

*American*

# WHITE WATER



**AUTUMN, 1964**

**Vol. X, No. 2**

*the Journal of the American White-Water Affiliation*

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# A . WHITE WATER

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AUTUMN 1964

Vol. X, No. 2



## The American Whitewater Affiliation

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156

Photo by Bart Hauthaway



August 5, 1964

Dear Harold [Kiehm]

Just for the record, my pet peeve is the spelling of "whitewater." The cover of the Journal has it as **2 words**, then **hyphenated** in the subtitle, then as **one word** on the title page. This is **asinine!** Webster's Collegiate gives no help and I haven't checked **Big Webster**. I personally prefer "whitewater," one word, but the **least** we can do is adopt a convention and be consistent!!

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

*(Ed. Note: This organization was founded as the American White Water Afiliation. In later years, during a revision of its constitution, over considerable opposition the title was amended to "American Whitewater Affiliation" (AWA). Your Editor, while loyally accepting the change insofar as it affects the upper case title of the Affiliation, will continue to adhere to the rules of style set forth in Fowler's "Modern English Usage" whenever the lower-case terms "white water" (noun) and "white-water" (adjective) occur in textual matter. In essence, that rule is not to hyphenate or amalgamate *unnecessarily*. The discrepancies noted by John Sweet are due to continued use of old engravings, and in the Editor's opinion do not merit the term "asinine.")*

---

## A Step Forward in the Wild Rivers Study

The Conservation Committee of the Sierra Club, a nation-wide organization with over 23,000 members, has submitted a Report on Wild Rivers to the Federal authorities. The Report is the product of a year of intense study—on top of many years of experience by river runners in both rafts and small boats.

In a covering letter to Edward Crafts, chairman of the Wild Rivers Study Team of the Bureau of Outdoor Recreation, the Sierra Club's (and AWA's) Randal Dickey notes that "In many cases the individuals involved are the only ones having knowledge of travel and the ecological conditions of certain rivers."

The Report highlights one point that is significant to many of us who cannot hope to travel to deep wilderness for our river sport. "There are rivers," it says, "which, although not all strictly 'wilderness' rivers, should be listed as

worthy of preservation because of their (a) recreational value, such as fishing, white water and flat water boating, camping, photography, etc.; (b) scenic value; and (c) scientific value, such as geologic uniqueness, wildlife areas, etc. Many such rivers need to be accessible by road, but all of the rivers included here have limited access by road, or are far enough from roads to be virtually unaffected by them. Such rivers that are close to population centers, suitable for weekend recreation, should be included. The length of a stretch of river being protected should be immaterial."

The report lists some 55 rivers and river systems in the West, with intense emphasis on those of California threatened by water development plans.

What have other AWA affiliates been doing in their own areas?





The author running a curling wave in an open canoe.

—Photo by George Larsen from surfboard

# The Capistrano Flip

By Ron Drummond

The Capistrano flip is a very quick method of emptying a canoe in deep water. The canoe should have flotation compartments in each end. You will first find herewith a description of the technique—to be followed by variations and related subjects written in a more rambling style for those who, like myself, enjoy reading everything they can on canoeing.

Visualize yourself in the water beside your swamped but upright canoe. The center thwart is in the exact center.

1. Place your right hand on the near gunwale, about six inches to the right

of the center thwart, and push down on the gunwale.

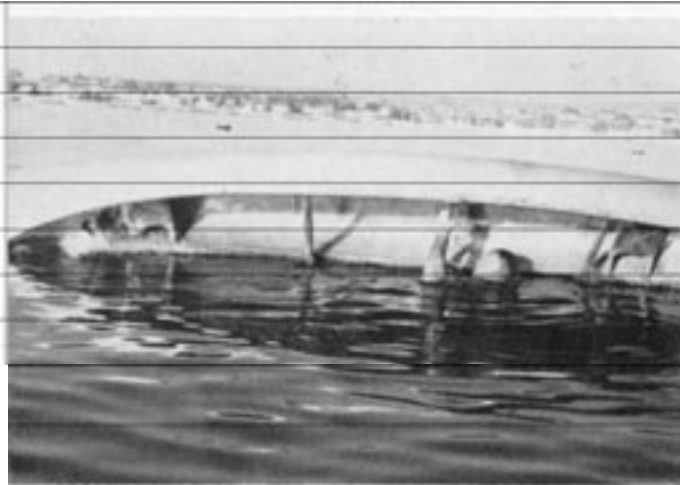
2. At the same time reach across as far as you conveniently can and grasp the center thwart with your left hand and pull up. This turns the canoe completely upside-down over your head.

3. When the canoe is only half-way over, push up slightly with your right hand. The thwart will be in front of your face and there will be plenty of light and air.

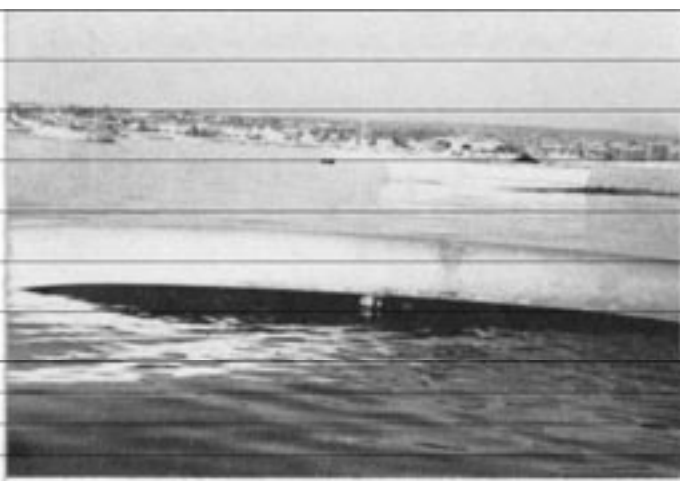
4. Turn your right hand over so your thumb is on the inside of the gunwale



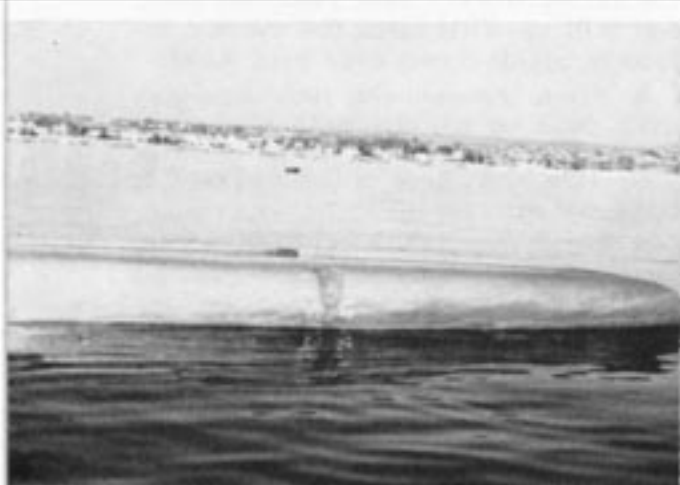
Turn the swamped canoe. .



. . . upside down over yourself.



Lift to break vacuum . . .



. . . give a mighty scissors kick

and your fingers are on the outside.

5. Place your left hand at least farther away from you than the middle of the thwart.

6. Give a slight push up with your left hand until the gunwale on your left is just barely above water to break the suction and lift the canoe up and let it down level on the water to trap as much air as possible under the canoe.

7. Now take a big breath and get all set to give a strong scissors kick and at the same time raise the gunwale on your left just barely enough to break the suction.

8. Immediately push as suddenly and hard as you can to raise the whole canoe completely off the surface of the water.

9. Push it at a slight angle to your right and the canoe will turn upright in mid-air.

10. At the start, the greater effort is exerted on your left arm, but after the gunwale on your left side has reached the top of its arc, all effort is concentrated on pushing up with your right hand to keep the lower gunwale above the surface of the water. Your head will be under water at the finish, but if you keep the right gunwale above water, all the water will be out of the canoe before it lands right side up.

11. To get in the canoe, simply follow the method explained in the Boy Scout merit badge booklet "Canoeing," only hesitate half a second to let the water drain off your body.

### Myths About Canoes

Canoeing, in its many phases, is such a fine sport that the world would be much better off if there were more canoeists; and it is regrettable that lack of knowledge on the subject has made the idea almost universally accepted that every canoe is simply a risky death trap, and that anyone who is foolish enough to paddle a canoe farther from shore than he can swim is taking his life in his hands. Unfortunately, this conception is correct in the case of people who don't understand canoes — just as automobiles are dangerous for people who don't know how to drive them. But for those who are familiar with canoes, they are probably as safe as any type of water craft, and the chief reason I was so pleased to discover the American Whitewater Affiliation and

the American Canoe Association was that one of their main objectives is to share with fellow members information that will enable them to find more safety and pleasure in canoeing and kayaking.

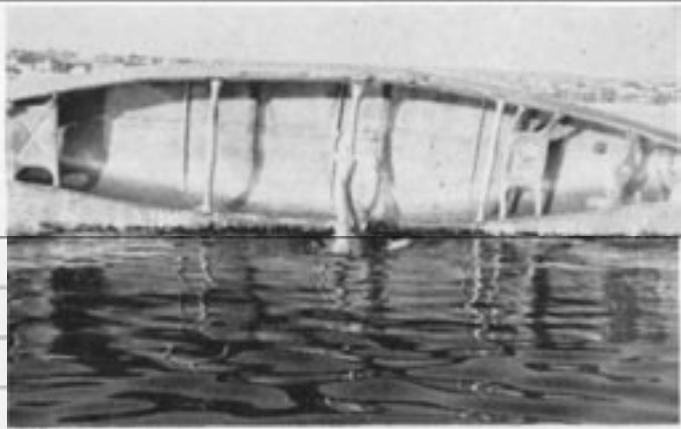
One unfortunate part of my canoeing experience has been that I have had to do most of my California canoeing on the sea alone, or with passengers in my own canoe, because ocean canoeing was, and still is, almost completely unknown in California. Consequently, it is with regrettable slowness, over a period of 43 years, that I picked up what knowledge I have of canoeing on the sea. I expect to most of the readers of American White Water that makes me quite ancient, 57, but I still can't sleep on nights when I hear the roar of huge pounding breakers, over a mile from my home, in anticipation of the exciting sport of riding them in my canoe or kayak at dawn.

