complex issue," which means that if you want the rest of the story from a volunteer publication, you must volunteer to write it. With several of our groups interested in obtaining their own "Augsburg" and the formation of a manmade slalom course committee by AWA, it is past time to write the other side of the Stanislaus story.

The "test team of expert kayakers" was put together with a series of phone calls in the same hasty fashion as any impromptu weekend trip. Motivations were several and varied, including the desire to at least be co-operative, a chance to be in on the action and to run the river at two controlled flows, and a resignation that the dam was a foregone conclusion, with kayakers being forced to choose between losing everything or accepting a chance to obtain adequate downstream releases, if not a slalom. Unfortunately, no one appears to have had time to consider or discuss the wisdom of this action with the organizations opposing the dam. Even so, it is doubtful anybody would have realized the propaganda value enhanced by the Corps' sincere but inexperienced attempts to find whitewater.

The name of the game: mitigation

While the Corps stubbornly maintains that the benefits still justify a higher dam (benefits, by the Corps' standards, include "enhancement of the environment"), opposition from numerous groups has caused the Corps to include a lengthy explanation in its form letters telling how it plans to mitigate as much as possible the loss of wildlife habitat, inundation of caves, and several other items. Number one on the list is mitigating the loss of whitewater boating.

All this is nonsense. To the basic complaint that the dam will destroy the canyon, the wildlife, the caves, and the river, and should not be built, the Corps begs the issue with a token of mitigation. But to our politicians, it sounds as if the Corps has answered the complaint, particularly the bit about the experts finding a slalom site. An attempt by the River Touring Section of the Sierra Club to refute the claims made by the Corps merely resulted in another round of letters, via the president and a congressman, with the Corps blissfully explaining to the club (including most of the Corps' own experts) that "a recognized whitewater expert . . ." The Environmental Defense Fund, in a lawsuit that has temporarily halted the dam, had to produce an affidavit from one of these same experts denying the suitability of the lower river.

In its search for a means of mitigation the Corps has studied other rivers (already in use, but not as adequate) and investigated the upstream forks and found them too steep (which we
already knew). All this sounds good on paper, but the Corps has yet to realize it cannot discover new rivers in California, it can only destroy existing ones. It is also considering improved releases on controlled rivers (most of which are not controlled by the Corps). That brings us back to the Stanislaus and the Corps' most promising hope.

A replacement run—maybe

The 14-mile year-around whitewater run to be inundated ends at Melones Reservoir. Downstream is the New Melones damsite, then the Tulloch Dam, the Goodwin Dam, and finally the river emerges (whatever flow is left during the wet months) from the beautiful canyon country into the hot, dry, and somewhat barren foothills. The remaining river is essentially flat with four or five good drops, two of them unrunnable. The study team admitted it could be improved into a short run, and even a slalom could be constructed, which can be said of any channel allowing some extensive reconstruction. And this assumes that the Corps' hope of a sustained flow won't be preempted by several other powerful agencies.

While the Corps must be given credit for trying, its form letters do not mention that the lower river (with or without slalom) is no substitute for some of the concessionaires that earn their livelihood rafting the Stanislaus and are principals in the fight to preserve it, some 10,000 people that enjoy an overnight wilderness trip on these rafts each year, and thousands of others that traverse the river by kayaks, rafts, inner tubes and "rubber duckies."

Considering what has occurred with just the suggestion of a slalom, let us leave the Stanislaus and consider for a moment what would happen if a government agency could point to an actual slalom that they had constructed.

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Could we then be effective in saving rivers? To the public’s thinking, “We have built those kayakers a multi-million-dollar river—what more do they want?” Could we then explain that a concrete course is nothing like a real river?

**Pork-barrel slalom courses**

There are other considerations. To begin with, we leave ourselves open to a well-justified charge of “hypocrisy.” The conservationists among us have long charged the Corps with indulging in pork-barrel projects to benefit private interests, projects well beyond the scope of the military interests of the Corps. What better example of self-serving, selfish interest could our detractors ask for than a publicly financed slalom course for a handful of whitewater freaks? Certainly we must admit that at this stage of our development neither those of us that participate, nor interested spectators, could or would finance such projects, yet we shamelessly expect others to pay for our sport. The idea that a beneficent government can provide all desirable things to all pressure groups must ultimately end in bankruptcy or the realization that we are the government and must somehow pay for everything, much like a parent that was stupid enough to turn his credit cards over to his five-year-olds. The appalling resignation among some of us that American politics being what it is, we might as well get in on the spoils as fight the system, is a sorry commentary on the current state of our conscience and thinking. Had there been a greater sense of honesty among our public and our elected officials in the past, we might not have lost so many rivers and now be fighting an overbearing Corps and Bu Rec. Those that would consider joining this den of thieves should consider that when it comes to determining what monies will actually be spent, the present members are bigger and more experienced.

Perhaps we can justify our projects on the grounds that the Corps has destroyed public rivers and should give us something in return. But if a destroyed river can justify a slalom course, then a slalom course can justify more destroyed rivers. The plural will come easy to the engineering mind. Equating visitor days by kayakers to remote streams against the number of participants and spectators that can use a more conveniently located slalom, we can easily build three or more dams before the slalom is justified (not that it will necessarily get built). If these are ephemeral streams that are being compared to a year-around slalom, we have another factor of four. And don’t forget night boating!

