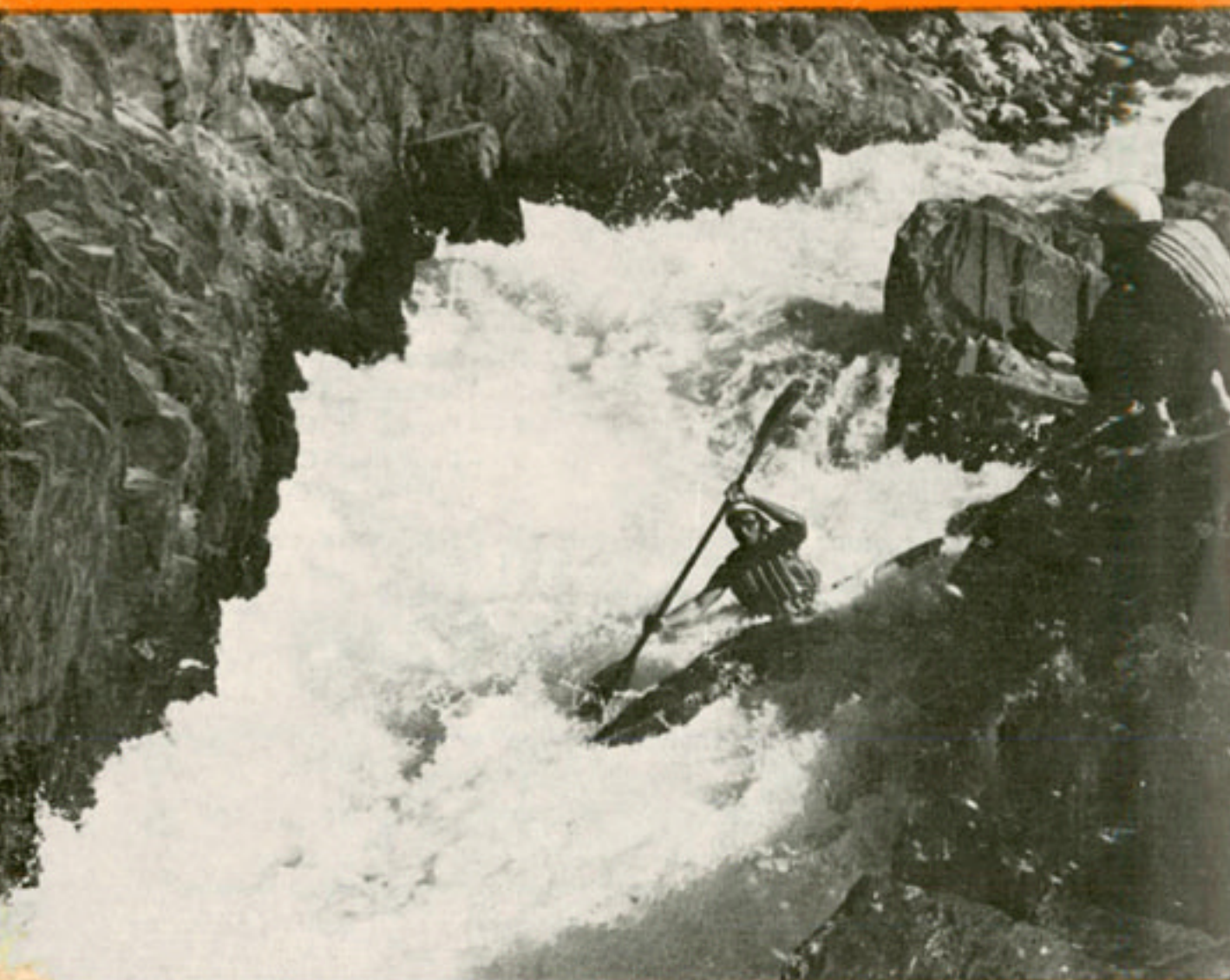


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the Journal of the American White-Water Affiliation



WINTER, 1970

Vol. XV, No. 4



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The Wild Middle American

By Charles Martin, Berkeley, Calif.

Despite the long river-running seasons in northern California, October is a dry month. When Pacific Gas and Electric "turned off" the South Fork of the American, it looked as if we would be hard-pressed even for novice runs. But then Dick Sunderland found that water was being released from Hell Hole Reservoir on the Rubicon and, after being piped through a number of power projects, was filling the Middle Fork of the American.

Dick wanted to run a 15-mile section from the Rubicon-Middle Fork junction to the old Greenwood Bridge. Carl Trost and Fen Salter ran it a long time ago, but otherwise that stretch had been ignored by boaters. Carl was a little hazy about the run. All we knew for sure was that the river went through a tunnel at one spot and that part of the Rucky Chucky Rapids required a portage.

Dick, Carl, Bill Hewlett, and I got together with two newcomers to California, Gunther Hammersbach and Al Chase, on October 11. After an arduous (even by California standards) car shuttle and a short paddle on the after bay of the last power plant, we quickly left all signs of civilization.

What a fine river! With about 700 cfs it felt like a spring run: good powerful water and fine scenery. Each rapid had such enjoyable eddies and surfing waves that we found it difficult to stop playing and go downstream. Eventually, we made the three miles to the tunnel. The river bed makes a long ox bow bend, doubling back to within 50 feet of its starting place. Some miners, apparently desiring to investigate the river bed, had blasted a 25-foot-diameter tunnel through the rock to short circuit the ox bow. Having plenty of head room and calm water, there is no difficulty paddling through the tunnel. However, a narrow chute rough-blasted through rock above the tunnel carries the water to the tunnel entrance, and the combination of steep gradient and rough sides keeps the chute flow extremely turbulent.

All of us decided to portage to the tunnel mouth except for Al Chase, our one C-1. He felt that the chute could be run, but even the tremor in his voice betrayed his respect for the danger. For two hours Al paced back and forth, examining every difficult spot, discussing a course with Dick. The rest of us had lunch. Finally, Al got into his boat, while we all went for our front row seats, cameras in hand. The C-1 slid slowly over the rapid leading into the chute; Al seemed too scared to paddle hard. He started through the chute much slower than I expected. As we got our cameras clicking, he made a few correcting strokes, calmly going down the chute as if there were no problem at all. Then he grazed the wall slightly, bounced off, and hit the back wave at the bottom. A pull on the paddle and the C-1 was through! It looked easy. (See photo on cover)

Dick tried next. His strong strokes got him through the chute well, but the final back wave ate him up, and he got caught in another hole before he finally rolled up. He warned me that the final part was really treacherous—and I portaged my boat back to the top to run the chute. What a sensation of turbulence! It may not have had the force of an ocean wave, but everything was so mixed up that there was no telling where to brace or how to maneuver. Suddenly, in the middle of the chute, my boat lurched on its left side. A frantic brace on the left side sunk. I was just about over in this cauldron, when some strange current caught the tail end of my brace and pushed me back up. Two strokes and I crashed into the final back wave. I braced and dug my paddle in, and landed safely in the tunnel.

We found a few more rapids below which required scouting. I call them Class V; Dick calls them "mild IVs." Gradually the river flattened out for the long touring stretch of about 10 miles. With fine scenery and a few rapids for change of pace, it was quite enjoyable. We all made good time,

paced by Gunther in his downriver kayak.

Sooner or later, we knew the Rucky Chunky Rapids would hit us with some big action. Carl said we would know it when we came to it. Sure enough, a Grand Canyon roar told us to get out and scout. The first rapid featured heavy water tumbling around huge boulders. The only course down required two difficult turns. Gunther found his downriver boat couldn't quite handle the first turn, requiring him to spend some anxious moments resting on a boulder with water pushing him hard onto the rock.

The next Rucky Chunky drop was one of those lovely natural wonders which itself would be enough reason to make the trip. Boulders the size of a 747 jet were strewn all around. The river filtered through them, dropping 25 feet in 75. The size of the boulders made the portage quite strenuous. When Carl previously ran this stretch, there was a portage road on the right bank. Unfortunately, the Hell Hole Dam broke while under construction a few years ago, and the resulting surge of water took out the portage path as well as many other features of the canyon bottom (such as the Greenwood bridge at the take out).

Soon after completing this carry and getting our boats back in the water, we found another rocky drop steep enough to require a portage. This was the end of Rucky Chucky. From there we had a peaceful mile down to our car and warm clothes, arriving at 7:30.

This stretch of the Middle Fork was typical of the best rivers in California: good scenery in a wilderness run, exciting rapids, and interesting special features of the tunnel and Rucky Chucky Rapids. In a few years it will be visible only to skin divers plunging deep into the backup from the new Auburn Dam.

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Getting Beginners Started

By Liz Hull

Take a dozen aluminum canoes and an equal number of instructors; place them on a snowy river bank, and confront them with a horde of about seventy aspiring beginners. The result is a mob scene reminiscent of the suicidal mass migration of the lemmings.

This was the situation which faced the Connecticut Chapter of the Appalachian Mountain Club about eight years ago, when it first began a program of novice white water instruction. The cold March weather, the limited time each person was given for instruction in the canoe, and the general chaos did little to foster much enthusiasm for the sport and many never returned to participate in the club's white water program.

Over the years through trial and error, adapting ideas initiated by other groups such as Boston AMC, the following program evolved.

The AMC Bulletin listing the club's activities, gives notice in August under the Conn. Chapter heading, of a flat water registration and screening session to be held on a small lake during

the week end after Labor Day. At that time all interested persons, club members and non-members alike in the Connecticut area are invited to come for one day, at which time, starting around 10 a.m. they are given an introductory dockside briefing and demonstration of the techniques of boat handling and safety as used in white water. Later in the morning, using equipment provided by the club, participants who must be swimmers and self-confident in the water, may practice in the canoes with instructors. Children are generally not started until about age 14.