I won't go into any details of surfing, but one can't surf large waves all day without getting caught once in a while in the area where the waves are breaking. By jumping the canoe you will usually go through a **broken** wave of white water five or six feet high without shipping too much water, but obviously waves, say twelve to twenty feet in height, especially if they break on a canoe, will not only swamp it, but, if they are thick and curling, will smash it to pieces. To prevent this, it is essential to jump out and turn the canoe upside-down so the wave will hit the rounded bottom of the canoe while you push it into the wave from the stern. Then, just as soon as you see a long enough space between waves, you right your canoe and get out of the area as fast as you can before more waves break on you.

### Stages of Evolution

Because of my frequently having been in this situation, necessity was the mother of invention, and hence the gradual evolution of the Capistrano flip.

First I used to use the well-known Boy Scout and Red Cross method of shaking the water out of a canoe. Then for years I used what I called a "splash board" which speeded up the process. This was simply a rectangular piece of waterproof Masonite about a foot wide



And here is the flip itself!



The boat once right-side up and dry. .



. . . use the Red Cross method . . .



. . . to get aboard again.

and the same length as the distance from the front to the back thwart. One side (edge) fit flush with the gunwale and the other side lay on the bottom of the inside of the canoe parallel to the keel. When the water was shaken out, the splash board was a great help, especially in the type of canoe that has a flat bottom and sides almost at right angles to the bottom, which makes it difficult to shake.

As soon as fiberglass came on the market I used a fiberglass canoe, taking the shape off one of my wood-and-canvas canoes, and used both types of canoe for several years with a splash board. In water where I could touch bottom, I used to get under an overturned canoe and heave it completely out of the water, turning it right side up in mid-air. To withstand the beating the canoes took in heavy surf, I had to put so much extra bracing on them that they both weighed over 100 pounds.

Then when I finally got the first model of the 17-foot standard-weight Grumman, it was so much lighter that it gave me new ideas. I tried flipping it

in deeper and deeper water and eventually I was trying to do it in water over my depth, and in this manner evolved what my friends have dubbed the "Capistrano flip."

#### **Simple When You Learn**

This method of getting the water out of a canoe is, like many other accomplishments, quite simple when you get on to it. However, one's body weight and strength must be sufficient in relation to the weight of the canoe. This may sound rather discouraging at first — especially to young teen-agers and lightweight adults, but there are ways of overcoming these disadvantages. (More on this later.)

To make an open-ended canoe much more buoyant and easier to empty, it is now a very simple matter to fill the ends with a light plastic foam (polyurethane). You simply pour two ingredients together, mix them for a few seconds with a paint-mixing blade in a quarter-inch electric drill motor, set your canoe up on end at the proper angle, and pour in the foam. This foam not only prevents you from having to

## **THE CHICAGOLAND CANOE BASE**

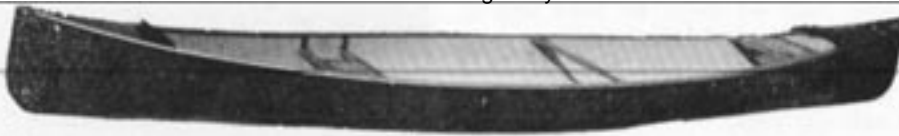
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lift the water that would otherwise be in both ends of the canoe, but it also makes the canoe float much higher on the water when it is upside-down. Also, it strengthens the canoe at a place where it is very liable to be damaged when swamped in big waves or swift river currents.

The late model Grumman canoes cannot be flipped nearly as efficiently as the old models with airtight flotation compartments in each end. The new models have foam at each end, but unfortunately the foam is in compartments that are not water-tight and the foam does not fill them completely. Consequently there is so much space around the foam that enough water gets in just as soon as the canoe is swamped that it makes it much more difficult to empty than the original models. With my new Grumman I sealed the cracks around the flotation bulkhead at each end and also the cracks around the edges of the ends of the gunwales. Also, I further improved its efficiency for emptying when I set the canoe on its ends and poured foam a few inches thick against the flotation bulkheads so it was flush with the end

of the deck. This also allows the water to fall out quicker instead of being caught by the underside of the deck when the canoe is turned upside-down.

While you are using the foam you might like to pour it along the length of one gunwale, on the under side, which gives you slightly more buoyancy for flipping, and helps very much in draining all the water out of the canoe. Normally some water is caught by the solid gunwale and drips when you put your canoe upside-down on your car. The foam along the gunwale can be trimmed to a nice bevel in just a few minutes.

### How Big, How Strong?

Most people will probably want to know what their body weight has to be in order to flip a canoe of a certain weight. I can only give you statistics from my own experience. At 220 pounds I could easily empty my 76-pound Grumman. I can just barely completely empty my braced-up 85-pound new Grumman. There is water about an inch deep left in my 105-pound fiberglass canoe which had air-tight compartments in each end. I can't get to

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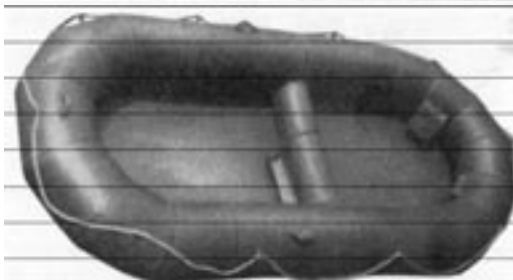
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### QUOTES ED McCARTHY

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first base with my 104-pound 16-foot Old Town with no flotation in the ends.

Theoretically, if a 220-pound person can get almost all the water out of a 105-pound canoe, in direct proportion, a 157-pound man should be able to do the same with a 75-pound canoe. However, I think there are other factors to take into consideration such as strength, length of arms, lung capacity, ability to give a good strong scissors kick, etc. I was very disappointed, after getting one of my friends to buy a new 17-foot Grumman, to find that he was too small to Capistrano-flip it. So I experimented with an automobile inner tube under my armpits and found that with this added buoyancy I could even get all the water, except about enough to cover the ribs, out of my hollow-ended 104-pound Old Town canoe, and my friend, who weighed about 160 pounds, was able to empty his canoe.

This made me realize that the whole idea was worthwhile and merited further thought in regard to canoe safety. I found that if one person gets behind the one who is about to do the Capistrano flip and pushes up under his armpits, it makes it much easier. Two athletic 14-year-old girls, one at the front thwart and one at the back thwart, got almost all the water out of my 76-pound Grumman, without tubes, on their first attempt. Two children should be able to empty a light canoe if they are both using tubes. Without tubes my 6 foot 7 inch nephew (he has me beat by  $\frac{1}{2}$  inch) and I tossed my 85-pound Grumman out of the water so easily on our first attempt that it felt as though it were going to fly out of our hands. Also, without tubes, two 140-pound youths emptied this same canoe. With a tube under your armpits you can empty a Grumman canoe by lifting up one end and turning the canoe over just as you would if you were standing on a low dock. A tube enables me to heave my 105-pound fiberglass canoe about 6 inches off the water.

When using a tube your position should be as far forward on the tube as possible.

#### **Technique and Teamwork**

From a position under the overturned canoe, if you lift the center of one gunwale up on any suitable floating object,

such as an inner tube, you can lift up on the other gunwale and turn the canoe right side up. With foam poured into the ends of a war canoe, any able-bodied crew of good swimmers should be able to Capistrano-flip it with a little practice to get their timing right. One person should give a signal, and then the whole crew should heave in unison.

It is practical to swamp your canoe deliberately so it won't blow away in a strong wind while you dive for a lost object or drowning person. I usually swamp my canoe while helping fellows who are trying out my kayak in the surf. The time lost is negligible. At a demonstration of the Capistrano flip during the opening of the San Clemente swimming pool, from a sitting position in my 76-pound canoe I jumped overboard, turned the canoe completely upside-down and got back in the canoe to a sitting position again, with all the water out, in five and five-tenths seconds, and have done it in less than this unofficially. I mention this to illustrate why ocean canoeing, several miles from shore, can be safe even in stormy weather, if it only takes a few seconds to empty your canoe. I always tie my gunny sack of fish to an inner tube so that in case I should possibly upset (I haven't yet!) there will be no weight tied to the canoe, and I can empty it and then pick up my tube and sack of fish. I always have a spare paddle fastened to the canoe. A very lightweight spare paddle of cedar might make enough difference to enable you to get all the water out.

#### **Other Stratagems**

If you can get almost all the water out of your canoe without a tube, perhaps anything as large and heavy as an automobile tire tube isn't necessary. A light lifejacket or even a rubber skin-diving jacket might make the difference. I often use two small plastic detergent jugs tied together with a short piece of rope. I straddle the rope so the two jugs are completely under water, giving their full support and completely out of my way while I empty the canoe. While paddling, I have the jugs fastened to the center thwart with a light snap hook attached to one end of the rope.

I prefer my center thwart in the

dead-center position because it is most suitable for portaging and surfing, and I use my canoes mostly for surfing. However, if a person wants to do the Capistrano flip and still do a lot of single paddling with his center thwart in back of dead center, I suggest making a sliding center thwart that can be adjusted to any position, or a hinged dead-center thwart that normally lies alongside one gunwale and can quickly be swung into place and locked when needed.

If the canoe is light compared to your body weight, you can flip it when the thwart is set back by placing one hand farther toward the bow along the gunwale to get the proper balance. Or, if there is no center thwart, and you have long enough arms, you can place your left palm against the bottom of the canoe just to the left of the keel line.

I think the Capistrano flip will be a sufficiently important part of your canoeing enjoyment to make it worth considering the weight of your next canoe.