**The hungry tiger**

The notion that the Corps can be diverted from destroying rivers by more beneficial (to our way of thinking) projects is like throwing raw meat to a hungry tiger in hopes that it will go away or grow smaller. Certainly this 33,000-man bureaucracy will have no trouble finding a few idle hands to create enough paper work to pacify boaters. Aside from this, we simply have to get in line, or watch the Corps grow. Even the encouragement that some of our members have already received from their representatives is not likely to be more than the political expedience of referring the matter to further bureaucracy, rather than committing the sin of saying “no.”

There is a touch of irony that with the growing public concern about the opportunistic abuses of our resources, we may be leaning back to the spoils system. Certainly there is reason for us to direct our energies toward saving rivers, and proceeding cautiously, if we must proceed at all, in obtaining another “Augsburg.” It is possible that in our eagerness we may be grasping for a two-edged sword—and grasping for the wrong end.

---

**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
Purpose of AWA'S Manmade Slalom Course Committee

By Jim Sindelar, AWA Executive Director

The issue of man-made slalom courses is likely to be a very troublesome one for AWA. I consider myself a middle-of-the-roader, but I personally do not believe in going beyond busting off a few dead limbs so I can get through the woods on my skis, or chopping out a deadfall or two to make a river boatable, in an attempt to alter nature for the benefit of recreation, including my own. Further, although I see no way to accomplish it, I feel that the best thing that could happen would be for the Army Corps to get out of the recreation business. If I feel this, it is not difficult to imagine others who feel far more strongly on the matter.

On the other hand, it is happening! In a number of places boaters are contacting congressmen and the Corps trying to promote a slalom course in their area. Some which we have heard of (mostly by accident) are: one that was being considered for the Los Angeles area, which may have been dropped when Montreal got the Olympics for 1976; the one in Cincinnati that Ray McLain is working on; one (in Missouri, I think) on the Merramec River around a proposed and approved (but not started) dam which is being opposed by conservationists; one on the Mulberry in the Ozarks (see Dean Norman's article this issue); and latest, one in Minnesota. Burying our heads in the sand on this issue will not change things: thus in an attempt to face the issue squarely and at least promote some intelligent discussion on the matter I felt that the committee was warranted. It is not meant as a blanket approval for the projects, but rather a forum and focal point for study and discussion. It is my intent that Ray should receive all comments, pro and con (please send him yours) so that they may then be available for study, and perhaps aired in the Journal.

My choice of Ray to head the Committee is based on my understanding that he has a history of being a conservationist who has fought Corps projects bitterly on other occasions, that he is very interested, and that he will soon be, if he is not already, quite knowledgeable on the subject. In my mind, a big part of his job should be that of pointing out environmental objections to interested parties. Hopefully we will now at least hear of the projects so that we will be in a position to further investigate them and take a stand or stands. Ray's project—essentially a longer, crooked spillway around an existing navigational dam—is difficult to object to on an INDIVIDUAL basis. I feel that only the general objections of giving the Corps more work, and especially in this area, apply here.

Other interested parties with different viewpoints should be encouraged to join the committee, for I think we should attempt to be as objective as possible. Contact Ray McLain, 25 Elm Ave., Cincinnati, OH 45215.

July and August 1973

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A GLOVE PATTERN

By George N. Thomas
24 Barnard Dr., Oakland, NJ 07436

The problem of cold hands is a serious one for me. I nearly froze both hands one cold March day on the Shepaug River. The experience was so traumatic it prompted me to design some good gloves in a hurry. I was wearing commercial wet suit gloves when the incident happened and as a result I learned a couple of lessons: (1) Gloves must not be too tight or circulation is restricted. This is very important. (2) Gloves must be flexible to permit proper manipulation of your paddle. A certain amount of feel through the glove is needed. This is even more important in a kayak. The commercial gloves I had did not meet either of the above requirements and besides they were uncomfortable.

The pattern fits my hand size 8 (small) with ample clearance but will not permit me to wear a wool liner in freezing weather. The dotted outline was made to fit Louise Davis so you may adjust your pattern to suit yourself. The glove pattern is on 1-inch squares and the thumb pattern is on ½-inch squares and is coded for marking on the outside.

I have only one suggestion on assembly, do the thumb first and set the thumb into the palm before the back is attached. As to material I prefer ¼-inch nylon backed neoprene with the nylon on the inside. Jim Sindelar preshapes his gloves by making the palm opposite the knuckles and first joint slightly shorter. You may wish to try this. There are points of high wear and I have found ordinary inner tube cold patch very useful to reinforce these places when they appear. May you all have warm hands in ice water.

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Vol. XVIII 21
Exploring upper Olema Creek.

Lagunitas Creek, November 14, 1972. This log jam washed out in January.
Whitewater In West Marin

By Joe Bauer, Tomales Bay Kayak Club, Box 394, Inverness, CA 94937

Marin County lies just north of San Francisco across the Golden Gate Bridge. It's a land of rolling grass hills and forest of redwood, bay, fir and madrone. Situated on the Pacific Coast, Marin County is a great place for kayaks. There are many bays and estuaries to explore and good surfing at Bolinas. Because much of the water is either shallow or fairly wild, there aren't many motor boats and the wild bird life is plentiful and varied. In the northwest corner of the county lies Tomales Bay, a shallow bay 15 miles long and about a mile wide. All the creeks I will discuss here flow into this bay.