During lunch a movie is shown introducing the subject of white water sport in its various degrees of skill both in cruising and competition.

After lunch, those who have had no previous training who wish to continue on to white water must register in person at this time, and complete a simple exercise maneuvering a canoe with an instructor or other partner through and around an English gate.

Because the demand is far greater than the limited capacity of the

club for giving instruction, there has to be a way in which those who are best qualified can be selected for further training. The aptitude of the applicant can to some extent be judged by the test. The questionnaire on the registration form, plus informal interviewing by the instructors to ascertain interest and need for training, are all factors taken into consideration.

Those registrants accepted are required to receive two full days of instruction on a river of suitable difficulty, with a choice of days during two consecutive week ends following shortly thereafter. The novice runs with an instructor in the canoe, working with two different instructors daily, in the bow and then the stern each day. At the completion of this program, the novice is given a Class 2 rating, and becomes eligible to participate in any of the club's scheduled Class 3 trips which usually begin the following March and continue each week end until early June. The beginners may continue to make use of the club's equipment on these trips, at which time the leaders balance the strength of the group by putting experienced paddlers whenever possible with novices so that their training continues beyond the formal program. This way they can eventually qualify for a higher rating, becoming eligible to run more challenging rivers.

The high caliber of paddler the Conn. Chapter has been able to produce in a minimum number of trips, and the number of beginners who have returned and become part of the vital resources of the group have proved that the time, effort and care which go into setting up such a program are well worth while.

The program is organized and operated by a volunteer coordinator from amongst the group, and the group's wholehearted support of that person is the key to the success of such a program.

The accompanying photo by Mr. G. V. "Pat" Powning are of novices on their first white water run, negotiating the Spoonville Dam, just below Tariffville Gorge on the Farmington River, Connecticut. Betty Forsberg is emerging from the standing wave.



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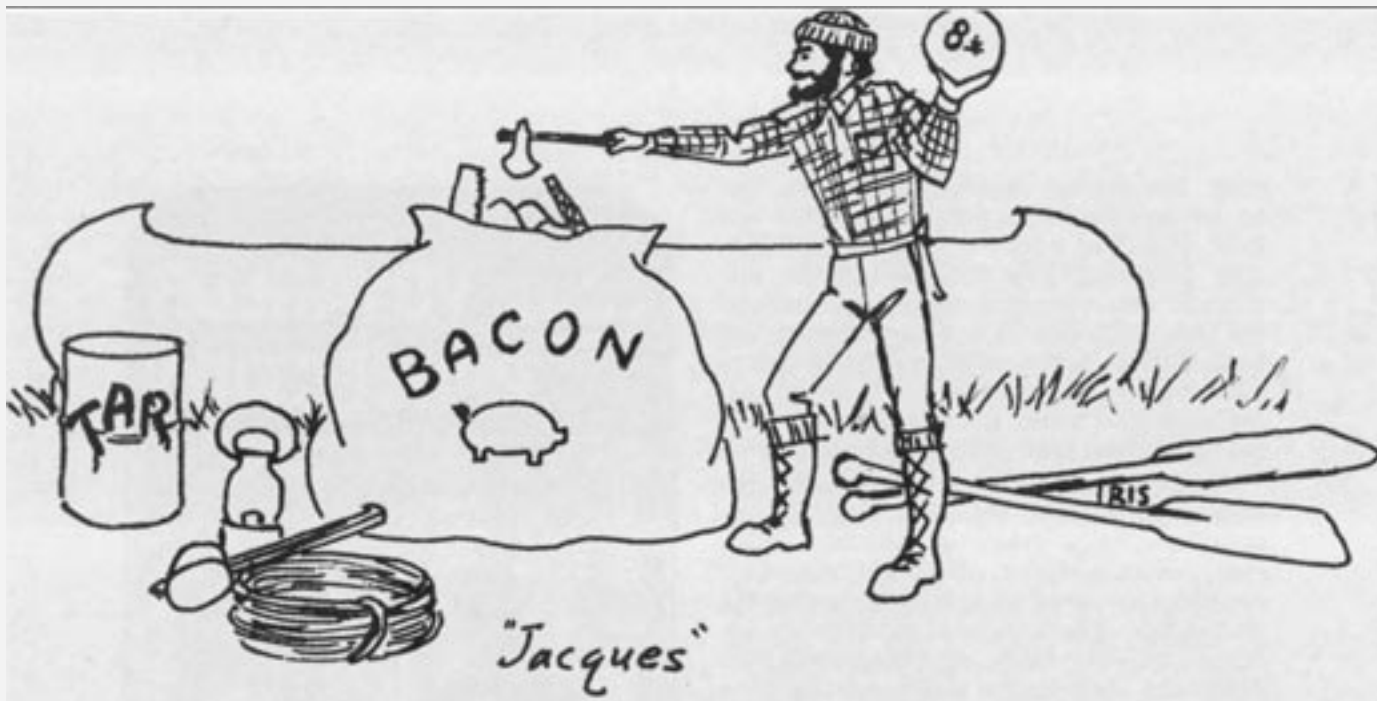
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Canoe Camping

Curtis Finley

Before World War II most authoritative books and articles on canoe camping were written by professors of English or Boy Scout leaders who did their canoeing east of the Mississippi. Out of humility they always declared that they were rank amateurs, **but** they all knew a north woods guide named Jacques who **did** know everything. To the best of my knowledge there has never been anyone named Jacques. He is a sort of Kilroy.

On the matter of equipment, Jacques advised a snakebite kit for each limb of each member of the party (one can multiply each kit by four for the answer), a file, ax stone, ax, adze, small hatchet, full hatchet, lath hatchet, cross peen, tie hacker, nail file, 4-lb. sledge, folding saw of a special Swedish steel (like all good things no longer made), bleeding knife, skinning knife, all-purpose knife, night light, table saw, meat hook, manila line, 50-gallon keg of tar, paper weight, and an 8-lb. kid-covered cannon ball to be rolled at random over the abdomen to prevent constipation. Jacques packed these in an old bacon sack which was his trademark. Like all true woodsmen he was very vociferous about traveling light. Jacques lived out of his bacon sack: in the winter it served as his underwear; in the summer he carried maple sugar in it. Jacques had to be a master at impro-

vising. In the evening, after camp was set up, a well dug, two latrines built, and lean-tos made from a just-certain-type-of-pinebough, he usually constructed a rustic porch glider, aeolean harp, humidior, and bark bedroom slippers from forest scraps.

It is with deference to this great man and his devoted followings that I continue with some further thoughts on canoe camping.

There are those of a frailer cut than Jacques, but not necessarily the types who prepare food in pressure cookers or take portable TVs on canoe floats, or have air-conditioned tents or wear aprons that say "Call me Cooky" on the bias. There are those who like wilderness areas but don't feel they have to turn over a canoe to do it up properly. They don't like to skin ducks or shoot fish. They are the eccentrics who prefer comfort without plushness, who don't think of risk and adventure as synonymous. Here are a few suggestions on what to take along for newcomers to this group:

Bread: Don't take that substitute bath sponge known as enriched bread. Take a nice Jewish egg bread or a pumpernickel; it will keep much better and handle more easily if unsliced. This bread gets better as it gets older; when it becomes positively petrified it may

be hollowed out and used for a shaving basin or a pith helmet.

Fats: By all means take olive oil. Bread was meant to be eaten in torn chunks dipped in olive oil with possibly a bit of salt. Onions picked wild go well with it. It is said that a man can work almost indefinitely on a diet of bread and onions. Olive oil will not go rancid in the duration of a camping trip, and it keeps the body nicely tuned, despite the irregular and poorly balanced meals which often go with camping.

Lettuce: Keeps very well without refrigeration and is elegant to the letter at an evening meal along with washed watercress, if you have passed a spring, and onions. Bring along a plastic bottle of vinegar and you can splash it on with olive oil for dressing.

Wine: A dry wine is another must which Jacques couldn't shake out of his backon sack if his accent depended on it. A glass of light wine is the perfect denouement to a series of rough ruffles or to the midpoint of the day's float. If you are an imbibor take some of nature's gift on your next trip. The cork may possibly be thrown in the stream or fire in a moment of wild abandon, but the bottle goes in the trash bag and is kept there until you are back home, at which time no one will mind if you throw it on the living room floor. While on the trash bag subject, you might wish to take up a few beer cans left by your fellowman — the "Thinker." It really gives one a good feeling to know that his presence has caused an improvement rather than a blot on nature.

Stoves: A camp fire is certainly desirable for cooking if driftwood is handy and you are bright enough to keep from igniting the countryside and singeing Smokey's jeans. The bottled gas stove is classed with the portable TV by some, but we take exception. Have you ever put up a tent in a storm? Any wood will be pretty soggy then and very few people will build a campfire on a tent floor. Anyone is given heart, however, by the thought of a cup of steaming tea when the job is done. In fact, the breakfast coffee given above with an extra tott of rum

has proved incentive to some as late as midnight.

The average campfire is started with a Sunday issue of the "New York Times," soaked in fuel oil and lit with an acetylene torch. An occasional stick of wood may be thrown on to put it out.

Finally, **artificial light** is a necessity. The common camp lantern is bright enough to lift a grizzly bear's rear end to the cavern roof and will burn the swimming trunks off any creature within a hundred yards. It is used by campers to turn the night into an approximation of a middle class living room. Don't take one. Bring an old-style kerosene lantern. They throw a soft dramatic circle of light that is not blinding. You can see the stars and wonder about the sounds around you and probably make history for mankind by not driving out the very thing you seek.



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CACHE CREEK

By Fran Cutter, Sierra Club, San Francisco, Calif.