### **The Reward**

Being able to empty your swamped canoe quickly adds to the fun of canoeing because you don't worry about taking chances on tipping over. For example, you can sail in small harbors when the wind is blowing fifty miles per hour, and if you capsize you simply unseat the mast, empty the canoe, reseat the mast, and in less than five minutes you are on your way again. I like to fish standing up in the canoe so I can watch the fish. If I should ever tip over in a choppy sea while playing a big fish, I believe I could quickly tie my pole to the rope on my inner tube, empty my canoe, and then recover my pole and fish. Standing up in a canoe is a pleasant variation while surfing, and of course it is often done while picking your way through unscouted rapids. If you are dressed for swimming, you never give tipping over a second thought when it is so easy to empty your canoe quickly.

In warm weather, if you are in a bathing costume, and get a little water in your canoe, it is much simpler and quicker to get the water out by using the Capistrano flip than by bailing. Also, it is very useful during various

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kinds of games and contests where water gets into the canoe. If, while playing games, you don't want to be seen at night on open water, your canoe can be made much less conspicuous by swamping it right side up, and then giving it the old Capistrano flip when you are ready to paddle on.

### **Some Stormy Voyages**

I actually believe my open canoe is more foolproof on rough ocean trips than my single fiberglass kayak with sealed flotation compartments in each end and waterproof cockpit apron. Even though the Eskimo roll gives you much confidence in your kayak, if the kayak should develop a leak in its flotation tanks it would be very awkward to get the water out during a storm, and to fill the flotation tanks completely with foam would make the kayak too heavy. Besides, a canoe is much more convenient for carrying luggage on an ocean trip. It is surprising what boisterous weather an open canoe will take.

One of the nice things about canoeing is that it offers a variety of opportunities to get away from the humdrum of conventional modern living. One

dark stormy night, for the sheer fun of it, I paddled an open canoe from Catalina Island to Newport, California, when the Avalon Assistant Harbor Master told me that two-thirds of the large yachts had turned back because of the violent wind and large breaking seas. It was really a challenge — like climbing a mountain. When I got out of the lee of the island there was no turning back and in the dark a huge breaking wave swamped me — about thirty miles from the mainland. But what could be safer in the long run than a nimble little craft that can be emptied in a few seconds. I turned off my tiny waterproof compass light and, as soon as my eyes got accustomed to the dark, I found I could judge every breaking wave and avoid them as in a big surf. I really don't consider this sort of thing foolhardy as the water was not particularly cold and the wind was toward the mainland, and I had confidence in the canoe and my ability to empty it. Some of my friends ask me, "What about killer whales when you are out in a small canoe?" Well, that 6-foot dorsal fin does scare me,

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but actually killer whales have never attempted to harm me.

If the sea had been at a below-freezing temperature — as it was on a canoe trip I took up the west coast of Hudson's Bay to the vicinity of the Magnetic North Pole, where ice formed on our gunwales and paddles — I would have considered it poor judgment to make the channel crossing in a canoe when there was no urgent reason for it. Even though I very much admire a man's love for honorable adventurous living, I certainly don't recommend taking any chances in a canoe, or other small craft, unless you have had sufficient experience to anticipate everything that can go wrong — and know that you can win.

If you are traveling in rough seas at night, be sure to have everything except the absolute essentials in a waterproof bag and have the bag tied to a tube and the tube tied to the canoe with a rope sufficiently long so it won't prevent you from emptying your canoe. Then if you don't let go of your paddle you won't lose anything. On a dark

stormy night you can lose your paddle if it drifts even a few feet from you. I fasten my spare paddle to the center thwart with a one-inch-wide rubber band cut from an inner tube. I usually twist the band to make it tight around the grip of the paddle.

Every summer I rescue inexperienced surfboard riders and scuba divers with my canoe when a big surf comes up. The Capistrano flip might save a drowning person's life because you can quickly get all the water out of your canoe and give artificial respiration with the victim lying in the canoe, or quickly get him to shore. Learning the Capistrano flip will certainly add a great deal of pleasure and self-confidence to your canoeing, and of course if you use it to save even one life it will be worth learning. But don't figure you know how to do it from just reading this article. Get out in your canoe and practice it in all kinds of weather. Like the Eskimo roll — it's easy when you know how.



Walter Harvest, Feather River, 1964



# The Dartmouth Phenomenon

By Barbara Wright

An 18-year-old Dartmouth student named Joe Knight missed first place by one second at Jamaica this year in the most hotly contested class—the K1 Eastern Slalom championships. Very few people had ever heard of him, since this was his second major slalom and his first season of competition. He had taken third at the Hudson River Derby the previous week end. Furthermore, this spring marked his introduction to both kayaks and moving water.

We might conclude that Joe's performance must be some sort of accident — one does not usually place in the K1 Easterns in his first season of competition; but this impressive showing was almost matched by Joe's brother Chris in the previous spring of '63, which marked **his** first season of slalom. He placed third in the K1 Easterns — his first competition. And yet a third Dartmouth kayaker has had an impressive first season—Brad Dewey placed second in both the Peterborough and Co-hasset Invitational Slaloms.

Such first-season records for the only three competing young members of the Dartmouth Ledyard Canoe Club are certainly more than a coincidence, and must have a great deal to do with the fact that they were trained by Jay Evans. The manner of their training would seem to warrant analysis — with a start like this, these boys could be good by European standards in a very few years, with the youth and strength to match their skill. Their unusual record suggests that we have a rich source of young potential slalom competitors in America — with too few good teachers to train them.

## Four Years Ago

I first met Jay in the fall of 1960. Although he had been kayaking for some years (see AWW, Summer 1962, p. 2) and done some white-water canoeing with Randy Carter in Virginia, he had not competed, could not roll a kayak and had never heard of an English Gate. In the past two years, he has



Jay Evans

—Photo by Bart Hawthaway

placed among the first four in every slalom he has entered (3 firsts and 2 fourths).

His move to Dartmouth for his new job as an Admissions Officer in the fall of '62 was a great stimulus to his growing interest in competition and in training competitors. That winter in the Dartmouth pool he coached Brad Dewey and Chris Knight in the fundamentals of kayak technique, including the Eskimo roll and English Gate. The following winter Joe Knight joined these evening sessions, which totaled 26 in all. Each man's time for the gate was carefully recorded to the tenth of a second in a notebook. The spirit of friendly competition resulted in rapid progress for all concerned, and Joe set the Dartmouth record for an English Gate at 87.6 seconds (try it!).

Jay devoted a great deal of thought and time to new and faster teaching techniques, and even consulted various authorities as to the most effective ex-

ercises for kayakers. By the early spring of '64 Jay was doing 25 minutes of pulley weights, 40 push-ups, 15 chin-ups, a 20-foot rope climb and ½ mile of indoor track each day. This sort of effort is very un-American; of those at our competitions, only a few European-born Canadians have done as much.

### Analysis Leads to Progress

Besides a thorough appreciation of the virtues of routine training and of keeping records of each man's progress, Jay helps his pupils analyze their particular strengths and weaknesses. One may not lean enough for maximum speed in a turn—another too much. One may over-emphasize speed and sacrifice precision—another, vice versa. Obviously, the number of times a roll or a gate is practiced is irrelevant if it is done incorrectly; continuous analysis and improvement is basic to sound teaching.

Although the Dartmouth program involves routine training, emphasis on precision and analysis of technique, it is not really rigorous training by European standards. The pupils are full-time students, and good ones at that. During the summer of '63 the program was dropped completely, due to summer school and jobs elsewhere. And yet, in spite of this, their program represents the nearest thing to European training that I have heard of in America. The results speak for themselves. Perhaps we are beginning to learn that the "Technik und Trainieren" advocated so strongly by our Czech coach Nic (AWW, Winter 63/64) pays off in the United States as well as in Europe.

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# English-Gating at Dartmouth

By Jay Evans

During the long winter season when the days are short and snow is piled deep in the hills most Dartmouth students spend a good deal of time outdoors skiing but a dedicated few, by the dark of night, slip down to the Alumni gym, brave 4-foot snow drifts and 20-below temperatures to launch their kayaks in the indoor college pool. By special arrangement with the Athletic Association, the Ledyard Canoe Club of Dartmouth is granted the use of the pool two evenings per week from 8:30 to 10:30 p.m. The club offers instruction in kayaking and during the past winter has specialized in leading an assault on the English Gate.

This series of maneuvers, described in an earlier AWA Journal (Autumn, 1962) involves four basic phases. The first consists of passing through a gate three times forward. In the second phase the kayak proceeds backward down the outside of a pole, rolls, then goes forward through the gate and repeats the process on the other side. In the third phase the kayak goes backward down the outside of a pole, turns and goes backward through the gate. Now—instead of making a 360-degree turn and backing through the gate again as described originally in [British] **White Water**, we altered this phase and made it somewhat longer by having the kayak, after negotiating the gate in reverse, back down the outside of the other pole, turn and go through backward again. This leaves the fourth phase which consists of moving forward past the outside of a pole, rolling, then backward through the gate and repeating the process on the other side to complete the English Gate.

At the start of the season last November it was difficult for anyone in the club to complete the entire English Gate (using the longer route) without touching a pole under two minutes. After a couple of weeks of practice, however, a score of 110 (one minute and 50 seconds) was

easily broken but the 100-point barrier loomed up like the four-minute mile. It wasn't until after New Year's that one of us succeeded in breaking the 100-point barrier with a record run of 98 clean—without touching a pole. Once this was accomplished by one person, however, it was surprising how quickly all the other kayakers followed and were soon consistently under 100 points.

We next set our sights on 90 points (one minute 30 seconds). Here we ran into trouble until someone suggested using pulley weights similar to those employed by swimmers to develop strong arms and shoulder muscles. Two members experimented with pulley weights by working out with them for 25 minutes per day, 5 days per week. After three weeks of grunting, sweating and groaning we stepped back into our boats and attempted the English Gate. The first run was done in 88.7 with one hit which we attributed to rustiness owing to our three-week layoff.

We were so impressed by the huge gain that we've been using pulley weights daily ever since and now we can go consistently under 90 at any time without tiring greatly. We feel that 85 is attainable in the future and that 80 might even be broken by using the old third phase.