Olema Creek is really too small for good boating. There are lots of log jams and no rapids to speak of, but one section, the mile below Olema, is very scenic. At just the right flow it's an enjoyable run, although I wouldn't recommend it because the stream soon spreads out into many small channels and has a number of barbed wire fences before the takeout.

Walker Creek is the closest thing we have to a wilderness run. Putting in where the Marshall-Petaluma Road crosses, it's a 10 mile trip to Highway 1 just south of Tomales. There are no other roads and the scenery is truly beautiful as the creek winds through the countryside. The upper part has a few mild class 2 rapids and the lower section is wooded with lots of overhanging branches to dodge. The banks are low here and a few hundred c.f.s. too much water would put the current in the trees and could make a really bad situation for a boater, and it's a long walk out.

Lagunitas Creek drains a major portion of Marin County and is the only run that could really be called a white-water trip. The section that flows through Samuel Taylor State Park has maybe half a dozen rapids and a couple which approach class 3. Again the

most crucial aspect is the water level. These are seasonal creeks which come up and down pretty fast. Too little water and of course you drag your bottom. Too much water takes the current into the trees making navigation impossible or at least very dangerous. It's also important to catch it when it's falling. When the creek is rising there are usually a lot of logs and junk in the water and when the log jams get loose it can get pretty hairy.

But if you catch it a day or two after a heavy runoff, the log jams are mostly washed out, the water clears and you have a surprisingly nice run for kayaks, rafts or open canoeists who like to swim.

I don't mean to imply that Lagunitas Creek compares with the Eel or Russian rivers, but when you're used to traveling 100, 200 or even 300 miles in a day to find whitewater, a class 3 rapid in your backyard looks mighty good.

---

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American WHITEWATER
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RACE RESULTS
Race Editor: Ray Gabler, 151 Jensen Circle, W. Springfield, MA 01089

FIRST ANNUAL ICE-BITE SLALOM
Mascoma River, Hanover, NH — November 12, 1972

K-1 Expert
1. Bill Butt 146.0
2. Skip Ilg 153.0
3. Eric Evans 187.0

K-1 Intermediate
1. Jeff Simpson 181.6
2. Albert Johnson 159.2
3. Hans Hoeinagel 199.7

K-1 Novice
1. Sue Merchant 201.0
2. Chris Daniel 202.1

LADY'S DITCH SLALOM
Wolf River-Pismire Falls, Class 3-11 Gates — October 7, 1972

K-1 Expert
1. A1 Button 159.0
2. Charles Steed 176.0
3. Pete Cary 264.9

K-2
1. Bruce Weber-Bruce Campbell 229.1
2. A1 Button-Pete Cary 249.3
3. Fred Young-Steve Rock 385.6

C-1
1. Carolyn Leja 552.5

C-1 Mixed
1. Al Button-Mick McNally 346.5
2. Mike Smith-Ginny Smith 435.1
3. Benny Robertson-Charles Steed 447.0

WESTERN PIEDMONT INTERCOLLEGIATE CANOE RACE
Catawba River, NC — September 30, 1972

C-2 Intercollegiate
1. Caldwell & Voorhees—I.S. 1:02:36
2. Cosby & Shellenader—G.T. 1:06:01

C-1 Intercollegiate
1. H. Caldwell—U.S. 1:08:08
2. D. Voorhees—U.S. 1:08:15

Legend: U.S.—University of the South; G.T.—Georgia Tech; U.Va.—University of Virginia; C.C.—Carolina Canoe Club; C.C.A.—Canoe Cruisers Association; U.V.O.—University of Virginia Outing Club.

1973 RACE SCHEDULE

In keeping with our policy of avoiding overlap as much as possible, we are not publishing a complete race schedule in the Journal. Instead, readers are encouraged to make use of the services provided by the U.S. International Slalom Canoe Assn., which publishes the Whitewater Racing Program (see below). For those who want simply a race schedule, the USISCA has also published such a listing available from Jean Goertner (address below) for $1. We are listing some of the earlier races, as well as a couple which are not included in the above publications, to allow for the time it takes to send for and receive the race schedules.

Date: Type; Race; Location; Contact

March
17-18: SL/WW; Yahara Icebreaker: Madison, WI; Eric Olsen, Limnology Lab., Univ. of Wisconsin, Madison, WI 53700.
24-25: SL/WW; Mokelumne River; Dick Sunderland, 1310-A Virginia; Berkeley, CA.
25: Vermillion River; Dave Hoelter, 4905 Porter Road, N. Olmstead, OH 44070.
31: WW; Petersburg Whitewater Weekend; Middle States Slalom Championships; Petersburg, WV; Dick Weber, 9509 Burning Tree Rd., Bethesda, MD 20034.

April
1: SL; Petersburg Whitewater Weekend, Middle States Slalom Championships; Petersburg, WV; Dick Weber, 9509 Burning Tree Rd., Bethesda, MD 20034.
7-8: SL; Farmington Slalom; New Boston, MA; George Thomas, 24 Barnard Dr., Oakland, NJ 07458.
7-8: SL/WW; Kern River Races; Kernville, CA; Tom Johnson, Box 675, Kernville, CA 93289.
8: SL; Kish Slalom (Training course also available during preceding week); Robert Martin, Lock Box 179, Bellefonte, PA 16823.
7-8: WW; Red Moshannon; Grants Flat, PA; Dr. 118 S. Buckhow St., State College, PA 16801.
14: WW; Reeking Regatta; Texas; Wayne Walls, Lanta, GA; Harry Kustick, 1442 Stephens Dr., Atlanta, GA 30302.
14: WN; Reeking Regatta; Texas; Wayne Walls, 3116 Broadway, Houston, TX 77017.
14-15: SL; Condroyne Slalom; Brandywine Creek; DE; Jim Naylor, 121 Pennerton Road, Paoli, PA 19301.
14-15: SL; Tariffville, CT; Guy Newhall, 99 Dudley Road, Cochrataue, MA.
15: SL; Deschutes River; Bend, OR; 97701.
21-22: SL/WW; Kings River; Dick Barthels, 2570 Elder Ave., Costa Mesa, CA.