(Editor: Cache Creek is the outflow of Clear Lake, California and flows into the Sacramento River just north of Sacramento. The most popular run, Class 2½ in the summer, starts about 11 miles above Rumsey, a two hours' drive from San Francisco.)

Cache Creek affords something for everyone. The upper-upper 6½ miles drops 83.3 feet a mile. The next 19 miles, 20 feet a mile. This section is a beautiful over-night trip. At low water, there is one portage, about 2 miles from the take-out, Highway 16. The usual put-in as at this point, which is the Yolo County-Colusa County line and the confluence of Bear Creek, an easy 6-mile rock slalom with a couple of easy Class III rapids. If the water is up, the run from the bridge, through Row Boat Rapid is more challenging. Rumsey to Guinda—6 miles, canoes and beginning kayakers. Guinda to Capay Dam, 15 miles, Class I with one Class III and an old washed out dam or road below that to watch out for. Capay Dam, watch out for that, too. Someone "missed" a few years back and was found many days later. In fact, the farmers take a dim view of boaters in this last stretch, so why not run to Rumsey, instead. That's the part you might not see again, anyway.

Cache Creek Gorge Threatened

There is really nothing an individual can do about saving a river. Not unless

you have a thorough knowledge of such things as feasibility reports, water law, cost-benefit ratio. At best, you have to be an expert white water boater. It would also help to be a congressman; at least you might think so!

At first, several of us were flattered when the Dept. of Parks and Recreation came to us for information when the Protected Waterways Program was getting under way. They knew next to nothing about "river use," and zero about the scenic and recreational values of most of our rivers. We began to see that in many ways we were the experts! In fact, the Dept. heads were actually human beings struggling like the rest of us to keep their facts straight and even made a mistake now and then!

The Cache Creek Conservation Committee was formed by a group of kayakers who had had many enjoyable times on the river and had heard rumblings of one dam or another. We wrote for bulletins, read engineering reports (interesting, believe it or not). We began writing a few letters—the local Chamber of Commerce was the first. We ran some river sections we were not familiar with, talked to the local people. We finally decided there had been enough interest in the area by the Corps of Engineers and Bureau of Reclamation that probably the river and

valley was doomed unless we did something rather soon. It was logical to contact the local Water District, the Congressmen and Assemblymen for the area. And things began to happen. A few articles in the local papers, an irate farmer, a joyous one! A scared Assemblyman, a jubilant Congressman Waldi! and we had a bull by the tail! It had been relatively easy to scare up a great deal of enthusiasm — and controversy.

Last year, conservationists won a reprieve on the Eel. The High Dos Rios Dam was defeated, for a time, at least. The Bureau of Reclamation was back to the drawing boards, designing a new set of horrors called "Dos Rios Alternatives."

Most of us who have been river touring a few years, have had a favorite run or two go under. We've all become armchair engineers, played the game, "which canyon has the best dam site?" Actually, this is a game for experts only, because there aren't too many canyons left. There are a few rivers that are so free of suitable sites that they are game-free — ever been to Cache Creek?

If not, you had better go to get a last look. The B.O.R. is exchanging our backyard for the North Coast. Called "Blue Ridge Dam," this will be, if built to maximum feasibility, the highest earth-fill dam in the world, 800 feet. (Oroville is 770 feet.) If they chicken out, it will only go 675 feet. (New High Aswan is 350 feet); or if we do something, it won't go at all.

(Extracted from the Sierra Club River Touring Section News Bulletin, Editor, Sam Gardali, Modesto, Calif.)

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The U.S. Army Corps of Engineers

By Marcia Hayes

From "This World," a section of the San Francisco Sunday Examiner and Chronicle, November 8, 1970.

Around Washington, they're called the Pork Barrel Brigade. Around the Sierra Club and other conservation groups, they're called a lot of other things, most of them unprintable.

The average U. S. taxpayer usually doesn't know what to call them. He only has a dim idea of who they are and what they do. Yet he foots all of their bills. And the bills are very big. Like between \$1.5 billion and \$10 billion each year.

Anywhere else, for instance in your local phone book, they're called by their rightful name: The U. S. Army Corps of Engineers. And they're a burgeoning bureaucracy that already encircles the globe and has its surveyors' sites set on the moon.

Political Pork

Few people familiar with the Corps' activities can take an impartial view of the agency. So depending on who you're talking to, the Engineers are either the government's biggest boon or its biggest boondoggle. The controversy stems, in large part, from the Corps' role as the nation's most conspicuous consumer of political pork.

In case you've forgotten your high school civics, "Pork" (according to Webster's) is a "fund of money appropriated from the Federal Government, as for improving Rivers and Harbors . . . regarded as appropriated more for needed improvements."

\$25 Billion

The language may be heavy, but the description is apt. Over the years, the Corps has managed to sink more than 25 billion tax dollars under water. From Long Island to Santa Barbara, and from Kennebunkport to Key West, the Corps is up to its hip boots in H₂O.

Whether the water is salty or fresh, pure or polluted, the engineers seldom miss an opportunity to dam, dredge, dynamite, or drill their way through it. Though it competes with 38 other water resource agencies for the taxpayer's

dollar, the Corps has managed to outdredge and outbuild them all.

During the last century and a half, Engineers have marched across thousands of liquid miles, raising 9900 miles of floodwalls, building more than 19,900 miles of canals and seaways, and clearing 7500 miles of channels.

Power Plants

As of last year, the Corps had also constructed 46 hydroelectric power plants with a combined power output equal to Sweden's. In the course of it all, the Engineers have had their dredges and dozers in most of the nation's harbors, ports, estuaries, and major lakes.

And, to their credit, they have enabled dying riverfront towns to become, in effect, ocean ports through deepening channels.

Their knowledge of flood control has helped dozens of Mississippi and Ohio river towns avert annual disaster with well-engineered dams and dikes. Over the years the Corps has also constructed a lot of economically worthwhile reservoirs—like Kentucky's Barclay Lake, which has drawn thousands of tourist dollars into a badly depressed area.

And when hurricane tides ripped through Gulfport, Miss., last year it was the Corps that rebuilt its roads and bridges, putting the town back on the map.

There is no question that the Corps has saved lives, saved cities, saved beachfronts, and their press relations officers have told that part of the story well.

The Other Story

But there is another part of the story—many believe a bigger part—that seldom if ever gets into print, and that is of the billions spent on projects, that, when all the factors are added up, leave the situation worse than it was originally. This is the story that must be told now, when Americans at last are taking a look at what is left of their country and wondering where we went wrong.

Because of their immense economic resources, a lot of people love the Corps. Real estate developers, for instance, who speculate on the marshes and swamps that the Engineers drain, are among their greatest fans.

Other enthusiasts are power companies, which enjoy the cheap kilowatts, construction firms that appreciate the jobs (the Corps farms out 98 per cent of its contracts, according to an engineering trade magazine), and shipping firms, which are grateful for the government-built waterways that allow them to compete successfully in an age of air, truck, and rail.

But because of their apparently endless acological escapades, most conservationists loathe the Engineers. Supreme Court Justice William O. Douglas dubbed them "Public Enemy Number One" and the late Secretary of Interior Harold Ickes topped that when he said "no more lawless or irresponsible federal group that the Corps of Engineers has ever attempted to operate in the U. S. either outside or within the law."

Yet, despite the growing ranks of its enemies (which include every major conservation group in the country, the Corps has managed to remain relatively anonymous to the average taxpayer. And it is difficult for anyone, in fact, to pin down the exact amount the Corps spends each year.

On water resources projects alone, they spend more than \$1.2 billion annually. But because they do so much contracting work for other agencies who finance them from their budgets, it is hard to put a price tag on their other activities. One former Corps employee put the amount at upwards of \$10 billion a year.

Debris Fighters

The men who founded the Corps of Engineers couldn't have foreseen that things would turn out this way. The Corps' beginning were relatively small, as an agency founded during the Revolution to keep navigable waters clear of debris—a job they still do very well.

Dissolved a few years later, the Corps was revived again at West Point in 1824 (Engineers were the first cadets to

stand on the long, grey line). They were then given directions to "remove sand bars from the Ohio River, and planters, sawyers, and snags from the Mississippi . . ."

After that, things began to get out of hand, bureaucratically speaking. Today, the Engineers have the awesome responsibility for "the execution, maintenance, operation, and control of river, harbor, and flood control improvements . . . and for the administration of laws for the protection and preservation of navigation and navigable waters in the U. S."

Between the first snag and the latest sand bar, the pork barrel has gotten a lot lighter. Today the Corps has more than 4500 water resources projects on its drawing boards at a projected cost of more than \$33 billion. And as any veteran Corps watcher can tell you, actual costs are often twice that of the projected estimates.

More than 50,000 civilians are now on the Corps payroll, in league with a military staff of 10,000 that changes as tours of duty expire. There is also a 35,000-man combat staff serving in Vietnam and another 50,000 or so civilians who work on Corps contracts for other government agencies—like NASA, or the Agency for International Development, or the Atomic Energy Commission.

While the aquatic activities of the Corps are the primary target of conservationists, its operations are not all wet. The Engineers also direct the world's largest mapping agency: The U. S. Army Topographic Command (TOPO COM), which had made most of the moon maps for NASA.

Operating out of dozens of district offices, from Livorno, Italy, to Honolulu, the Corps advises foreign governments on water resource problems and also supervises construction and maintenance of close to 300 military installations.

In wartime, the Corps' military staff builds highways, blows up bridges, constructs military bases, bulldozes airstrips, and occasionally fights.