We would be interested in exchanging information with other clubs who use the English Gate as a training device. We have found that gating under 90 requires rolls to be done in 2.2 seconds or less and that each paddle stroke, like ballet, must have a reason as well as a rhythm. One false stroke and you have lost valuable seconds.

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# RACING REPORT

By David A. Kurtz  
Racing Editor and  
ACA Slalom Chairman

Inquiries have recently been made which indicate that the Corps of Engineers will be very receptive in working with canoeists in several areas. Wildwater Boating Club (State College, Penna.) members met with Col. Roy S. Kelley of the Baltimore District recently to discuss ideas. The results were as follows:

On the use of water impounded by Corps-operated dams: Col. Kelley said that his group would be very receptive to suggestions for water release to favor canoeists on week ends provided proper arrangements were made in advance. It would be assumed that as wide a use of this water as possible would be made by paddlers.

On the future dam constructions: The discussions indicated that if canoeists took a proper interest they could be consulted during the planning of future dams. Ideas to be brought to engineers' attention would be these:

1. Preservation of naturally beautiful areas that are also attractive white-water sites.

2. Setup of possible slalom sites and wildwater race sites below existing dams. From four to six miles is quite acceptable for a wildwater race.

3. Design of new dams to include such boat use as going over a chute, and setting up of permanent slalom sites below.

The appropriate plan is to have canoeists get to know these people and plan with them for developments that will occur 5, 10, and 15 years from now. Far-sighted thinking and action will help.

I had hoped to publish a list of offices to seek for implementing these ideas, but it turns out that over the U. S. and areas abroad there are 42 offices. All addresses are available from Dave Kurtz, AWW Racing Editor.

It must suffice to include the cities and areas where district offices do exist. These are:

LOWER MISS. VALLEY: Memphis, New Orleans, St. Louis, Vicksburg

MISSOURI RIVER: Kansas City, Omaha

NEW ENGLAND: (entire area)

NORTH ATLANTIC: Baltimore, New York, Norfolk, Philadelphia

NORTH CENTRAL: Buffalo, Chicago, Detroit, Rock Island, St. Paul, Lake Survey

NORTH PACIFIC: Portland, Alaska, Seattle, Walla Walla

OHIO RIVER: Huntington, W. Va., Louisville, Nashville, Pittsburgh

PACIFIC OCEAN: Far East, Honolulu, Okinawa

SOUTH ATLANTIC: Charleston, Cavanaugh, Jacksonville, Mobile, Savannah, Wilmington

SOUTH PACIFIC: Los Angeles, Sacramento, San Francisco

SOUTHWESTERN: Albuquerque, Fort Worth, Galveston, Little Rock, Tulsa.

## News Notes

The United States is officially on record as opposing a mid-June date for the 1965 World Championships. Reasons given were that some schools would not be out by that time to allow student participation and the early time would not allow sufficient time for training.

In a reply to the above protest Olov Verner, Secretary of the International Canoe Federation, indicated that the Championships in 1965 would not be in Merano but rather probably again in Spittal, Austria. The Italians apparently would not give visas to the East Germans.

A personal letter from Milan Horvyna of Czechoslovakia (in 1963 10th in Slalom and 3rd in Wildwater both in



## Two Eastern Races, 1964

**Above:** Bill Bickham shows brooding earnestness as he wins the C-1 title at the Brandywine. **Above, right:** the Zobs (Al and Sandra) rise to their highest potential in the Loyalsock Slalom. **Below:** Bill Bickham again in a trick passage.

—Photos by Bart Hauthaway

C-2) indicates that the World Championships will be in either Spittal or North Tyrol of Austria on July 30 to August 3. \* \* \*

Helmut Leitner of Austria (in 1963 11th in Slalom F-1 and 8th in Wildwater R-1) was drowned at the start of the wildwater race at Merano this year on June 6. The unofficial report received was that the elastic in his spray skirt had broken and he had tied himself into the boat at the start of the race.

### Results:

#### 12th Annual International Slalom Arkansas River at Salida, Colorado June 12, 1963

##### R-1

1. Karl Heinz Englet, W. Ger. ... 258.8
2. Marcel Beaujean, Belg. .... 295.8
3. Roger Paris; USA ... 303.8
4. Al Zob, Canada ..... 320.2
5. Rudolf Wermuth, Switz. ... 342.5

##### F-1

1. Ted Makris, USA ..... — 372.7
2. Dan Makris, USA ..... 450.8
3. Siegi Guenzenberger, W. Ger. 459.7

(Continued on Page 18)



## Captain Wanted

Applications are now being received for the position of U. S. Team Captain for the 1965 Slalom and Wildwater team.

The following are the qualifications upon which selection will be made:

1. Fluent knowledge of German.
2. Competent skill in wildwater boating.

3. Detailed familiarity with slalom and wildwater rules and competitions.

Duties will be:

1. Represent the U. S. Team at various meetings during the championships.

2. Arrange possible visitations and practice with European canoe clubs.

3. Handle emergency aid in cases of accident. Serve as trainer for the team.

4. Arrange emergency use of borrowed equipment.

5. Be on hand as much as possible for team training programs both here and abroad.

6. Other arrangements for the good of the team to promote efficiency and good will, such as obtaining gifts for European clubs and people who help us.

The captain will not be expected to do menial tasks for individual team members.

The Captain will at the same time receive these benefits:

1. Reimbursement of travel expenses as much as any other team member.

2. Team uniform.

3. Opportunities for boating in Europe while not actually required for above responsibilities.

Applications must be by letter giving all possible information in support of the application and sent to

David A. Kurtz  
National Slalom Chairman,  
ACA  
623 W. College Ave.,  
State College, Penna. 16801

(Continued from Page 16)

4. Chuck Campton, USA ..... 453.0
5. Bennie Campton, USA ..... 894.6

### C-1

1. Tom Southworth, USA ..... 386.5
2. David Kurtz, USA ..... 560.5
3. Tom Johnson, USA ..... 912.2

### C-2

1. R. Paris-R. Wermuth.  
USA-Switz. .... 422.9
2. B. Campton-D. Makris, USA ... 1004.7
3. T. Makris-R. Feraro, USA ..... 1430.6

### C-2M

1. Novak-Novakova, Czecho. .... 376.0
2. A. Page-T. Southworth, USA .. 680.5
3. T. Johnson-G. Minnick, USA ... 822.2
4. T. Cooper-J. Cooper, USA ..... 1017.0
5. D. Kurtz-S. Blair, USA ..... 1157.7

### R-1W

1. Vretka Novak, Czecho. .... 391.8
2. Jackie Paris, USA ..... 577.1
3. Kay Harvest, USA ..... 863.0
4. Gail Minnick, USA ..... 1208.7

### Team

1. Guenzenberger-Morrissey-  
Beaujean ..... 459.9
2. Englet-Neudecker-Wermuth ..... 500.0
3. Paris-Harvest-DeBord ..... 726.7
4. B. Camyton-T. Makris-  
D. Makris ..... 869.5
5. Zob-Baur-Lyle ..... 1089.1

Esopus Invitational Giant Slalom  
Esopus River at **Phoenicia**, New York  
June 6-7, 1964

### C-1

1. Bill Bickham ..... 1116
2. Tom Southworth ..... 1162
3. Chuck Kaufman ..... 1278
4. Bill Heinzerling ..... 1355
5. John Connet ..... 1377

### C-2

1. Heinzerling-Kaufman ..... 1257
2. Hoiberg-Tillson ..... 1347
3. Fawcett-Dougherty ..... 1442
4. Hedden-Hedden ..... 1526
5. Danielson-Greulich ..... 1781

### C-2M

1. Bickham-Wright ..... 1210
2. T. Southworth-Abrams ..... 1263
3. Hedden-Davis ..... 1419
4. J. Connet-P. Connet ..... 1428
5. J. Berry-K. Berry ..... 1469

### K-1

1. Bill Prime ..... 1052
2. Mike Stanley ..... 1056
3. Dan Sullivan ..... 1139
4. John Reid ..... 1161
5. Ken Wisner ..... 1168

**K-1W**

1. Barbara Wright .....	1171
2. Marion Hardy .....	1530
3. Nancy Abrams .....	1639
4. Nancy Brady .....	1884
5. Ann Dodge .....	1903

**Credit River Slalom**  
**Erindale Park, Ontario**  
**April 11-12, 1964**

**K-1**

1. Al Zob .....	214.8
2. Ekhardt Rapin .....	237.0
3. Keith Daniel .....	245.6
4. Manfred Baur .....	254.8
5. Hans Rostock .....	279.0

**C-1**

1. Roger Parsons .....	306.0
2. Barry Brigley .....	338.4
3. Ross Durfey .....	258.4
4. Tim Williams .....	386.0
5. Rex Anderson .....	387.6

**C-2**

1. Poenn-Stark .....	325.8
2. Brigley-Jack .....	337.4
3. Williams-Partridge .....	359.6
4. Moecking-Grell .....	412.8
5. G. Keyser-Vanderleck .....	514.6

**C-2 Junior**

1. Durfey-Scott .....	365.0
2. Daniels-Ratcliffe .....	495.8
3. Keyser-Longman .....	542.0
4. Chettle-Wyle .....	591.6

**C-2M**

1. Roger and Kathy Parsons .....	426.2
2. Al and Sandra Zob .....	465.4
3. Poenn-Bates .....	579.2
4. Tyrell-B. Brennan .....	580.6

**Team**

1. Baur-Daniel-Poenn .....	321.2
2. Lyle-Rapin-Rostock .....	449.8
3. Anderson-Scott-Daniel .....	465.2
4. Moecking-Parsons-Poenn .....	533.6
5. Brigley-Durfey-Parsons .....	534.8

**Credit River Wildwater Race**  
**Erindale, Ontario**  
**April 12, 1964**

**K-1**

1. Al Zob .....	25:08
2. Tom Lyle .....	26:08
3. Manfred Baur .....	26:31
4. Keith Daniel .....	27:00
5. Heinz Poenn .....	27:11

**C-2**

1. Pula-Eggle .....	31:08
2. Manester-Parsons .....	32:04
3. Gyapay-Molnar Norley-Thompson, tie .....	32:16
5. MacLachlan-Easton .....	32:21

**C-1**

1. Henry Ottenhof .....	35:00
2. Jim Stevenson .....	36:42
3. John Newburg .....	40:23

## A Jet Propelled Canoe, Yet!

It's fascinating to keep up with the latest effluvia of technological progress.