June
9-10: SL/WW, Houseatonic Kayak and Canoe Races; Sponsor: Salisbury Rotary Club; Box 391, Lakeville, CT 06039

American Whitewater
If you want a complete schedule of 1973 races, or to find out more about the sport of whitewater slalom and downriver races, and above all to support your National Whitewater Team, send now for your copy of the 1973 Whitewater Racing Program. This year's Program features a color front cover, a complete National race schedule and paddler national rankings. Cost is $1.75 postpaid for individual copies; orders for 25 or more are eligible for a 25¢/copy discount. The Program may be ordered from: F. M. Young, P.O. Box 246, Roscoe, IL 61073; or Jean Goertner, 3208 Regina Dr., Silver Spring, MD 20906. They will also be available at most races. Make checks payable to U.S International Slalom Canoe Assn. (USISCA).

Last-minute race dates:
April 28-29 — Short slalom and open canoe race. Robin Sweeney, The Village, Madonna, VT 05464.

1973 RACE RESULTS

In addition to sending results to AWA's Racing Editor, will all RACE ORGANIZERS please send complete results of all 1973 slalom and wildwater races to: Bonnie Bliss, 11 Larchdell Way, Mountain Lakes, NJ 07046 before Nov. 15, 1973 for inclusion in the 1973 Paddler Rankings. Please include each paddler's first and last name, class, total score, degree of difficulty of course (report wildwater results only if Class III or above and indicate Canadians and other non-U.S. paddlers).

In addition to sending results to AWA's Racing Editor, will all RACE ORGANIZERS please send complete results of all 1973 slalom and wildwater races to: Bonnie Bliss, 11 Larchdell Way, Mountain Lakes, NJ 07046 before Nov. 15, 1973 for inclusion in the 1973 Paddler Rankings. Please include each paddler's first and last name, class, total score, degree of difficulty of course (report wildwater results only if Class III or above and indicate Canadians and other non-U.S. paddlers).

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"everything for canoeing"
In the past several years there has been widespread publicity and public acceptance of the beneficial effects of conditioning exercise as a deterrent to the development or progression of coronary artery disease. Thousands of people have started jogging, cycling, and swimming. Perhaps some canoeists have tried to justify their paddling activities as being healthful exercise. Nothing could be less true. Paddling is the antithesis of beneficial exercise.

To begin with, the prerequisite for all wildwater paddlers is that they be in borderline states of psychiatric compensation. Paddling only partially maintains the patient's tenuous hold on reality as a very weak brace. Abandoning the hopeless psyche of the canoeist, the physical problems associated with paddling are enough to bankrupt a prepaid medical plan.

Many paddlers build and repair their own equipment with resultant epoxy contact dermatitis, fiberglass itch and glass sander's scilicosis.

The paddler loses sleep arising at an ungodly time to travel for hours over ice-encrusted surfaces of the worst highway system in the United States. If he is not maimed on the way to the river his chances for an accident are increased by several orders of magnitude on the return trip when he is fatigued and brandied.

During the entire trip to the put-in and during most of the paddling he is suffering the detrimental effects of anxiety. Adrenalin is pumping through his veins increasing his heart rate and blood pressure as well as increasing his blood sugar and blood lipid, both of which lead to arteriosclerosis.

When he arrives at the river he cramps himself into his cockpit in a most unphysiologic position, predisposing him to neuritis and phlebitis. Often his skin is subject to fungal infections and folliculitis by being encased in sweaty black rubber long-johns.

The activity of paddling per se is of little physical benefit. It is mostly upper extremity exercise which does not involve large enough masses of muscle to encourage cardiovascular conditioning. It only results in strained ligaments, stiff muscles, and occasional dislocated shoulders as infrequent and unpredictable stress occurs during flip-avoiding braces.

When the brace does fail, the paddler is punished by having his elbows, head or face whacked by boulders. If he is able to scramble out of his boat before it folds around him over a rock, he bounces his glutes to a pulp or raises grapefruit-sized hematomas on his shins.

The paddler traumatizes his palms into big weeping blisters. His fingers are lacerated into minute steaks by those spicules of fiberglass and resin that hide somewhere in the recesses of his boat to spring forth a la James Bond only at the time of those emergency grabs. He is exposed to direct and reflected sun, the skin-drying effect of water, chapping cold, windburn, and chilling alternating with overheating.

In the water he is steeped in microbes waiting to invade his integrity with such goodies as leptospirosis, hepatitis, amoebic encephalitis, pansinusitis and salmonellosis.

When and if the paddler reaches his take-out point he then begins his few minutes' exercise for the day. He jerks, cleans and presses his 100 pounds of equipment and lurches 300 feet straight up an overgrown and landslide-covered mountain to his car—a sure prescription to unmask any latent problem whether it be disc disease, a budding inguinal hernia or a narrowed coronary artery.