At home, the Engineers turn Niagara Falls on and off, let contracts on the

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INFORMATION REGARDING CANOE TRAILS

New England Canoeing Guide. The Appalachian Mountain Club. Five Joy Street, Bostox, Mass. 02108

Canoeable Waterways of New York State by Lawrence I. Grinnell. Pageant Press, Inc., 130 West 42nd St., New York, N. Y. 10036

Canoeing White Water in North Virginia and N. E. West Virginia by Randy Carter. Louis Matacia, 3430 Lee Highway, Fairfax, Va. 22030

Appalachian Water, Vols. 1 and 2, by Walter F. Burmeister. The Canoe Cruisers Association, 2153 California St. N.W., Washington, D. C. 20008

Adirondack Canoe Routes by William G. Howard. Recreation Circular 7, Conservation Dept., Albany, N. Y. 12200

Iowa Canoe Trips. Iowa Conservation Commission, East 7th and Court, Des Moines, Iowa 50300

Wisconsin Water Trails. Wisconsin Department of Conservation, Madison, Wisc. 53700

Indiana Canoe Trails. Indiana Department of Conservation, Division of Water Resources, Room 609, State Office Building, Indianapolis, Indiana 46200

Illinois Canoeing Guide. Illinois Department of Conservation, 400 S. Spring Street, Springfield, Illinois 62700

Michigan Canoe Trails. Michigan Tourist Council, Stevens T. Mason Building, Lansing, Michigan 48900

Ohio Canoe Trails. Ohio Dept. of Natural Resources, Division of Watercraft, 802 Ohio Departments Building, Columbus, Ohio 43215

Missouri Ozark Waterways. Missouri Conservation Commission. Jefferson City, Co. 65101

Exploring the Little Rivers of New Jersey, by James and Margaret Cawley. Rutgers University Press, New Brunswick, New Jersey 08900

Maine Canoeing. Dept. of Economic Development, State House, Augusta, Maine 04330

(Please send information regarding other canoe trail guides to the Editor.)

controversial ABM, simulate underground nuclear explosions for the AEC and build all the launching facilities for the nation's space program.

"The Corps," says Long Island conservationist Rod Vandivert, "would like to redesign the world in the manner that God would have done if He had an engineering degree and the budget."

Editor's note to "U. S. Army Corps of Engineers"—I have just received word on the Victory Bog dam project in Vermont, part of the Corps' plan for the Connecticut River Basin in New England. Federal hearings were held last winter, during which Vermonters voiced their unanimous opposition to the project and the Vermont Legislature went on record as opposing it. Now the Victor Bog dam project has just appeared as a high-priority item in the Corps' final Connecticut River Basin report. All possible action seems to have been taken on local and state levels to stop this from happening, which leads one to ask: what was the purpose of the public hearings anyway, and how **can** people exercise any sort of control over the Corps—ILS

The Farmington River

Massachusetts and Connecticut

The Farmington River Watershed Assn., Inc., has published "The Farmington River and Watershed Guide." Included is a foot by foot description of the river for the canoeist, as well as an excellent map showing hazards, points of interest and access points. These come in a plastic container and are printed on waterproof paper. The full package is \$2.50; the map alone is 50C. For copies, write to: The Farmington River Watershed Assn., Inc., Avon, Conn.

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OPEN WHITE WATER CANOE FROM OLD TOWN

Old Town's Ojibway is the latest entry in wild water slalom canoes. Based on some of the remarkable design principles of the Ojibway Indians, the sixteen foot long craft was the winner in the grueling Kenduskeag River Marathon this spring in Maine.

The Ojibway is supplied without keel and with long decks; flotation is under the gunwales. Portage ease is assisted by the inclusion of a middle thwart.

The Ojibway is a major contribution to designing a fine canoe that fully meets wild water specifications, and doubles as a great all-around canoe on lake, river or stream.

Standard specifications for the Ojibway are:

Length: 16 feet

Width: 34 inches

Depth: 13 inches amidships

Weight: 60 pounds

Wildwater Open Canoe Championships

by William Stearns

The Penobscot Paddle and Chowder Society sponsored the First Annual Whitewater Weekend on August 22-23, 1970. This was the site of the National Wildwater Open Canoe Championship Race sanctioned by the American Canoe Association and U. S. C. A. The national event covered 22 miles of the Dead River from Flagstaff Lake to The Firks, six miles of flat water, a quarter mile portage, and 16 miles of what the A. M. C. New England Canoeing Guild calls, "the longest stretch of continuous heavy rapids in New England" including at least a half mile of honest Class III water. This course challenged the all round capabilities of both paddler and canoe.

Fastest open boat time was in the over 17 ft. 6 in. class, turned in by Scott Adams and Bill Hodgkins of Farmington, Maine at 3:07.14, 11 seconds later their coaches, Ray Titcomb and George Walsh also fo Farmington

crossed the line. The honor of Vermont and Massachusetts was protected by Mahlon Teachout and Peter Smith in third place in 3:08.47.

First place in the under 17 ft. 6 in. class was taken by Harry Baxter and Jim O'Regan of Sugarloaf, Maine in 3:16.03, second by Ray Tessmer and A. R. McLain from Cincinnati, Ohio in 3:26.34, New Hampshire's pride was upheld by Peter and John Wilson, third in 3:28.09.

C-2M open boat honors were taken by Fern and Bill Stearns of Stillwater, Maine in 3:22.45 and C-1, open first place by Wayne Gilman of Danforth, Maine in 3:44.26.

In the covered boats, the K-1s were lead by Corning Townsend of Wilton, Conn. in 3:04.39 and Geoffrey Smith of Fort Devens, Mass. in 3:11.06. K-1W first place went to Rasa D'Entremont of Billerica, Mass. in 3:18.23.

Following the successful weekend

which saw 132 contestants representing 14 States race in all senior open and closed boat classes in both white water slalom and downriver events, the sponsors announced plans to repeat the National Wildwater Open Canoe Championships next year on August 21-22, 1971.

Why Open Canoe Racing

Canoe racing, as the layman would visualize it, has been almost extinct as an organized sport. It has always existed in isolated local races but as it spread and became organized, it became specialized. First, canoe racing became a flat-water speed race with canoes that resembled a rowing shell; this type of racing is now in the Olympics. Another direction was into extreme white water. Again the boat became specialized—the covered canoe and kayak; this type of racing will be an olympic event in the near future.

An attempt to preserve the traditional canoe in racing was recently made in the Midwest. The cruising canoe was dimensionally defined. Unfortunately, the racing was done on relatively smooth rivers, and again the normal canoe was quickly outclassed by specialized boats, built down to the dimensions of the rules and designed specifically for speed on near-flat water.

At present in New York, New England, and other areas the normal canoe is again racing, and the number of competitors is growing. Unfortunately, this racing is local in nature or is a sideline or introduction to covered boat racing. Even now the special-purpose boats are endangering the "raceability" of the all-purpose family canoe.

Cruising-canoe racing should be preserved and encouraged, the Penobscot Society believes. The all-around canoe is a wonderful boat. No other offers great a variety of capabilities: it is portable; it is at home on the lake, stream and in white water; it is used for tripping, sport, sailing and gentle afternoon and evening paddles; and it is a boat everyone can afford.

All attempts to improve the canoe for a special purpose have limited it for other purposes. Attempts to define the canoe dimensionally have failed to preserve its all-round capabilities.

It is proposed to preserve and develop the all-round capabilities of the canoe by the choice of the race course. A course that has flat water will demand fine lines; portages will demand reasonable size and weight; white water will demand maneuverability, stability and rough-water capability; and length will demand comfort and strength. Many courses of this type exist in Maine and in New England; some are now in use as courses for local races.

To encourage canoe racing of this type it is necessary to develop a series of titles and championship events. Local events will develop local talent, who will then feed the championship events. A sense of direction and satisfaction will be given to organizers and competitors alike. The resulting news coverage will in turn encourage the beginner and promote the sport.

Suggestions for future championship sites and sponsors, requests for information and expressions of moral and actual support to help develop a truly national level of open canoe racing will be appreciated by Bill Stearns, Box 121, Stillwater, Maine, Penobscot Paddle Chowder Society, President.

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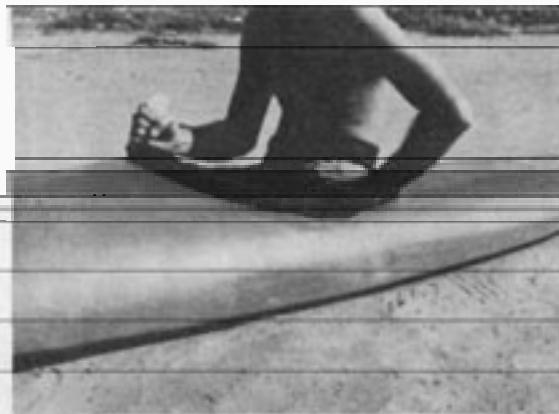
Watertight Kayak Spray Covers

By Mike Johnson, Southern California

Throughout the years, obtaining an acceptable kayak spray cover has been quite a problem. Covers have been made of such materials as sealskin by the Eskimos and canvas sprayed with a waterproofing agent. Utilizing these devices, you could paddle in rough water for about 15 to 30 minutes before you had to stop and empty your boat due to a leaky spray cover.