In my day I have seen solid gold toothpicks, jeweled zippers, and chrome-plated tie-rods; but a recent press release proudly announces an item which tops 'em all for sheer effervescent incongruity. A Wisconsin firm is now offering a jet-propelled canoe!

I'm serious! This new gem of nautical nicety consists of a 17' fiberglass canoe with a built-in 2½ HP motor and a jet propulsion system. The power plant adds a mere 20 pounds to the weight of the craft! This may seem a bit heavy to those of us who strive to build kayaks with an overall weight below thirty pounds, but think of the advantages! Now we can go for a quiet cruise with-

out the effort of holding a paddle. We can enjoy the beauties of nature without exertion, soothed and lulled by the put-put of the inboard motor and can even enhance the landscape with a plume of exhaust fumes!

Hail to progress!

— Martin Vanderveen

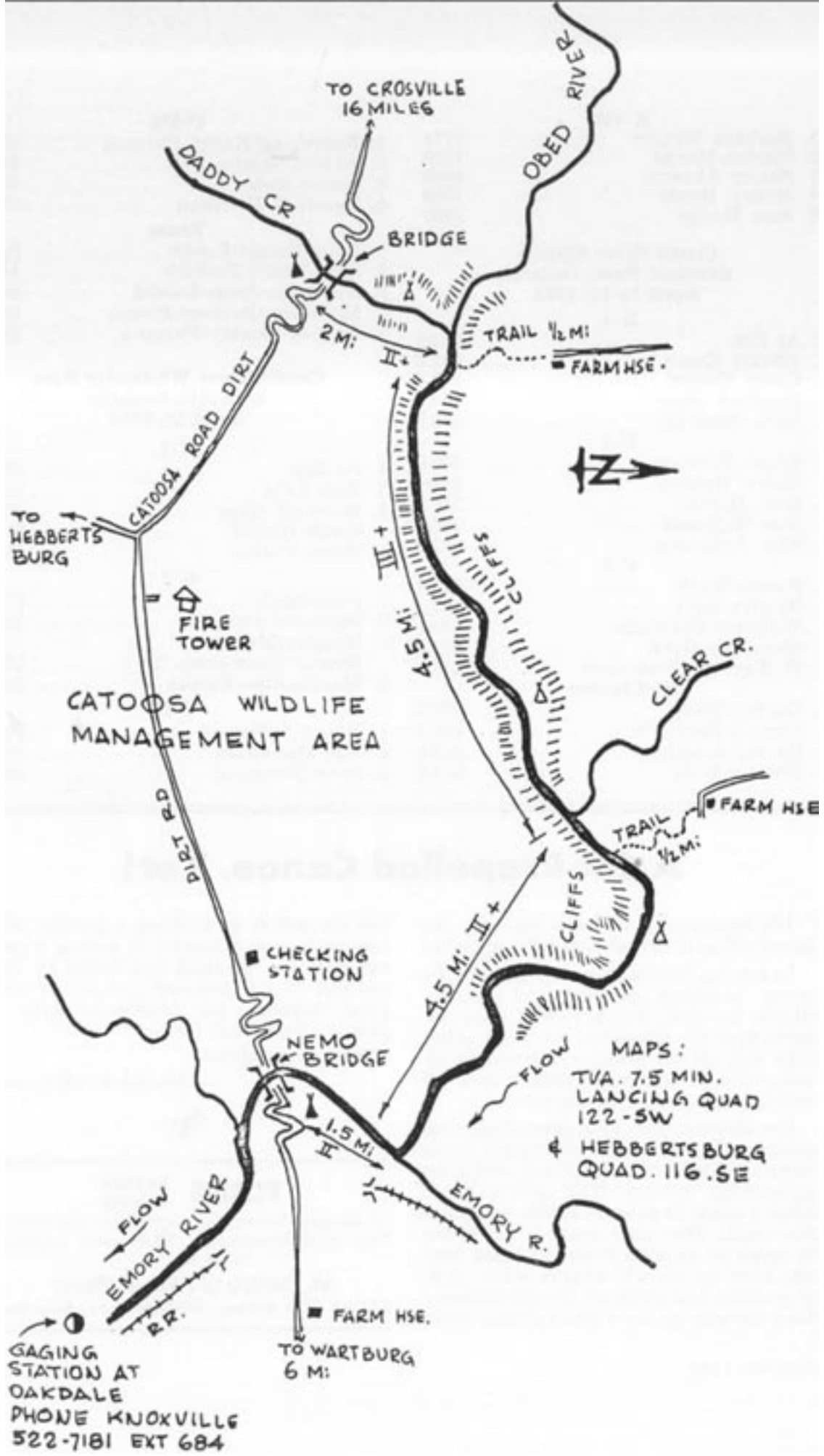


### PLANS — KAYAKS CANOES

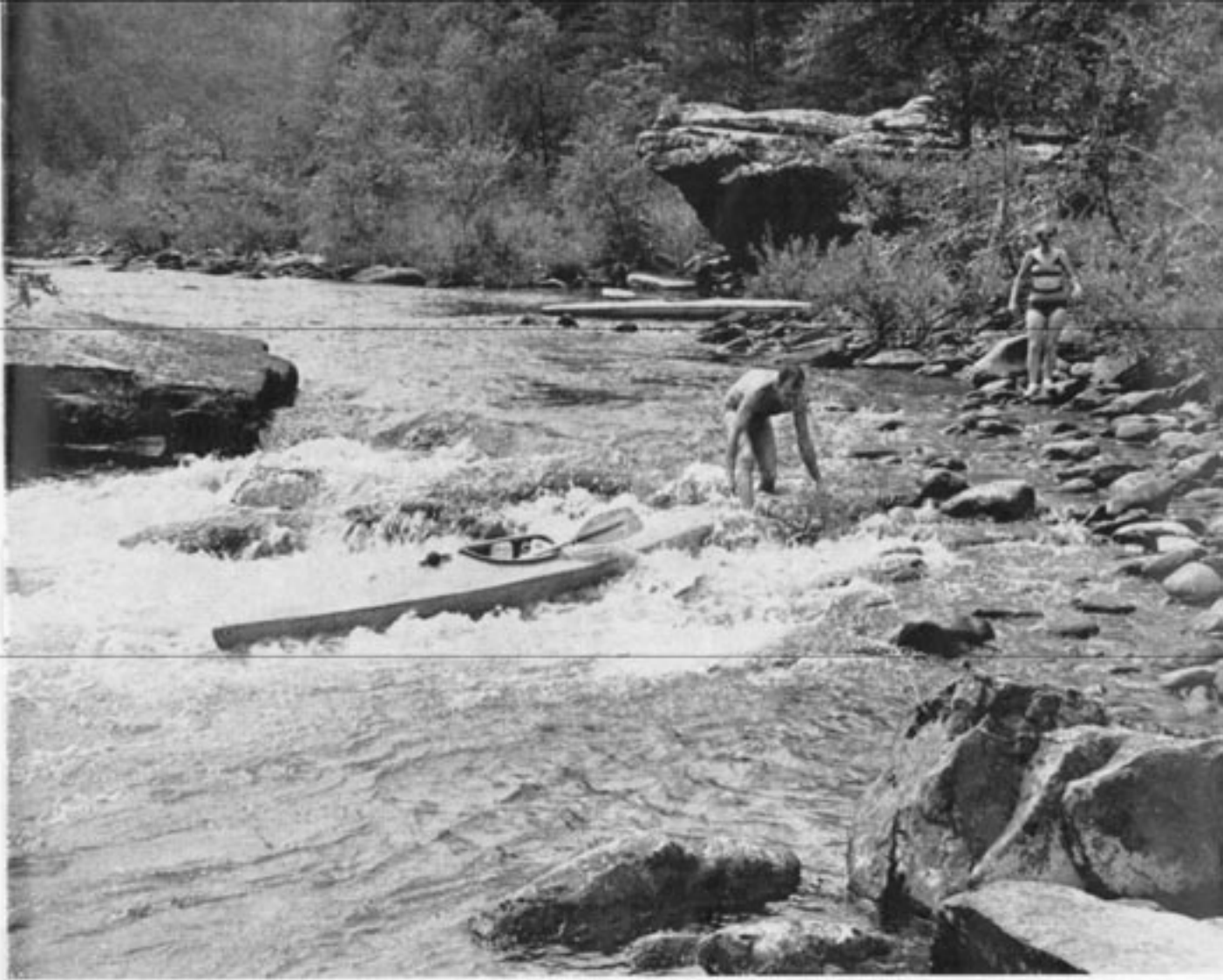
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## River Reports: Tennessee's Obed

By John Bombay

To a Westerner (such as I myself had become by adoption) the Cumberlands at first would barely seem to merit the name of "mountains." Hills, rather, not remotely comparable to the rugged Sierra, the Rockies and the Olympics.

But soon the visitor will be enchanted by the lush green picturesque valleys, and the rather steep, densely wooded slopes of these mountains. This duly happened to me after my California employer displaced me to Tennessee to oversee an engineering project that would take at least two years (and has actually taken three, with more time to serve).

I had brought my kayak along, hav-

ing been told by my friend Peter Whitney that there were indeed rivers in the Cumberlands, and since I would not feel comfortable without it anyway. Now I am congratulating myself for the stubbornness that made me bring that rigid cigar-shaped boat, which inspired the usual comment and questions all the way from San Francisco to Oak Ridge.

### Discovery of Beauty

For I discovered some most exciting white-water rivers in this area, some of which I have already written up for AWW (Summer, 1962; Winter 62/63; Spring, 1963). Perhaps they are not as brazen as out West, but they demand a great deal of skill and offer beautiful

lush valleys to explore.