Thus is laid to rest the myth regarding the beneficial effects of wildwater canoeing.
The televised Olympic whitewater slalom races have stimulated thinking about building artificial whitewater courses in the United States. Ray McLain in Cincinnati is working with the U.S. Corps of Army Engineers on a plan to divert water from an Ohio River navigation dam into a small stream valley.*

Bear Creek, a tiny stream that is not normally navigable, would become a semi-artificial canoe and kayak course in its lower two miles. The upper 1,000 feet would be an entirely artificial whitewater slalom course where expert paddlers could practice racing skills. A middle section about 1,500 feet long would be a semi-artificial course of moderate whitewater for intermediate paddlers. The lower mile and three quarters would be an easy section of class I water where beginning canoe and kayak courses could be taught.

The Meldahl Dam Slalom course could probably be operated the year around except for brief periods of severely cold weather in the winter. But its greatest value would be as a site for whitewater slalom racing and practice in the summer months when most of the natural whitewater rivers are too low for paddling.

Although I am not a racing paddler, Ray asked me to serve on his committee to promote the Meldahl Dam Slalom Course. I only had one reservation before making up my mind.

"Ray, is this part of Bear Creek that you are going to use for your slalom course, a beautiful natural area that some environmental organization might want to preserve?"

"It's flat land on the floodplain of the Ohio River that's been farmed for a long time," said Ray. "There are some trees along the creek, and I hope we don't have to cut all of them out to make a good, safe slalom course. I want something that is a little more natural and scenic than they built at Munich. But no matter what we do to it, this lower two miles of Bear Creek is not a place that Nature Conservancy or somebody like that will be worried about. It's just old, abandoned farmland."

"Then I'll be glad to do what I can

---

* Ray received Sierra Club concurrence (via Jonathan Ela, the Sierra Club's Midwest Representative) to proceed with his study of the Meldahl Slalom Course proposal. The question of environmental impact of a canoe slalom around the south end of the Meldahl navigational dam has been investigated by Dr. Stanley Hedeen, biologist and ecologist with Xavier University in Cincinnati. Dr. Hedeen stated that a canoe slalom would not have a detrimental environmental impact if located as proposed. — Ed.
to help get this slalom course built," I told him. "I'll probably never use it myself, but I have a lot of friends who are nuts about whitewater racing, and I'm glad to help promote the sport. By the way, I notice that the northeast Ohio chapter of the Sierra Club was very cool about endorsing this slalom course. They said it would be better to spend the money on saving a wild river."

Ray grinned and shook his head, "I know, and people in the Sierra Club around Cincinnati have been saying that Ray McLain ought to spend his free time trying to save wild rivers instead of promoting an artificial slalom course. But I like wilderness cruising, and I like racing. I don't want to give up one for the other. So I put in as much time as I can on both phases of paddling. And I think slalom racing helps to preserve wilderness rivers. People learn whitewater skills in slalom racing that enable them to safely kayak and canoe on wild rivers. I think the Sierra Club should help me on this thing."

The Corps of Engineers is extremely interested in the Meldahl Dam Slalom Course, and if it can be shown that there will be sufficient use to justify the cost, it is very likely that the course will be built. And if the Cincinnati area can support an artificial slalom course, shouldn't there be such a course near every major city in the U. S.? All that is needed is some available water, and a mile or two of gradient where an artificial or semi-artificial run of rapids can be constructed.

The Mulberry Plan

The most economical way to build an artificial slalom course might be simply to dam and regulate the flow of a natural whitewater river. This approach is being planned on the Mulberry River in Arkansas by the Corps of Engineers, and by the U. S. Forest Service. The American Canoe Association participated in the study made by the Forest Service, and endorsed the idea of damming part of the Mulberry River to regulate the flow and guarantee that the rapids would be navigable during the normally low flow summer months.

In taking this position the ACA has made a move that is going to have paddlers in Arkansas spilling each others' blood. And it just might create a ruckus that will spread to paddling clubs everywhere, and blow up the national organizations like a supernova —just at a time when it looked like we might be gravitating to a unification of the ACA, AWA and USCA.

The difference between Bear Creek and the Mulberry River is that the Mulberry is one of the best wilderness whitewater rivers in the U. S. I once made a fifty mile whitewater cruise down the Mulberry in the first week of April.* There is not one dull stretch of water in that fifty miles. As you cruise through each pool you hear a rapids behind you and a rapids ahead of you. The water is clean, the valley is almost totally wild and natural. The Forest Service study concluded that the Mulberry is the best whitewater river in a five state area encompassing Arkansas, Missouri, Oklahoma, Louisiana and Mississippi. It is the best in a much wider area than that.

The thing that makes the Mulberry so great is not the challenge of the rapids. There is nothing on the river greater than class III, and some paddlers would probably rate the entire river class II. I ran it in an open canoe with camping gear on my fifty mile cruise at an easy level—high enough to run but not so high as to put water in over the bow.

It is the almost total wildness of the Mulberry River valley that makes the Mulberry exceptional. This river is the way it has always been.

The magic carpet

Jim and Ruby McAllister were the first canoeists to paddle the Mulberry River (it was "discovered" in 1959), and Jim said it all about wilderness cruising when he wrote, "My canoe is a magic carpet that takes me to the quiet places, where things remain the way that God made them."

Jim was writing about the Mulberry and every wild river that has not been improved by men. Would the Mulberry be improved if a dam saved water in

the spring, and released it in the summer so that whitewater paddlers could enjoy a longer season of paddling?