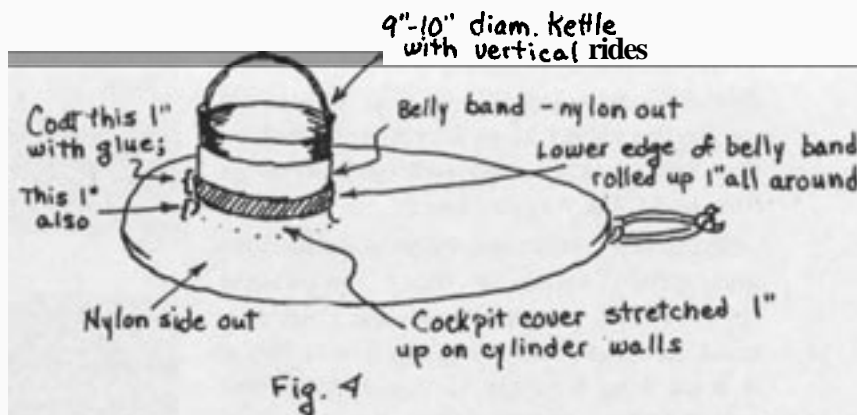
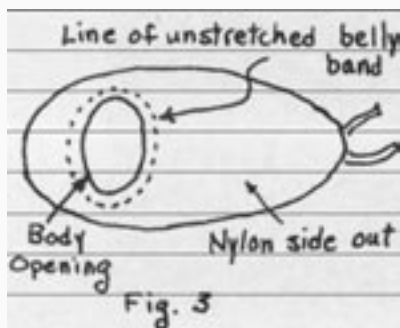
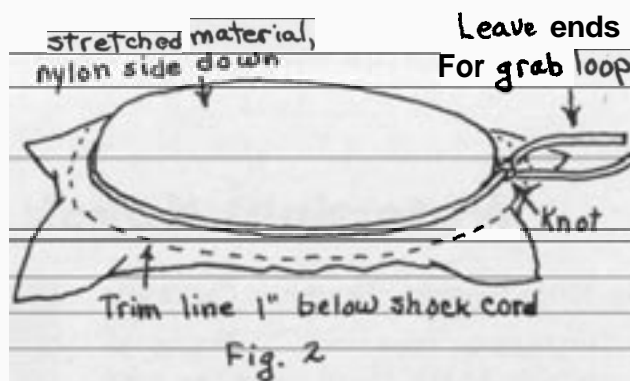
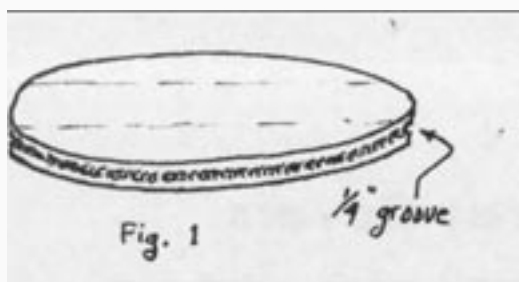
With the space age vinyl plastics and waterproof nylon a more watertight spray cover was now possible, but if a good sewing machine wasn't available, it took 4 to 6 hours to hand stitch the cover and more often than not, it would still leak. With the advent of $\frac{1}{8}$ -inch wetsuit material, experimentation began, using inner-tube rubber glued to the outside of the cover to hold it on the cockpit ring. Stitching was also tried on the wetsuit material. It was difficult to make, but much more watertight. In the final product, the wetsuit material is folded back over an elastic ring of bungee cord, which makes the cover watertight and even airtight. You can now boat for hours with a dry boat. If any water gets into the boat, it drains down the back underneath the wetsuit.

The illustrations above show the new spray cover in place (fig. 1). Figures 2 and 3 show the release cord with easy to find ball for removing the cover from the boat. Figure 3 shows the cover popping off the cockpit ring as the cord is pulled.



(Editor's Note: Mike Johnson is an expert surf-kayaker who designed the "Surf-Yak" shown in these photos. The "Surf-Yak" and the neoprene spray cover described in Mike's article are manufactured by Surf-Kayak Company, Box 218, Encinitas, Calif. 92024. — GL)

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Make a Super Spray Skirt

Jim Sindelar

Everyone I know who has tried or seen a spray skirt made of nylon-backed wetsuit material has readily agreed that it was superior to anything else yet available.

The advantages are many: they wear well, don't leak, don't form a puddle that slowly leaks into your lap, don't pop off during rolls or in big waves, release readily when you bail out, are simple to repair, and are relatively simple to make, requiring no advanced sewing techniques. The only disadvantage that I know of is that material costs will run around \$10.00.

The material is 1/8-inch nylon-backed neoprene available from a skin-diving house, and it usually costs about \$3.00 per running foot, which will be from 3 to 4 feet wide. For an average kayak skirt, three running feet or about a square yard will be about right and will leave some scraps for patching, should repairs ever be needed. The only other materials needed are a supply of wetsuit glue (Black Magic or equivalent) for something less than a dollar and six or seven feet of 1/4-inch shock

cord at about 15¢ per foot. The shock cord is the same stuff used for bicycle tie-downs and for mooring boats—it should be available at any marine supply house. Try to get the kind with a nylon type sheen to the fabric covering, which will prevent wetsuit glue from sticking and allow readjustment of the cord later.

The easiest method is first to make a wooden form or last (this won't be time wasted as all your friends will probably want one of these skirts too, once they see yours). The form is of 2-inch (nominal) stock and is the size and shape of your kayak cockpit. I made mine of three lengths of 2x6 inches, glued side by side. I then used a rotary rasp in an electric drill to form a 1/8-inch-deep groove around the edge of the form about halfway down the edge. A router would doubtless do a better job if available. (See Fig. 1.)

True, you might be able to use your boat rim as a form, but the wooden one makes things much easier.

The skirt itself consists of only three pieces—a cylindrical 6-inch-wide belly

band, a drumhead-like cockpit cover, and the shock cord drawstring (which goes around the cockpit opening only).

The first step is to lay the material over the form, nylon side down, and tie the shock cord in place over the material and in the groove of the form with approximately the tension you want for the finished product (Fig. 2). Put the knot in front. The material should be positioned so at least one inch is available beyond the shock cord at all points. Now stretch the material over the form by pulling down on the edges all around—the material will slip back some and will be held in an equilibrium position by the taut shock cord after you have stretched it. The extra material below the shock cord at all points. It is now ready to glue.

The glueing is done by painting three or four coats of glue on the material all around for one inch on either side of the shock cord (the glue will thus extend to the lower edge of the material on the bottom, and to somewhere past the upper edge of the form on top). It will not hurt if some glue gets on the shock cord, but the glue does no good there. The glue should be allowed to dry between coats per directions. When the final coat is dry, grasp the lower edge of the material, stretch it a little and push it firmly in place up over the cord. Do this around the entire form except for one inch near the knot.

While the glue is setting, make the belly band. It is a 6-inch cylinder of material which should fit snugly around your waist above the level of your cockpit rim when you are sitting in the boat. It is made from a rectangular piece six inches wide and about two inches shorter than your waist measurement. It should normally be stretched a little for a gasket-like fit, but not be so tight you can't get it on over a wetsuit. Butt-glue the edges together. You can later lap-glue a 1-inch strip over the joint for reinforcement if you like. Note that no shock cord is used around the waist.

The nylon should be on the outside of the finished product, so invert the cockpit cover on the wooden form. Now the details of the knot and grab loop can be completed. Punch a hole through the material directly above the

knot and pull both ends of the shock cord and the knot through to the outside. Next glue the final inch of the cockpit cover edge over the knot. The knot establishes the tension in the cord, and if the shock cord is the kind that has a sheen on the cloth, the tension can be adjusted somewhat as wetsuit glue doesn't stick to it very well. Tie another knot in the ends about six inches from the first knot to form a grab or panic loop. Cut off any extra when you are certain of the tension adjustment.

Now cut an opening in the cockpit cover for your body. It should be roughly body-shaped (oval) and about one inch smaller on all sides than the unstretched belly band. (Fig. 3.) The approximate placement can be found by sitting in the boat and taking some measurements—sides, front and back—and then leaving an extra inch or two of material in back to allow plenty for stretching without popping off when you lean forward.

With the hole cut and belly band made, all that remains is to join the two parts together. For this you need a cylindrical form about nine to ten inches in diameter and six inches or more in length (try the kitchen for a suitable pot or kettle). Stretch the belly band onto this form, nylon side out, and then set this assembly on the wooden form, which has the cockpit cover stretched over it. Next work the bottom of the cylindrical form down into the hole in the cockpit cover so that its bottom sits directly on the wood of the form. Invert the bottom two inches of the belly band up over itself toward the top of the cylinder. Then stretch the cockpit cover up on the walls of the cylinder's vertical walls. (See Fig. 4.) Now work the belly band down on the cylinder until:

- a) one inch of the band is inverted up over itself all around; and
- b) the bottom of the fold in the belly band touches the stretched cover all around.

Paint three or four coats of glue on the vertical one inch of the cockpit cover and the exposed one inch of the back of the belly band. This will form a one-inch lap joint—when the glue is dry, just flip the inverted one inch of belly

band down over the one inch of cockpit cover and press in place.

A skirt for a canoe can be made using the same general techniques. However, because of the greater range of movement of boater relative to boat, extra material must be inserted between the cockpit cover and belly band. Thus a slightly more complicated design is required if the skirt is to be taut under normal conditions and not pop off under extreme conditions. At some later date, I may attempt a description of one such design if response warrants it and if sufficient time and ambition are again available.

Pacific Coast 1971 Schedule

By Harry Neal — Slalom Chairman
Pacific Coast Division ACA

Easter Week Training Camp

April 4-11 — Kings River
Tom Johnson
P.O. Box 675
Kerneville. Calif. 93238

~~Kernville Races — Slalom-Downriver~~

April 24-25
Tom Johnson

Memorial Day Training

May 29-31 — Kings River
Harry Neal (253-0773)
12295 Saratoga Sunnyvale Rd.
Saratoga, Calif. 95070

Pacific Division championship

June 5-6 — Kings River
Charlie Martin (524-9779)
1329 Henry St., Berkeley, Calif.