It was on a club trip on the Obed river that I happened to board a clumsy 17-ft. canoe (though I am by preference a kayaker) because a cute girl wished to learn more about white-water boating. I was some gondolier. I would float a fast pool, stop at the head of a rapid to disembark the girl, let her walk down while I ran the rapid solo, then re-embark her.

But after a few of these time-consuming gallantries the girl decided she wanted the fun of riding the rapid too, and once she had experienced it, she would not get out any more.

### **So We Got Married**

She showed such white-water potential soon thereafter that I decided to ask her to marry me, and did so. . . . One cannot go on forever educating girls in our noble sport for some other guy's benefit. . . . But back to that beautiful Obed River.

The Obed and its tributary, Daddy Creek, together make one of the few wilderness streams remaining in that populated area. These rivers originate on the Cumberland plateau near Crossville, Tenn., on Highway 70; the Obed runs into the Emory River near Wartburg on Highway 27 (see map).

Since they drop 40 to 20 ft. per mile they make exciting white-water streams at a run-off of 500 c.f.s. or more. The rivers run through, and at the edge of, the Catoosa Wildlife Management Area and are sheltered in 300-to-400-ft. roadless canyons, which keep them essentially unspoiled.

### **The Put-In Bridge**

Our put-in spot is in the Catoosa Wildlife Area at the bridge across 60-ft.-wide Daddy Creek. Here there is a campsite where the car can safely be left.

If the water level is below 500 c.f.s. one has to line a canoe through most of the numerous rapids—even a kayak can't wiggle through them all. But even with lining, this trip is delightful because of the true sense of wilderness in the enchanting canyon.

Above 1500 c.f.s. this is a delightful white-water run.

We never camp at the Catoosa campsite but rather float down Daddy Creek for a mile or so and camp on one of the many hidden sandy beaches.

Because of the afternoon thunderstorms it is advisable to bring a rain shelter, although good sleeping quarters can be found under overhanging cliffs for those who do not care to sleep

on the beaches. There is no mosquito problem that a dab of repellent will not take care of.

### **River Is Doubled**

Once arrived at the confluence of the Obed, the real test of your boating skills will begin. Here the river becomes about 100 ft. wide since Daddy's water doubles that of the Obed. Towering wooded canyon walls are all around you, up to 400 feet high. Looking up the Obed from the fork, you see many cascading rapids until the river turns out of sight. Soon I hope to explore (and report on) this promising stretch too.

Downstream one hears the noise of big rapids echoing between the canyon walls. About 3 miles below the fork is a challenging (Class IV) rapid. The cliffs choke the river to half its width and the fast main chute turns to the right where it suddenly is forced left again by a huge boulder.

The less venturesome will prefer to land on a tremendous slanted boulder in the river and lower the boat along its steep wall to below the chute, or when the water is above 1500 c.f.s., portage or line the whole mess at the extreme left.

Short fast pools and steep rapids of Class III follow in quick succession until one reaches Clear Creek. Last year I ran this stretch at 350 c.f.s. with a canoe, and had to line half the rapids. It took us from 10 a.m. until 3 p.m. for these four miles. Above 500 c.f.s. this stretch becomes a wild kayak run and at 1500 c.f.s. a team with a decked canoe will have its hands full because expert precise maneuvering is required.

### **Campsite Is Delectable**

There are several delightful campsites along this stretch, one beach being about 200 yards long, with soft white sand providentially strewn with driftwood. A few trees are there to give shade in the heat of the afternoon sun. We prefer to stay at this beach, located about a quarter-mile above the Clear Creek fork, for the sake of its good fishing and swimming hole. It was there that, last year, a nasty fighting 32-in. muskie closed his big tooth-studded yap over my spinner and made my 8-lb.-test line protest.

From Clear Creek to the Emory River one finds the same fine scenery, clear pools, exciting rapids, and wooded steep canyon walls. But the rapids became an easier Class 11-plus, the pools become longer and deeper. Now we find more time to relax and try our luck for rock bass, muskie, bluegills and catfish.



Soon our trip ends at the "Nemo" bridge over the Emory where our shuttle car awaits us. The Class II run on the Emory is easy, but a railroad along its shore spoils the scenery.

We normally put in on Friday night, camp along the river that night. On Saturday night we are at the Clear Creek beach; we take out early Sunday afternoon. This allows much more time for relaxing and fishing, or to observe the wildlife along the shore. The quiet stalker may observe deer, wild turkey, and other animals.

Local farmers come down the trails to fish near the Obed junction with Clear Creek, and their campsites are strewn with glass and empty cans as usual, so it's best to camp well away from this area.

#### A Week End Is Needed

One should not try this trip in one day. The rapids are too difficult in places, and too numerous. At 500 c.f.s. one needs two days. The river is best run by the "cowboys" when the gauge on the Emory at Oakdale reads 2,000 to 3,000 c.f.s., equivalent to about 1,500 to 2,500 on the Obed. During the early spring and summer the runoff fluctuates between 5,000 c.f.s. after a heavy prolonged rain and 300 c.f.s. normal.

The Daddy and Obed are natural muskie spawning streams, but local folks have slaughtered undersized fish and now one rarely catches a muskie. Two years ago, though, I saw a 4-ft.-6-in. muskie caught at the Emory junction.

Of course, as it goes for all our worthwhile wilderness streams, the Obed is also scheduled for extinction: a dam(n) is proposed on the Emory that would back up water way into Daddy Creek.

#### It's "Our" Stream

My wife and I have adopted this wonderful stream as our own. One can observe the fish dart at the lure and see it fight for its freedom. This clarity is in sharp contrast with the muddy lakes and rivers in the "civilized" parts of Tennessee. When floating down the Obed, many a rock bass swims over to say hello, because we always release the critters and they know it!

If anybody wants to join us, we will show them our favorite bluegill fishing spot under the waterfall of a rivulet that clatters down a sheer cliff into a beautiful quiet pool, surrounded by wildflowers and blueberry bushes. We will serve our special Obed blueberry hotcakes with brandy syrup in the

morning, and bubbling strong camp coffee for those who know how to strain the coffee grounds between their teeth.



### A Training Film

**"Advanced White Water Kayaking,"** filmed by members of the Sierra Club: 8mm, color, silent, 30 minutes, edited 1962, now is available for showings. Filmed during club trips on the North Fork of the Feather River near Belden, Calif., site of the 1962 National Slalom and Downriver Kayak Races. This is a fast section of the river with interesting hydraulics, almost no pools, and few back-eddies.

The picture shows techniques, including paddle bracing and eskimo-roll recoveries in rapids, with fast action guaranteed during every minute.

Available to other clubs at a \$2.00 advance charge which **includes** postage to user from: Sierra Club River Touring Section Film Library, c/o Charles E. Smith, 1760 Walnut St., Apt. 203, Berkeley 9, Calif.

Boston Kayak .....	\$1 85
Boston C-1 .....	\$1 85
Boston C-2 .....	\$1 95
17 Foot Canoe * .....	\$200

Custom Kayak Paddies:	
Standard, Lightweight,	
or Spooned (right or left)....	\$16
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Custom Canoe Paddles.....	\$10

**We have moved to larger quarters, please note new address:**

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 Area 617 CL 9-8348



His paddle abandoned, Duffek submerges . . .



. . . the big explosion wave has the boat.

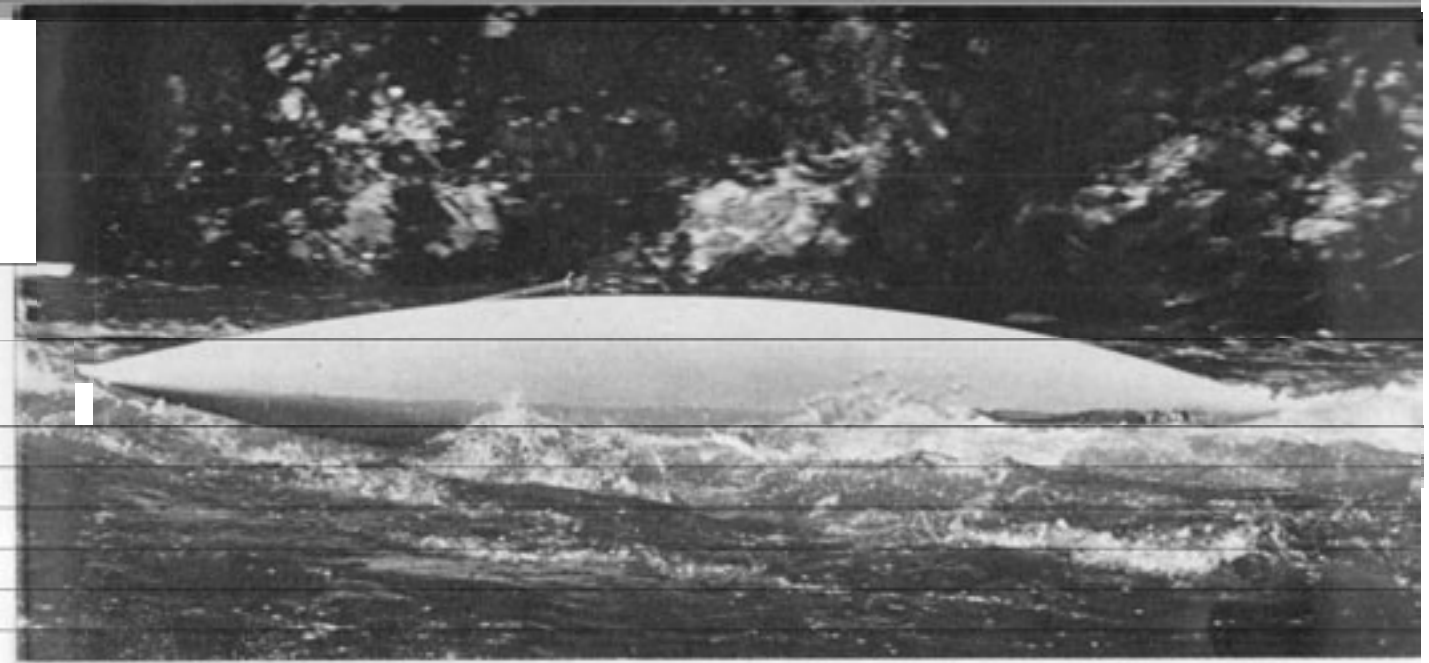
## Milo Duffek Makes White-Water History

Toward the end of the Sierra Club RTS sessions with Milo Duffek on the Feather River, our guest casually began to make preparations that involved strapping a paddle-half on the deck of his borrowed Paris kayak.