I don't think so. The natural cycle of high and low water has made the Mulberry River valley what it is, and I don't think the Forest Service or anyone else completely understands how river valleys are made. Aquatic life in the river and vegetation on the sand bars and terraces are adapted to the natural flood and drought cycle that goes with the seasons. Most environmental studies are made to find out what has gone wrong when men have messed up an ecosystem. I would like to know how the undisturbed ecosystem in an undisturbed river valley works. My wilderness cruising trips are amateur studies that are important to me because I enjoy them.

Wasted water?

My fourth day on the Mulberry River that April weekend was very educational. A gentle rain began as I put in on the river in the early morning, and the rain gradually increased until it became the damndest thunderstorm I have ever experienced. Seven inches of rain fell that day. The river rose several feet in a few hours. Waterfalls sprang into existence in the most unlikely places. For three days I had been paddling the deepest channel in each rapids, but that day I began to skirt the waves and run near the banks. The river came up with a rush, but it remained clean and clear. The forested watersheds held the soil, most of it, and convinced me that a truly wild river has its own flood and erosion control system. It was a day I'll never forget, and I am glad that there wasn't a dam to hold back some of the rise and save the water for summer paddling. Maybe it was extravagant to give all that beautiful whitewater to one canoeist on one day, but it was not wasted water. It was a quality experience, and that's what wilderness cruising is all about.

So the Mulberry is too low to paddle during most of the summer. If you really love the wilderness, summer is an excellent time to backpack in the Mulberry River valley. If your trail crosses the river frequently, you will have no difficulty wading across. The algae in the river, the mayfly midges; the snails and turtles, the fish, everything that lives in the river is accustomed to the long, hot summers when the water is low and warm.

What's a wild river for?

We should remember that a wild river is not just for people, and not just for recreational paddling. Public Law 90-542, 90th Congress, S. 119, October 2, 1968: "It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

Criteria for Inclusion in the National Wild and Scenic Rivers System: "All rivers in the national system must be substantially free-flowing . . .

The wild rivers are not primarily
playgrounds for paddlers. Paddling organizations did not have much influence in getting the national riverways system created. Strong environmental organizations like The Sierra Club, The Wilderness Society and The Ozark Society provided most of the political clout to pass a wild rivers law.

But it is true that the paddlers have benefited most from the wild rivers system, because we have the skill to travel turbulent waters through remote valleys. It would seem that the American Canoe Association, and the other paddling organizations, should not now forget who our friends are when it comes to saving rivers.

Not just half a loaf

The strongest environmental organization in Arkansas, and the one that probably has the largest number of paddlers of any group in Arkansas, is The Ozark Society. The Ozark Society was born at a hearing conducted by the Army Engineers in 1961 to consider dams on the Buffalo River. At first the engineers proposed two dams that would have eliminated almost all 100 miles of the Buffalo. Later they suggested one dam that would take a third of the river, and improve the paddling recreation on another third of the river. The Ozark Society didn’t buy half a loaf. They saved the whole river by winning over every national and state politician in Arkansas.

I asked some friends of mine who are Ozark Society members how they felt about improving the Mulberry River by regulating the flow. Their reply was shocking. The full resources of that organization are going into an effort to preserve the river and the valley as a wilderness with no dams for any purpose. I expect to see Nature Conservancy, The Sierra Club, The Wilderness Society and other environmental groups behind the wilderness plan for the Mulberry. The Forest Service likes the wilderness plan also, and the slalom course plan is only an alternative study, not a switch in direction that they are committed to.

Paddlers vs. paddlers

Today it is the Mulberry River where paddlers disagree with other paddlers, and a paddling club is promoting a dam that would degrade the quality of a wild area.

I expect this conflict may soon arise on other wild rivers in other regions. I think the ACA should reconsider their endorsement of the improvement of the Mulberry, and should instead endorse the wilderness plan of The Ozark Society.

Paddling is a rapidly growing sport, but will paddling organizations ever become strong enough to really have much influence in saving rivers? Not if we begin fighting among ourselves, and set the slalom racers against the wilderness cruisers in bitter argument about dams on rivers.

Wilderness cruisers should support racing, because it is a stimulating sport that gives pleasure to so many paddlers, and because it advances equipment and techniques that are valuable in wilderness river travel. And racing paddlers should not try to develop high quality wild rivers for the specialized purpose of recreational paddling. Wild rivers are rare, and men can’t build one or restore one after it has been impounded. But an artificial whitewater course can be built in many places where there is no conflict with wilderness values.

We should consider racing and wilderness cruising like the bowman and sternman in a canoe. There’s no point in arguing about which is more important. We had better work together to go around the same side of a rock, or we’re going to broadside on that rock and bust up our canoeing organizations.

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<tr>
<td></td>
<td>Spoon blade—8 3/8&quot; wide x 2 1/2 long</td>
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<tr>
<td>LENGTH:</td>
<td>78&quot;, 80&quot;, 82&quot;, 84&quot;, 86&quot; oval shaft.</td>
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<td>WEIGHT:</td>
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DO WE NEED A COALITION ON AMERICAN RIVERS?