Truckee River Races

August 28-29 — Charlie Martin



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RACE RESULTS

Icebreaker Slalom — October 3, 4, 1970

C-1		K-1*		K-1W	
1. J. Sweet	173	1. H. Kerkoff	182	1. L. Holcombe	255
2. J. Holcombe	202	2. J. Stuart	183	2. C. Clark	300
3. D. Kurtz	214	3. B. Alexander	189	3. C. Goodwin	341

*After the first heat there was a 3-way tie for third, eleven seconds behind first place.

C-2		C-2M	
1. J. Holcombe-N. Holcombe	233	1. B. Holcombe-N. Holcombe	211
2. Benham-Benham	208	2. Sweet-Shuster	243
3. Bliss-Connet	218	3. Yearick, Jr.-L. Holcombe	256

1971 International Slalom and Wildwater Calendar

April 23-24: Slalom, Loyalsock, USA

April 24-25: Wildwater, Ilz, Federal German Republic

May 1-2: Slalom and Wildwater, Mon-schau, Federal German Republic

May 1-2: Invitational Slalom, Zwickau, German Democratic Republic

May 15-16: Slalom and Wildwater, Mu-ota, Switzerland

May 22-23: River Race on Erft, Neuss, Federal German Republic

May 29-30: Wildwater, Rissbach, Federal German Republic

Open Date: Slalom, Wels, Austria

June 17-23: Slalom & Wildwater World Championships, Merano, Italy

June 30: Slalom, Tacen, Yugoslavia

Open Date: Slalom and Wildwater, Spittal, Austria

July 3-4: Slalom and Wildwater, Vir. CSSR

July 24-25: Slalom, Bourg St. Maurice, France

Aug. 14-15: Invitational Slalom, Thale, German Democratic Republic

Open Date: Slalom and Wildwater, Landeck, Austria

Aug. 21-22: Slalom and Wildwater, Lip-no, CSSR

Aug. 28-29: Slalom, Augsburg, Federal German Republic

Sept. 4-5: Slalom, Szczannicza, Poland

Oct. 16-17: Slalom, Llangollen, Wales, Great Britain

Slalom and Wildwater World Championships

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1973 — Spindleruv Mlyn, CSSR

1975 — Tacen, Yugoslavia

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Jay Evans of Hanover, N. H., at West River Races

Jay, a regular contributor to *AMERICAN WHITE WATER*, has been active in white water racing for over 12 years. A top-notch leader, organizer and writer, he has served as ACA National Slalom Chairman, AWA Racing Editor, 1969 U. S. Winter Team Coach, Dartmouth Ledyard Canoe Club Adviser. He's the author of *FUNDAMENTALS OF KAYAKING* now in its 8th edition. His many contributions to the white water sport include the instant scoring system for slalom, the indoor slalom idea, rules for kayak polo.

Mike Schneller, Feather River Races — Photo by Greg Thomas



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The Tuolumne River of California

By Robert H. Hackamack — Modesto, Calif.

(From a report of February, 1970 by the Tuolumne River Conservation Committee, Robert H. Hackamack, Chairman, to the Directors of the Sierra Club, San Francisco, California.)

The 158-mile-long Tuolumne River arises from the Ma. Lyell Glacier in Yosemite National Park and plunges down the western Sierra Nevada to join the San Joaquin River near Modesto. In its brief course, the river has carved one of the major canyons of the world, provides sparkling drinking water to San Francisco customers, offers a magnificent kayaking course, wildlife sanctuary and fishing area, fills one of the largest reservoirs in California, irrigates and meanders through some of the richest farmland in the world and provides a significant King Salmon spawning environment.

Because of its source in Yosemite Park, and because it was so highly val-

ued by Naturalist John Muir, the Tuolumne River remains one of the most significant and personal challenges to the conservation cause and to the Sierra Club in particular.

With the excitement of exploration, the Tuolumne River in 1969 became a kayak course which began to draw boaters from throughout the state — many were members of the Sierra Club.

They proved the river is a viable kayaking course, exciting beyond their dreams, a challenge to advanced boaters, and thrilling enough to whet their appetites for more of the same.

As a kayaking run, the Tuolumne River may very well prove to be superior to any other white water in California — "relentless" some of the boaters call it. The boating section consists of 18 uninterrupted miles between Lumsden and Wards Ferry Bridges — a

full day of kayaking with plenty of action the entire time.

By contrast, most other kayaking rivers boast three or four major rapids, with the balance of the mileage consisting of less exciting water. Many of the runs in the Sierra Nevada are simply much shorter than the Tuolumne. Others are due to be straddled by dams, dried by water diversions, or are next to highways.

Literally dozens of kayaking rivers have been buried under reservoirs or dried up by diversions already. No single agency is responsible for the loss; rather a multitude of agencies from the state and federal government to local irrigation districts have claimed, and taken, the water.

The Tuolumne remains a heretofore undiscovered jewel for its undisturbed rapids and beauty. The river is an oasis of refreshment in the hot lower Sierra Nevada canyons, a preserve from all development so far, a statement of nature's power. Fishermen have known the river for years, but perhaps no more dramatic discovery of its aesthetic and recreational values is possible than that of the kayakers, mounting their light boats, trusting their lives to the crush of the river's rapids.

The kayakers are unanimous: the Tuolumne is one of the best runs in the state, if not the best. Former National Champion Walt Harvest of Hayward, California, calls it "number one" for expert boaters without qualification or hesitation.

Sierra Club Kayakers Gerald Meral and Richard Sunderland first scouted the Tuolumne on November 4, 1968. They little suspected the City and County of San Francisco, in just a few short weeks, would announce a plan to dam some of the kayaking section of the river, while diverting most of the water out of the remainder.

The flow was between 500 and 700 cubic feet per second (cfs) and the boaters began their exploratory run at the Lumsden Bridge where they found the convenient Stanislaus National Forest campground and access by road. Even at the low flow, they rated the first several miles Class III or IV. At the Clavey River, they decided to port-

age the Clavey Falls just downstream from the confluence. At the lower end the boaters reported the river carrying about 1400 or 1400 cfs due to additions from tributaries and an increase from dam releases. The trip took about six hours.

On the week end of November 16-17, Meral and Sunderland explored the Tuolumne above Lumsden Bridge, putting in at the confluence of Cherry Creek and the main Tuolumne. The gradient was steep, over 100 feet per mile, and the rapids were violent. The boaters had to portage around some, but, they reported, expert kayakers assisted with shore safety devices could negotiate the river. The flow was low, about 500 cfs.

Meral, Sunderland, and Jim Morehouse determined to challenge the river at a high flow, and May 3, 1969, was chosen for their trip. They chose to run the river between Lumsden and Wards Ferry Bridges with the flow at 4800 cfs. The trio had the ride of their lives, but they came through safely, stimulated, and eager to bring their kayaking companions to the Tuolumne. They portages only at Clavey Falls.

Meral rated the river a Class IV with "some five's" after that experience. He said the river is strictly for expert boaters, and he insisted on elaborate precautions such as crash helmets, wet suits, first aid equipment, extra paddles and life jackets. The gradient between the Lumsden Bridge and the Clavey River falls 50 feet per mile, and between the Clavey and Wards Ferry falls 35 feet per mile, he reported.

A major group planned to make the Lumsden-Wards Ferry run June 8, but the excursion was cancelled at the river's edge. The flow was unquestionably beyond their capacities. High Sierra snow was melting and the Tuolumne was passing an estimated 10,000 cfs beneath Lumsden Bridge.

In July 5, 1969, Meral and Morehouse led a party of seven men in six white water canoes and kayaks down the Tuolumne at the highest flow yet attempted—6,000 cfs, again portaging at Clavey Falls.

Members of the party, all from the Sierra Club's Bay Area Chapter river

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touring section, were Walt Harvest, Jim Sindelar, Morehouse, Meral, John Googins, John Ramirez, and Dave Kelsey. All succeeded in making the run, and all expressed excitement over their discovery of the Tuolumne River and its wild section.

High flows are not always found in the Tuolumne, which is impounded by three San Francisc reservoirs: Hetch Hetchy, Lake Eleanor, and Cherry Lake. Under present operating procedures, though, the river usually can be counted upon to have at least 600 cfs of flow below Cherry Creek.

Another boating party tried the Tuolumne between Lumsden and Dards Ferry Bridges on July 20, 1969, at a flow of 4,000 cfs, with no portakes. India Fleming of Berkeley, at the age of 14, accompanied many of the boaters named above on the run, providing adequate demonstration that kayaking the Tuolumne River is possible for skillful men and women over a broad range of ages and is not limited to men in their prime years.

On August 9 and 10, another boating party tried the river a lower flows. The first day the flow was 1300 cfs. The second day the flow was 1000. The river retained its challenge. The boaters returned exhausted, exhilarated, and proud to have succeeded. Many have returned to the river with subsequent parties.

Some rafting has been known on the river for years, but most professional rafting outfitters have considered the waters too high and dangerous for commercial use. At lower flows, however, rafting promises to become more popular as other rivers are inundated.

To assure the Tuolumne is not lost, either to San Francisco or to another agency such as Tuolumne County Water District No. 1 or 2, the Sierra Club boaters were the first to propose it be named a component of the National Wild and Scenic Rivers system and a state-protected waterway.

San Francisco's existing dams and diversions might be thought to doom any such proposal—wild rivers are supposed to be unharnessed and free. In fact, the National Wild and Scenic Rivers Act of 1968 and administrative

regulations drawn to put the act into effect, leave room for the presence of existing dams outside the actual wild or scenic river segment.

San Francisco's O'Shaughnessy Dam, completed in 1923 across the famed Hetch Hetchy Valley of Yosemite National Park, already has destroyed one of the finest sections of the most outstanding park in the world, an area comparable to Yosemite Valley itself. Must the same dam also destroy the wilderness values of the river which is left?