The jet that thunders down from above at 1400 c.f.s. here prolongs itself in a fast, writhing jet that periodically erupts in an exploding wave. On either

side are eddies that match the jet for strength. A slalom gate was hung for practice above the jet, just as is usually done for formal slaloms.

Milo paddled out into the far eddy and studied the explosion wave while fastening his nose clip. Then he took a few sharp accelerating strokes and — just before cutting into the current — threw his double paddle to the bank.



The boat begins to rise . . .



. . . and Duffek triumphs with a hands-only roll.

The kayak buried itself in the exploding wave as Milo grasped his two gunwales and submerged (Fig. 1). The wave buried the boat as it swung under the slalom gate, moving downstream (Fig. 2).

While onlookers held their breaths, the kayak began to rise (Fig. 3) and in a moment, Milo had succeeded for the first time in a hands-only roll in strong waves. All his previous hands-only rolls had been in calm water. So strong was his paddling with hands that he

didn't even need the spare paddle to catch the back-eddy!

Twice he repeated the maneuver, without a single failure.

It was not Milo's only "first" during his U. S. visit. Our Colorado friends report that he successfully made his first **one-hand, no-paddle** roll during his session with them in calm water.

It remains to be seen whether these feats have been duplicated by other paddlers, in the U. S. or abroad.

—P. D. W.

# The Sound of Metal

The rivers are getting full of metal, and their sound is the clanging of aluminum as the careless canoeist bangs along over the rocks, hardly bothering to pick the best course, or caring about a few more dents on the already dented-up old job he's riding. This is getting to be such a common sight and sound that when one of the few wooden canoes comes along on a white water run it creates quite a stir, for here is a fragile, beautiful craft, in the hands of a craftsman, making a clean and silent run through a tricky bed of rocks and ledges.

The thought so often comes back to the oldtimers, "We've gotten too far away from the old canoes, from the clean run, and the loving care we gave our wood-and-canvas jobs. We've gotten careless and sloppy just because we've gotten used to a metal job that a few more dents won't make any difference on."

On a recent trip there were about twenty metal jobs and one wooden one—a new lightweight model belonging to the writer. It was 15 feet long, covered with dacron, and specially reinforced for the rigors of white water; and yet it weighed only 48 pounds instead of the 75 pounds for the aluminum canoe of equal length.

Its woodwork is beautiful to behold, and it is a joy to own, and it looks like a canoe. It is made of red cedar from the quiet Northern forests, with gunwales cut from a tall spruce in Canada, and from mahogany trees growing stately and mighty above the forests of Honduras. From the great outdoors came the woods from which it was made, and its silent travel along the rivers suggests moccasin-clad feet and the quiet of the wilderness.

A man can love a wooden canoe and he will handle it tenderly. The metal job evokes no such love from its owner for it was stamped out by a great machine, and riveted with a noisy air-hammer, exactly like ten thousand others. Not so the wood and canvas job. Every nail and screw has been driven by a human hand, proud of its craftsmanship, and fashioned with individual care.

I feel that among many of the experts there is a swing back to the wood and canvas canoes. It is like riding an English saddle—it takes a real horseman. Most anyone can stay in a Western saddle, snugly held in front and back, with a pommel to hold onto in case of emergency.

The real sportsman is not interested in total security. No sportsman wants to shoot a lion whose head has been tied to a tree. Likewise the expert canoeist wants something more than the metal job that has made him careless. He wants something beautiful, light, and living to guide with his skilled hands down a white-water river.

—Randy Carter

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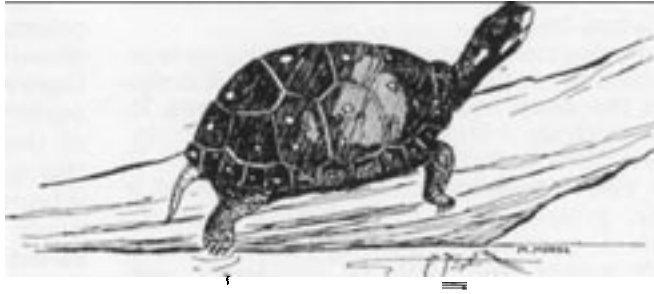
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# Conservation Comment



## The Tragicomedy of the Colorado River

By D. B. Luten

*(Ed. Note: The author, a lecturer in geography at the University of California and a distinguished conservationist, has had a long career in matters relating to natural resources. The article below is abstracted from a broadcast on radio station KPFA, Berkeley, Calif.)*

The latter half of June, 1964, I spent on the waters of Lake Powell. You may not have heard of Lake Powell, even though its design indicates it to be 185 miles long, to have an area of 155,000 acres (240 square miles) and to have 1800 miles of shoreline. But the United States is filling up, in an almost literal sense, with such lakes. And I say the "design" length because Lake Powell is another great reservoir located on what was the Colorado River in southern Utah. Beneath it is entombed the Glen Canyon of a major defeat of wildlands conservation.

If Lake Powell is ever filled it will be a curious sort of lake, because it will have about the same water area as San Francisco Bay, but will have six times the shoreline: about as much, in fact as the West Coast of the United States.

When John Wesley Powell first floated down the Colorado River, he spared little time in his records for Glen Canyon, the last 150 miles through what was to become the State of Utah. It was so beautiful and so tranquil after the terrors of the passage through Cataract Canyon just upstream and of the unknown canyons still to be encountered. Do not scoff. Although river runners are wont today to regard the Grand Canyon as easy, perhaps no man alive is so bold as to find the first venture into the unknown easier than succeeding ones. The first westward passage of the Atlantic was the hardest; the first ascent of Everest the most difficult; the first man to reach

the South Pole was the bravest.

Powell's party was enraptured by this moment of peace, and he wrote with pleasure of its oak- and fern-filled glens. And so they named it. Later travelers identified these glens as the deeply incised canyons of minor tributaries, and one of the major fascinations of all recent visitors has been with the side canyons. But first, a word for the central canyon.

Here, perhaps eighty million years ago, was a red Jurassic desert of sand dunes perhaps a little above sea level. Later it sank and became a Cretaceous sea bottom. The sand dunes became lightly cemented together by the limy deposits of marine animals. Subsequently it rose slightly and a marshy river system drained it outward to the southwest. In subsequent tens of millions of years a continuing distention of the bowels of the earth led to an enormous uplift of what had long been sea bottom.

But the river had set its course, and as the land rose the river began to cut its way through. At first it meandered far and wide over these plains and left the gravels of its mountain sources in many places. Later it set its course, or perhaps rightly it was trapped in its own ruts. Never apparently was the river seriously rushed in its work. While the rocks were rising by a good eight thousand feet in Grand Canyon, the river could probably, had it been hurried, have cut its way through 80,000 feet of such rock. At any rate, today it is eroding its basin at a good ten times the rate required during the formation of the canyons. Whether this means the swelling of the region is accelerating or whether it simply means that we are paying the piper for the last century of

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over-grazing of these fragile arid lands. I do not know.

At any rate, last year Glen Canyon was a narrow defile in the pale red Navajo and the deep red Wingate Sandstones. It was perhaps a thousand feet deep, rarely more than a half-mile wide. Through it the river, perhaps 12 million acre-feet a year, poured in a quiet brown torrent, with a current of perhaps six knots at high water, and with an enormous and erosive sediment burden, approaching one-half per cent of the water. In June at high water you could see through perhaps a quarter-inch of its water. But its flavor was fine if you gave the major grit a few minutes to settle out. In September, at low water, it was much clearer — perhaps a visibility of six inches.

#### **Arid Above, Lush Below**

Up on the rim, the land is rolling domes of bare Navajo sandstone or sparse pastures of ancient stream gravels. A desolate and inhospitable land. But down in the canyon, the gift of water and of heat led to a lush vegetation at any shoreline.

As the river used its ample burden of grit to grind its way downward, its small local tributaries were often quite well able to keep up with it, and accordingly there arose an intricate branching of side canyons. Some of these were a thousand feet deep and still only perhaps fifty feet wide at the top. More often than not, portions of the walls are overhanging and one of the miracles of Glen Canyon was its roofed amphitheaters and its great grottos where current stream beds are much wider than their ancient ancestors. While many of these canyons have small permanent streams, it was not these which carved the side canyons. This task was done by the occasional flash floods resulting from summer thunderstorms.

In the bottoms of these, or along the walls wherever water permeated to the surface, a rich vegetation was found, from an ever-present maidenhair fern to grasses, canes, willows, redbud, cottonwood and a small oak.

#### **All This Is Buried Now**

Today Glen Canyon is largely buried under hundreds of feet of water. Glen Canyon was doomed by the American resources policy which says that water is useful in arid lands and that all of it must be made available to anyone who may wish to use it.

The dam was justified on several counts. First, it appeared that Lake Mead's value as a reservoir and Hoover Dam's hydro-power potential must ultimately be jeopardized by the silting-up of the Lake. Accordingly, it was argued, the silt should be taken out farther upstream. A lot of wild guesses have been made about silting up. Some may be based on guesses as to the silt burden of the river, some on unaccepted determinations of the silt burden. It is not an easy number to get at. Some may be based on assumptions about a tolerable fraction of silting-in of Lake Mead. The simple-minded estimate is that with Lake Mead holding two years' flow of the Colorado River and with the incoming water carrying about one-half per cent of silt, the time for complete filling is  $2 \text{ over } 0.005$ , or 400 years. In fact, the time would be much greater, for as the reservoir silts in, the river will build up a new flood-plain extending many miles upstream of the reservoir. The shortest estimate I have heard is 80 years, and this must be based on some notion of the amount of sedimentation that is tolerable. It just might also be a subjective estimate with some idea of keeping the construction industry in the big dam business.