By Gerald Meral, AWA Conservation Chairman

Since the passage of the Wild and Scenic Rivers Act in 1968 river preservationists have focused their legislative efforts mainly on preservation of individual rivers, and opposition to dams, canals, channelization, and other river-wrecking water projects. In the last few years we have seen the public works pendulum swing somewhat away from water projects and toward the control of water pollution. Harbingers of this movement have been the favorable reports of the Water Resources Council and the passage of the 1972 Water Pollution Bill.

Perhaps given these favorable signs we should simply continue our present activities: lobbying, letter writing, and researching individual water projects and wild rivers, with an occasional ad hoc alliance to deal with national reports and legislation.

But I think there is good reason to give all this activity more of a foundation. Bruce Hannon (leader of the battle to preserve the Sangamon River and Allerton Park in Illinois) has suggested a Coalition on American Rivers, which would lobby and supply information to various groups fighting the Corps and other agencies. I believe such a formal coalition would be of great importance to the future of American rivers. The Water Lobby is by no means finished. In this year's "austerity budget" the Corps of Engineers receives 1.5 billion dollars, the Bureau of Reclamation 300 million, and the channelizing Soil Conservation Service 300 million. The Rivers and Harbors Congress (the developers) still is actively pushing for such fossils as Cache River Channelization, New Melones Dam, and many others. Conservationists do not presently have an organized countervailing force.

Our coalition would be made up of all the various organizations around the country working on river preservation, including national groups like AWA and the Sierra Club, and local or state groups working on individual river projects. A newsletter dealing exclusively with river conservation problems has already been started in Ohio, and could be used to transmit information. The principal activity of the coalition would be lobbying in Washington for such national policies as a higher interest rate on water projects, implementation of the recommendations of the National Water Commission (including phasing out the construction activities of the Corps and
Bureau of Reclamation), addition of several new rivers to the Wild and Scenic Rivers System, and cutting off funds to ongoing destructive dam and canal projects. The lobbying would be coordinated by a full time Executive Director. A start on such a program has been made by the Washington-based Environmental Policy Center, but there is need for a full time effort on rivers alone.

The coalition would be composed not only of canoeing groups such as AWA but also of fishermen, hunters, hikers and others who use rivers. While an effort would be made to establish a broad membership among individuals, most of the funds would be raised from individual river action groups. Members would pledge to devote a certain percent of their time to legislative effort each year.

An important question is whether such a new organization is needed, or whether an existing one could undertake this venture. I think a new organization is needed for the following reasons: (1) AWA and others of its type are too special-interest oriented, and too limited in membership and funds to appeal to a wide enough spectrum of organizations. A truly national broadly-based constituency is required. (2) Coalition politics are best done through the use of a blanket organization. That way no one group gets all the credit, and more separate organizations are attracted. (3) Although AWA and ACA have many constituents, there are far more clubs, committees, and action groups which do not affiliate due to the essentially single minded conservation purpose of their organizations. A national river conservation organization would appeal to conservation interests without the diversions of safety, touring, and racing.

Since I first suggested this idea a few months ago there has been a strong response from a number of people trying to preserve rivers. I would be interested in learning from AWA members whether they think such a new organization would help or hinder their own and AWA's efforts in river conservation. Please write me at 2928B Fulton, Berkeley, CA 94705.
Super Spray Skirt for Canoes

By Phoebe Chardon, Jefferson, NH 03583

Nyloprene spray skirts for their C-2 were number one on our sons Marc and Steve’s Christmas list this year. Nyloprene, i.e. nylon-backed wetsuit material, allows for far more freedom of movement than other materials, shouldn’t pop off the cockpit at awkward moments, is easy to repair, and won’t allow puddles to collect in the wearer’s lap. If properly made, these skirts reduce leakage to almost zero and are also extremely durable.

Jim Sindelar, author of an article on how to make a K-1 nyloprene spray skirt in the Vol. XV, No. 4 (Winter 1970) issue of the American Whitewater Journal, and valued friend, gave me advice, instructions and the loan of his C-1 skirt originally designed and made by Walt Harvest of Hayward, California.

Nyloprene is available at skin diving supply houses at a cost of approximately $50 for a one-eighth inch thick, 40 inch by 10 foot piece. From one such piece it is possible to make four of these spray skirts. In addition you will need wetsuit glue, also from a skin diving supply house, and ¼” or ½” surgical tubing. The wetsuit glue I purchased for $1 per can has no weight or size mentioned on the label.

The can has a 2” diameter and a 2¾” height, and it took slightly over one can per spray skirt. Surgical tubing can be purchased at a hospital supply or drug store for around 25¢ per foot. I used 4’ of tubing.

The design detailed below is for a circular cockpit opening 18 or 19 inches in diameter. If your cockpit differs in size and/or shape, the dimensions of the various pattern pieces will have to be modified accordingly. Note that these spray skirts require cockpit coamings that are somewhat wider than normal. The recommended cockpit coaming would be about 1¾” in width, with vertical clearance of at least ½” between the rim and the deck. If you find it necessary to modify your coamings (well worthwhile), the best way is to build some sort of temporary form under the existing ones and then laminate new, wider rims onto them. A good system for making a temporary form is to find some hose which has a diameter of ½” or so and lightly contact-cement it to the deck of your boat around the cockpit, tucked under the existing rim. Then cement a second length of hose to the deck outside the first so that you have two rounds of hose side by side around the entire
cockpit. Finally, use masking tape to bridge the gap between the two rounds of hose all around. This will give a nice foundation upon which to laminate the new, wider rims, which might consist of perhaps three layers of fiberglass mat. Trim to final (1¾") width with a knife while laminate is still somewhat green—or trim with a grinder after fully hardened. Do not remove the forms too soon (alternatively, stick them back in after trimming and leave until fully set up) or the shrinking of the cooling laminate will pull the rims down toward the deck, reducing the clearance somewhat.