(The Tuolumne River report, a Sierra Club publication of 82 pages including maps and photos. It's available at \$1.65 a copy from Bob Hackamack, 5100 Parker Road, Modesto, California 95350.)

(As of September 9, 1970 the Secretary of Interior and the Secretary of Agriculture of the United States made a joint announcement listing the Tuolumne River as one of 47 rivers in the nation identified for study under The National Wild River Act.)

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By Jay Evans

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The Grand Order of WOWB's

(Wives of White Water Boaters)

By Iris Sindelar

It is an undisputed fact that white-water boaters comprise one of the most stalwart groups of sportsmen in existence. Their latent suicidal tendencies must rank close to those of mountain climbers and bronc-busters, although same seem to thirst more for the blood of fellow boaters than for their own. A friend of ours, one of the best white-water photographers around, takes diabolical pleasure in zipping through a particularly hairy rapid, getting his movie camera set and waving the unsuspecting boaters on through. (By now most of the Bay Area boaters are wise to him, but there are usually enough innocents on every trip to provide him with some excellent footage.)

As for myself, I don't think I am either bloodthirsty or suicidal, but I'm beginning to show unmistakable symptoms of the incurable White-water Syndrome: for example, I can't even look at a gutter after a rainstorm without thinking it might very possibly be runnable. A mistfit? No. I simply belong to a subdivision of the group, with perhaps an even more stalwart membership, namely Wives of Whitewater Boaters (WOWBs). I say perhaps more stalwart because most of the wives in my acquaintance (if they boat at all) attempt the hairy stuff only with fear in their hearts and against their better judgment. I'm not sure whether this is due to lack of courage or to better sense than our husbands; I prefer to think the latter.

A non-boater would wonder why we even attempt such things, but you fellows realize, I'm sure, that we mostly want to prove we're "game," because your admiration and respect are worth a lot to us. But (and this could apply only to a C-2 team) sometimes one can be scared speechless and thus unable to communicate to one's partner a reluctance to proceed to what looks like certain death.

Case in point: on the fabulous Rogue



River in Oregon a couple of years ago my husband Jim and I watched while about 50% of the boaters tipped and swam through the monster waves of notorious "Blossom Bar" rapid. Jim said, "Well, I guess we're next," and started to climb back down to our boat, while I kept trying to say, "No, I can't!" but no sound came out. Still without looking at me (on purpose?) he crawled into the boat and held it steady for me. What could I do but climb in and paddle? Our descent was wild (at one point I, in the bow, was completely submerged in a wave) but flawless, and I felt like a tiger the whole rest of the trip.

You single guys might take a hint from the way Jim enlisted me in the ranks of the WOWBs—our very first date was in a canoe. I naively thought it a terribly romantic idea to paddle around Lake Mendota (U. of Wisconsin) and enjoy the sunset. Actually he was teaching me the rudiments of paddle strokes and making sure that I was learning to paddle on the right side, that is, the one complementing his good side. (I don't think the romantic overtones of the excursion escaped him either, however.)

A year later we were married and the three of us left on our honeymoon—Jim, myself and the canoe. It was an incredibly beautiful trip; for the most part we were completely alone on the lovely Bois Brule River, which we followed until it emptied into Lake Superior. We also did a short stretch of the Wolf. For a honeymoon I'd take a friendly river instead of Niagara Falls any day! Especially in a canoe.

(Note: Iris, Jim and their infant son now live in Concord, N. H.)



POOL TRAINING TECHNIQUES

by Jay Evans

Since the first pioneers slid their kayaks across four-foot snow drifts at 20 below zero and into the Dartmouth College pool in the winter of 1963 to practice their skills, several helpful techniques have evolved. Pool training and pool slaloms since that winter 7 years ago have increased in popularity around the country. The Ledyard Canoe Club at Dartmouth receives many inquiries each year concerning pool training which, in turn, has prompted the writing of this article.

Pool training, unlike outdoor practice on a river, requires a very efficient use of a limited body of water usually by a large number of people. The trick is to discover basic training techniques that require very little water space but at the same time simulate outdoor conditions and help condition the boaters for spring. The following procedures have been developed at Dartmouth with a certain degree of success:

The Eskimo Roll: What was once con-

sidered a stunt not so many years ago we now teach **before** the forward stroke! People working in tandem can quickly teach each other to roll without using much water space. The ultimate test here is the number of consecutive eskimo rolls a person can do in a minute. A competent roller in reasonably good physical condition should be able to complete 15 to 20 in a minute's time—or one every $\frac{3}{4}$ seconds. A person training to be a white water racer should have the staying power to do 25 complete rolls in a minute. Bill Nutt of Ledyard has done 19 hands-only rolls (without using a paddle at all) in 60 seconds.

English Gate: This is a series of maneuvers around and through one gate without touching a pole. The first phase involves passing through the gate in a forward direction three times. In the second phase the kayak backs down beside the outside of a pole, rolls, then goes forward through the gate, and re-

peats the process on the other side. In the third phase the kayak moves again down the outside of a pole, pivots, and goes backward through the gate. Once through the kayak pivots again and goes backward through the gate. In the fourth and final phase the kayak moves forward past the outside of a pole, rolls, then goes backward through the gate, repeating the process on the other side.

Seven years ago we felt that anyone who could complete the English Gate in 100 seconds or better in a K-1 was a pretty good boater. Now it is felt that the occasional racer should perform in the 80s and a U. S. Team members in the 60s. Add 5 to 15 second for C-1s and C-2s. The American English Gate record is currently held by former U. S. National Kayak Slalom Champion Eric Evans in 60.3 seconds.

Since English Gate times are now consistently under 100 the prospect of double or even triple English Gates has been successfully employed as training device. For a boater in good physical shape there should be little or no drop off in times between a single and a double English Gate. In other words if a boater can do a single English Gate in 70 he should be able to do a double in not much over 140. Allow a slight drop off of not more than 8 seconds for a triple English Gate.

To add a little flavor to the exercise we sometimes have two boaters doing an English Gate side by side to see who can finish first.

The Rack: Take two 2x4s attached by cross pieces designed like a ladder together with a molded kayak seat in the middle. Attach it firmly to the side of the pool with a full-length mirror in front. In this way a boater can see his own forward and backward strokes and, by means of the mirror, be able to smooth out and correct his strokes. It is sort of an inexpensive instant replay Video tape—without all that electronic equipment. Add a stop watch to the scene and, by taking a stroke a second, allow the boater to paddle for five whole minutes without once breaking his rhythm. This exercise begins to simulate the raw physical strain that a boater experiences during a 20-25-gate

slalom. Also, it can be an excellent warm-up prior to a pool session.

Variations on the five-minute time element can produce repeated sprint and tempo training. For example: sprint for one minute, rest for 30 seconds, then sprint for another minute again and keep this up for ten times. We have found that a specially designed narrow-bladed paddle is helpful here more nearly to simulate actual outdoor conditions. The regular full-bladed paddle creates too much resistance while working out in a stationary position.

The Chase: All training should have an element of fun. A three-man chase for a solid, uninterrupted five-minute interval adds zest to any practice. Sometimes called "follow the leader," the first boat takes off from a corner of the pool followed 15 feet behind by boat No. 2 which is then followed by boat No. 3. The lead boat—at top speed—weaves unpredictable routes for five minutes through four or five gates—including an occasional eskimo roll. The object of the chase is for the lead boat to outdistance his followers sufficiently so that he can approach and eventually touch boat No. 3 from the rear. Boat No. 2 meanwhile tries to overtake boat No. 1, and boat No. 3 tries to catch boat No. 2. All gates must be negotiated without touching the poles. A well-conceived chase can leave a boater limp and panting at the edge of the pool after five minutes.

Sprints: Speed off the starting block is important in track and equally effective in white water racing. Line 3 to 5 boats up at one end of the pool and start them off with a given signal to sprint almost the entire length of the pool. This can be done with many quick repetitions and in several heats if there are sufficient numbers of boaters available. And sprints can be done backwards as well as forward, and sideways as well by sculling and drawing.

Sequences: One of the more popular exercises involves designing a 10-12-gate sequence(using several gates if necessary) without the benefit of gate numbers. The leader makes one demonstration run while the other boaters

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watch and attempt to memorize the course. Then by starting a couple of boats only 10 seconds apart it is possible to maintain two racers on the course at a time—both under the relentless hand of the stop watch. Up to ten boats can be accommodated at a time in this exercise without too much of a delay between runs. Those waiting their turn in line do the timing for those on the course. The sequential route should be changed and a new one designed after each boater has done the route three times. Since backward paddling (especially through gates) is an often neglected art—entire sequences can be designed in which all gates are negotiated in reverse. Also, an eskimo roll or two can be thrown in or any part of an English Gate as well.

Exergenie: This is one of the newer techniques and is especially effective as a conditioning exercise when done in repetitions. An exergenie is a small metal tube with a line twisting in and out of it providing an adjustable degree of resistance depending upon the amount of twist. Enough nylon line is extended through an exergenie to cover almost the length of a pool. Fasten metal snaps at each end of the line and attach the exergenie to a crib line hook at the edge of the pool. Pull the line all the way through the exergenie until the metal snap is up against the exergenie itself, then attach that metal snap to the stern grab loop of a kayak. The boater is now ready for the countdown. He sprints forward, gradually drawing the entire line through the exergenie, and, approximately 20 seconds or so later, arrives at the far end of the pool. At this point another boater unfastens the snap from the grabloop and lets it drop to the bottom of the pool. Back at the exergenie the second metal snap has since arrived in position and is ready to be attached to a second boat.

This exercise works best when using a narrow-bladed paddle, and done in many repetitions. After ten times the entire length of the pool under a stop watch most boaters are ready to suggest they switch places with the timers—if they have enough breath left to speak.