Assemble in one place (in my case, the dining room table!) the above materials and pencil, newspapers, masking tape, chalk, yardstick, scissors, nylon carpet thread or braided fishline, a piece of beeswax, and cleaning fluid (such as Energine, Carbona, etc.).

The skirt is made in four major pieces (see Fig. 1). Cut one 7¾" x 27⅞" hip band. The skirt rides on the hips. The directions given here should fit hip sizes 34"-40". Add to or subtract slightly from the length of hip band and the fold end of Piece I if hip size varies from above substantially. Cut one 48" x 3¾" piece for the rim strip of spray skirt. Using newspaper, enlarge patterns (see Fig. 2) for other two pieces (one square equals one square inch), tape patterns to nyloprene with masking tape, and cut out the pieces. In addition to the four main pieces, two 2¾" x 4¾" reinforcements are used.

The next step is to complete the hip band by joining the ends together in a butt joint. Paint glue on (7¾") ends of hip band. Note: THREE COATS OF GLUE ARE USED IN ALL GLUEING. Wait 10 minutes or so between coats. Push (butt) ends together after the third coat loses its gloss. Stuff hip band with crushed newspaper so that it will stand up with the bottom flared out slightly. Mark the mid-points of bottom of hip band and top of Piece 1 with chalk. Paint glue (3 coats) on bottom edge of hip band and top edge of Piece 1 (edges only as this is another butt joint). Now join Piece 1 to the hip band. Note that the hip band joint is in the rear and the joint in Piece 1 is in front, thus avoiding the weakness of aligned joints. Align chalk mark on Piece 1 with butted joint on hip band and press together for an inch or so. Being careful not to touch the glued surfaces to each other along their length, stretch one half of Piece 1 till
the end reaches the chalk mark on the bottom of the hip band. Press together for an inch. Ease or stretch materials between the two points which are now glued so that they meet and bond smoothly. This requires some manual dexterity and a good deal of care! Repeat above operation for the other side of Piece 1. Glue and butt ends of Piece I.

Next join the hip band/Piece 1 assembly to Piece 2 as follows: mark midpoint of Piece 2 at top with chalk. Paint a 1½" strip of glue on rubber side (inside) of front bottom of Piece 1 and nylon side of top of Piece 2. Paint the ends of Piece 2 with glue, and the appropriate portions of Piece 1 so that they may be butted (point B on diagram). Form a 1" lap seam between the bottom of Piece 1 and the top of Piece 2, using the same method as was used to glue the hip band to Piece 1 (stuff with crushed newspaper, align chalk mark with butted joint, press butted joint together at point X, ease material along the joint to be glued).

The next step is to make a continuous loop of the surgical tubing by serving the ends together. Bring together the ends of the 4' length of surgical tubing with a 2" overlap. Wax length of nylon carpet thread or fishline with beeswax. Prestretch the joint area of the tubing nearly to its limit and whip the surgical tubing securely together. This can be done by clamping both tubes at one side of the joint in a vise and holding them under tension by pulling quite hard as you serve. This makes the tubing skinny when you do the serving. When you relax the tension after the serving is complete, the larger (relaxed) diameter will make the serving even tighter. If you wish a grab loop, you should allow for that in excess of the 4' length. In existing spray skirts of this design a grab loop is necessary as the skirt comes off the cockpit reliably when you bail out.

Glue and butt ends of 48" x 3¾" rim strip. For the next operation Jim Sindelar in his K-1 article recommends a wooden form the size and shape of your cockpit made of 2" stock. I scouted around the house and found a galvanized tub which when inverted had the same circumference as our C-2 cockpits. Make four evenly spaced chalk marks (every 90 degrees) on top of rim strip. Put rim strip on form, tub, or trashcan, rubber side out. Slide ring of surgical tubing down over the form until it rests in middle of rim strip. (If you have a grab loop you must punch a hole in the nylonprene and pull the loop through to the underside at this time.) Fasten tubing in place with pieces of double-sticky tape, available at hardware stores, if necessary to prevent slipping. Paint glue on rim strip above and below surgical tubing. Make four evenly spaced chalk marks on bottom of spray skirt assembly. Paint 1½" strips of glue completely around the circumference on both sides of bottom of spray skirt assembly. I used a larger brush for this operation than that provided in the glue can, as there is quite an area to be covered. Any spot remover, such as Energine or Carbona, will clean the brush and any glue on your hands.

Find a helper. Using two pairs of hands, stretch spray skirt assembly over and onto section of rim strip above surgical tubing on tub, lining up chalk marks and easing material. Fold bottom of rim strip up over the tubing onto glue-coated outer surface of spray skirt assembly and press. Surgical tubing should now be encased in rim strip at very bottom of the spray skirt.

Paint glue on rubber side and bottom of 2½" x 4¾" reinforcements and rubber side (inside) of spray skirt and top of bottom band around points X. Press in place. Finished!

(Ed. note — Special thanks to Phoebe for taking the time and trouble to write this up for us. We can certainly recommend the design highly, having used ours extensively for the past four years. They are still going strong, the only necessary repairs having been to reglue a seam or two. Everyone who has seen ours has asked for details, so finally, here they are)

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