After practicing several English Gates, 10 minutes on the Rack, a triple

English Gate, a half hour of sequences and the exergenie together with a few sprints topped off by 20 or more eskimo rolls in 60 seconds, a boater should be ready for the final event of the evening: Kayak Polo.

This is really a great game, and simple to learn, and is an excellent conditioner. It is best played with three boats on a team and each boater should not only have a protective rubber tip at each end of his boat but should also wear a helmet. Any type of water polo ball will do or rubber soccer ball. A complete set of rules for the game can be found in the book, "Fundamentals of Kayaking."

All the aforementioned training devices have been thoroughly tested and used down through the years. It is therefore possible not only to start white water running in the spring as master of your craft but also with some semblance of physical shape and confidence.

(Jay Evans is the author of "Fundamentals of Kayaking" available from the AWA Book Service, 6 Winslow Ave., East Brunswick, N. J. 08816, or from the Ledyard Canoe Club (\$3).)

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Down the Wide Missouri

By Ann Schafer

Editor of Pacific Paddler Los Angeles, Calif.

For 130 unforgettable miles the Missouri River in central Montana is virtually unchanged since Lewis and Clark paddled past in 1805 while running the bounds on the Louisiana Purchase. Cattle and sheep have replaced buffalo and Indians, but one can still capture the wilderness spirit and romance of the early West.

My husband Don led a Valley Canoe Club trip down this stretch in 1967, for 6 days, but 2 or 3 weeks would have been better, as there is so much to see and do. We launched at the confluence of the Teton and Marias rivers at Loma, Montana, near where the Marias and Missouri meet. (The licensed guide who arranged our shuttle let us down completely, but Deputy Ollie Gore of Wood's Agate Shop and Motel at Loma, could probably arrange a reliable shuttle, which involves a 400-mile round trip. Montana towns often consist of a crossroads, grain elevator and NO gas stations.) Boats can be launched elsewhere on the Missouri, but there are dangerous rapids between Great Falls and Fort Benton. Fort Benton is the nearest town to Loma, and has a charming Victorian hotel furnished with massive antiques, a fine museum and interesting relics, including a decrepit boarding house once known as "Madame Thwing's, the Most Deluxe Establishment of its Kind in the West"—with convenient connecting doors to the adjacent officers' quarters.

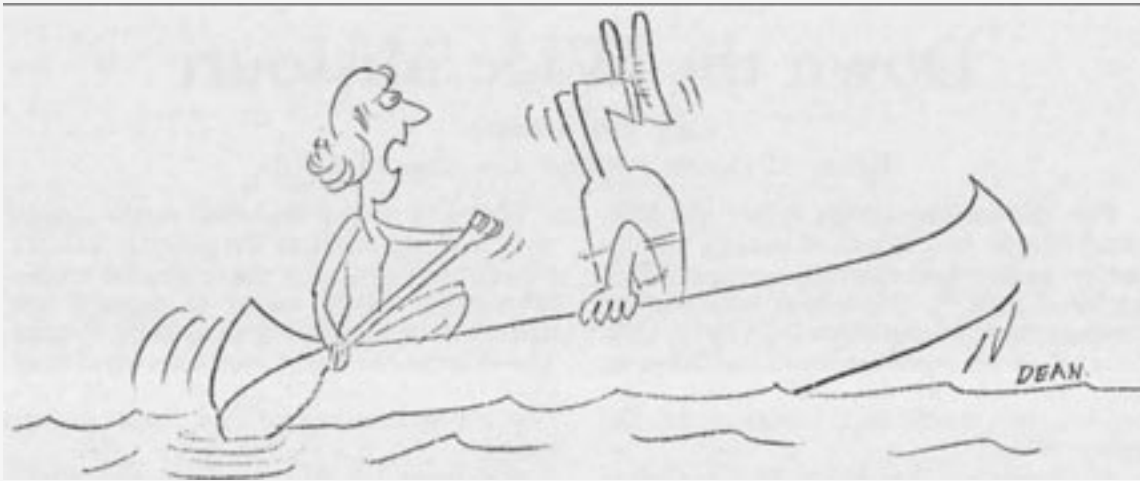
The first 16 miles to the Virgelle Ferry is pretty farmland; including this civilized stretch we saw only 2 people in 130 miles! Below the Ferry (a possible put-in) is 80 miles of spectacular white sandstone cliffs rising to 1,200 feet above the broad, slow river. From the Judith River confluence to the takeout at Highway 191 bridge at James Kipp State Park, the Big Muddy erodes its way through the rugged badlands of the Missouri Breaks, one of the best hunting areas in Montana. Beyond the bridge, the river is drowned in the mammoth Fort Peck reservoir.

There is a tiny general store a mile up the dusty road at Virgelle, but don't forget anything, for there are no stores after that. River water is muddy but drinkable with Halazone tablets. Randy Sheeline, a chemical engineer who may have known something we didn't, carried a 5-gallon jug of city water in his canoe.

For most of this run we are 30-40 miles from the nearest road, not to mention telephone. If there's an emergency, you must handle it yourself. Frequent rapids appear on the 1893 charts available from the National Park Service in Omaha, Neb. These bars and shallows caused many steamboat wrecks in the last century. In mid-August at fairly high water the only real rapid we found was below Holmes Council Island, which even the loaded, open canoes ran without scouting. The current is slow 2 mph, not 12 as the locals claim. Rivers are subject to change without notice, however! Different water levels might advance the rapids, but there should be no problem in lining any unexpected trouble spots.

We were warned about sudden wild winds swooping down from nearly clear skies, capable of capsizing power boats, but they never materialized. We were also warned about Deadman Rapids and approached it with caution, only to run it backwards while rafted together during our morning "seminar." Each morning we read aloud from our guidebooks tall tales of trappers, river pilots, miners and fancy ladies, as well as more scholarly reports of geology, anthropology and history. Be sure to read Lewis and Clark's Journals, and books about Montana's river frontier days. The Park Service and State Chamber of Commerce had excellent guidebooks to this area which doubled our pleasure.

We did meet rattlesnakes every day; one night we found 3 inside camp after we'd set up for the night. Snakeproof tents or cots were indeed appreciated on this trip. The snakes were so slug-



I THINK YOU DELIBERATELY GOT YOUR HEAD STUCK
IN THE PORTAGING YOKE, SO I WOULD HAVE DO
ALL OF THE PADDLING!

gish they never rattled, but no one wandered around barefoot or at night without a light. We took along snake-bite kits, and when we go again with children, we'll check with a doctor about taking along anti-venom as well.

Even avid wildwater paddlers enjoyed this placid but scenic river. It

was truly the Gateway to the West, an irreplaceable national treasure. Rock hunting, scenery and historical sites were tops.

The Army Engineers have 3 dams planned for this stretch. Have you written a conservation letter this month?

— Ann Schafer, Los Angeles

John Evans, 1969 White Water Team Member, training for the 1972 Olympic Team on the Kern River, California.



EDITOR'S SOAP BOX

By Iris Sindelar, Editor, Journal of the AWWA



A change in editors does not necessarily mean a change in style or content; I hope that **American White Water** will continue, as in the past, to hold its readers' interest through variety and balance of excellent articles and photos. Maintaining this variety and balance is the job of the Editorial Committee and myself, but the responsibility for the articles and photos falls mainly on you readers—if you've been considering writing an article and/or have some fine photos, don't delay sending them in as we need all the material we can find.

Material for the Journal seems to fall roughly into the following categories: trip accounts; racing; conservation; humor; safety; boating technique; equipment care and construction; and miscellaneous (that's for anything I might have missed). Naturally some readers find one or more of these categories far more interesting than the rest and resent excessive space devoted to one of the "less interesting" aspects of white water boating. Hence the need for a reasonable balance, which is what we hope to provide. For the sake of variety we will try to include as many of the different categories as possible in each issue, depending, of course, on what is available. In addition I hope to receive letters from you subscribers telling what changes you would like to see and offering comments and criticism on what has already appeared.

Within the above categories there are bound to be widely disparate points of view, as for instance concerning the boater's role in conservation. I don't think the Journal should

pretend to hold any particular "line" but should rather be a place where various opinions may be expressed freely. Thus if we print an article expressing a viewpoint which offends you' don't just sit there—write a letter to the editor or, better yet, a full-fledged article which puts forth **your** views on the subject. I suggest, however, that rebuttals, etc. be made in a constructive vein—a mere outpouring of displeasure makes poor copy and probably will **not** get published.—ILS



From Your Temporary Editor

This issue completed my emergency effort as temporary editor. Iris Sindelar, Editor and Chairwoman of the Editorial Committee is an experienced journalist and white canoeist. She and her husband Jim are an expert C-2 team with many white water friends and a considerable knowledge of the best wild white water rivers especially in Northern California where they lived for several years in the San Francisco Bay Area, before moving to New Hampshire.

My thanks to the many members whose generous contributions produced these last two **Rush!** issues and to the member/subscribers who endured the long delay. This issue, Vol. 15, No. 4, completes the current subscription/membership period. Please renew your membership/subscription, \$3.50, **NOW** and receive the 4 issues of Volume 16 which you will receive quarterly and **on time** starting with Spring, 1971.

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Bluff City Canoe Club
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East Tennessee White Water Club
Don Jared, Rep.
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Tennessee Valley Canoe Club
Robert P. Shepard
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Salt Lake City, Utah 84108

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Newport News, Virginia 23606

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Washington Kayak Club
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8519 California Ave. S.W.
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Sierra Club
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307A High St.
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B. C. Kayak & Canoe Club
Erich Kozak, Rep.
P. O. Box 2237
Vancouver 3, B. C.

Canadian Youth Hostels Assoc.
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Halifax, Nova Scotia, Canada

Montreal Voyageurs
Rene Bureau, Rep.
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