So, now we have built Lake Powell to keep the silt out of Lake Mead and, in time, of course, to fill itself up.

#### **Too Much Was Given Away**

Next, it was argued, rights to so much water have been given away along the Colorado River that only by the very best of regulation of flow can demands be met. In fact, this is an understatement. The partition of water rights along the river was based on stream flows during the first quarter of this century. It now becomes clear that this was a wet period and that it has been succeeded by a dry period of a quarter-century. It also appears that the average for this century may be about the same as the long-term average. Eight hundred years of tree ring measurements suggest this to be so.

Be that as it may, some years are of course wetter than others, and if one subscribes to the policy of full use of the river, then he should assent to enough reservoir capacity to carry over water from the wettest of years into the driest. The difficulty here, and it only came to

light after the dam was well under way, is that as much water will be lost by evaporation from the reservoir surface as will be carried over from wet into dry years. So, again, now that Glen Canyon Dam is built, it is quite clear that it adds nothing to the long-term water supply of the river.

Third, it was argued that the upstream irrigation proposals could not provide water at tolerable prices and that such projects must be supported by hydro-power generated at Glen Canyon Dam. We could, of course, have built steam-power plants on top of the world's greatest coal fields in Colorado, Utah, and Wyoming and used that revenue to pay for irrigation, but that would be government competition with private enterprise. Federal hydro-power is, in our tradition, not public power, especially if it is used to subsidize irrigation.

We, of course, would never dream of taxing our tuna fishery to provide fish ladders for salmon on our Pacific coast streams, because even though they both involve water, there is no logic in such a proposal. But the use of hydro-power to

subsidize irrigation seems eminently logical. They, too, both involve water.

### **The Dammed River Balks**

Today Lake Powell is gradually filling up to the point where water can be passed through its turbines and electricity generated to pay for the dam and for upstream irrigation. At this moment though, the river is not being cooperative. Last year was about as dry as any year on record, and no substantial amount of water could be spared for Lake Powell. Also, withdrawals from Lake Mead (which has only been full twice since it was built) were in excess of inflow and Lake Mead is as a result close to its lowest possible power-generating level. Had 1964 been a whopping big water year, everything would be rosy now. But it isn't: in fact it's a dry year again, though nowhere so dry as last year.

However, the people in the Bureau of Reclamation with the sharpest pencils have decided that enough water is available partially to fill Lake Powell, to get it up to a level where electricity can be generated, to what is called minimum

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power pool, provided that the folks downstream from Hoover Dam take a ten per cent cut in the water to which they are entitled.

So, in April, the bottom gates were closed, though not permanently sealed, and the Lake began to rise. And at the same time work on installation of the first two 112,500 kw generators was rushed with the intention of having the first available by September 10, and the second by October 10.

In the middle of June the lake was rising a foot and a half a day; a week later the increase was only half as great. The Lake's surface on June 22 was 3466 feet above sea level. Water was coming in at the rate of 26,000 acre-feet per day and the Lake's area at that height was 40,000 acres. Minimum power pool is 3490 feet and it was going to take another million and a half acre-feet to make it. At a flow rate of 26,000 A-ft./



*Say not the back-brace naught availeth  
Say not the Duffek's a long-shot bet  
However she goofeth, however she flaiileth  
We'll make a paddler of Flopsy yet!*

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day, it would take until the end of July to make minimum power pool, but usually when stream flow begins to drop it continues downward through July and August. So, from such information it would seem that the Lake might well not make minimum power pool by September 10 and, if it did, that there wouldn't be much extra for power generation.

But another way of approaching the matter is to look at stream-flow forecasts. These predicted 5.2 million acre-feet arriving in the lake between May and September and, as far as we could figure, only half of this had showed up by the end of June. So, perhaps, there would be a million and a half to make the minimum power pool plus another million acre-feet to run through the generators.

### 1.6 Million Income

If the latter figure is correct, then that million acre-feet falling some 370 feet would generate close to 370 million kwh (1 A-ft = 1 kwh) and this at 4.5mills/kwh comes to about one and two thirds million dollars of income.

But this is not all gravy. While Lake Powell is filling Lake Mead is **falling** and it is now below its rated hydro-power level. Because of this its programmed generation is less than scheduled and Glen Canyon Dam is, in effect, being billed for this deficiency which will come to about \$250,000. Senator Al-lott of Colorado, who would like Glen Canyon Dam to look like a good thing, has introduced legislation to waive these charges. This is what we call free enter-prise.

Also, because of the lower level at Lake Mead, the National Park Service, according to a news broadcast from Las Vegas several weeks ago, will have to spend five million dollars to relocate facilities for recreational access to the lake. This looks like governmental inefficiency, but it's just as common in big industries, and you must always remember that the man in the next office may have his own games to play and is not necessarily going to cooperate with you in reaching some objective of your joint boss.

Finally, the 10 per cent cut in water to Arizona and Southern California has



its own ramifying consequences. This does not mean water rationing in urban Southern California, because the region is providentially blessed with a wonderful underground storage reservoir containing close to twenty years' supply. But it does mean a depletion of this reservoir, a depletion which must be made up later on—if water should ever become more abundant. It is another chicken which may come home to roost at an unwelcome moment. Agricultural production depending on this water has a gross value approaching a billion dollars per year. A cut of 10 per cent in the water supply is not likely to lead to a proportionate cut in crop yield. After all, water can be tended more carefully, and crop response at optimum water use should be less than proportional to water use. But to hazard a crop loss one-tenth of the proportionate amount seems conservative. And yet such a loss comes to a diminution of gross return of \$10,000,000. This loss, of course, is Arizona's and California's, not that of the Upper Basin of the Colorado River.

So we have now a gamble by the Bureau of Reclamation in the hopes of grossing \$1.7 million from power sales at Glen Canyon, at the cost of a quarter million dollar penalty to the Lower Basin, plus \$5 million spent by the National Park Service, plus \$10 million lost to agriculture.

Sometimes it almost seems it should be called the Bureau of Recklessness.

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## From Your Editor

Want to get sick along with me? Arrange your route to the bathroom, and follow along:

"When the Congress of the United States determined that it was to the National interest to dam the Colorado gorge so ~~as~~ to harness the waters of the mighty river, it did not rashly overlook the scenic, scientific, historic and other features of the area, but, instead, recognized their importance to all the people of the nation . . . .

"Although the early growth of Lake Powell has been disappointing in that it has not been as rapid as was hoped for or could have been in the first six months of a normal year the northern precipitation, each day, nevertheless, has seen the body of water extending in length and flowing into each successive side canyon that it has met. Encouragingly rapid at first — April, May, June — each 24-hour period brought vertical rises of two to three feet, three or four miles, up the old river bed. As the head of Lake Powell pushed farther and farther to meet the incoming river, its arms swelled into Wahweap, Navajo, Warm Creek and then, Labyrinth and Padre Canyons. Riverside landmarks submerged in the front and sides of the lake. The boat landing at Kane Creek, familiar to so many riverrunners [sic], was soon covered by the clear blue waters of Powell for it was not many days following its birth that the lake began dropping its load of silt and roily waters became crystal clear. Here, now, was a recreational lake awaiting its outdoorsmen.

"The camping shelf at Aztec Creek disappeared beneath the surface of Powell and boaters found they could cruise on up into Aztec Creek farther and farther with each passing week. The long, hot summer hike into Rainbow Bridge was becomingly unexpectedly [sic] shorter and shorter. On past the San Juan confluence, on past Hole-in-the-Rock; over rapids, over beaches and bars Powell moved slowly although steadily. Storms of August and September poured their welcomed loads down the side canyons and main river; Powell became somewhat rejuvenated and

increased the tempo of inundation itself. The early days of fall found its headwaters inching through the country of Bullfrog and beyond, 130 miles from Glen Canyon Dam and but 15 miles to Hite. Already a blue giant of broad embayments and narrow canyon arms, Lake Powell continues to grow...

"...Constantly rising water demanded nearly daily relocations of launching ramps and parking areas but boaters were never denied practical and safe launchings... Powell flowed across the Padre Canyon Road...

"The sparkling new lake and happy sun-tanned people had met!

"... In spite of maxims, Lake Powell has proven once again that impatience, intolerance, and even despair itself are only temporary moods. Welcome Lake Powell, Wahweap has been awaiting you! Welcome boaters, fishermen, swimmers, skiers, campers and you others who enjoy an outing amidst spectacular scenery!...

#### "Wahweap Basin Marina

"... The ramps at the bottom of Wahweap Canyon will provide access during the formative days, are of a temporary nature, although designed to be safe and convenient... these ramps will soon be lost forever beneath the lake surface... When the surface of Lake Powell passes the 420-foot depth line at the dam (it is at the 277-foot mark on February 1, 1964), its waves will be lapping at the lower edge of the permanent public launching ramp at Wahweap... The time the lake will reach this elevation is now unpredictable...

"This ramp has been designed and constructed to meet the modern demands of a heavily used marina. Its 100 feet of asphalt surfaced pavement will extend well into the water at all normal lake elevations. A 500-foot extension at the lower end of the ramp has been constructed as an economical feature to continue launchings when the reservoir is at its very lowest permissible [sic] levels. The gravel surface of this lower prolongation is expected to be submerged except during rare periods in the life of the lake. The 200-foot width of the ramp will provide

spacious room for the maneuvering of cars and boat trailers, and additionally will be used as a parking area for the convenience of the boating public. Its 8.5% grade should permit easy launching of a boat from a trailer without the common annoyance of fully submerging the trailer (and often part of the towing car) as when on a flatter slope...

"The days of float trips down the Colorado from Hite, have to all practical extent, become history..."

*And — the supreme irony to some of us, perhaps — the following:*

"A visitor to Glen Canyon National Recreation Area does not have to have a privately owned craft available for his use. Experienced boat operators, most of them old river runners of the Colorado, have reliable equipment available at reasonable rates..."

**—Excerpts from the National Park Service brochure "Meet Lake Powell."**

Comment by us is superfluous. But it's worth noting that, in the dry season we are experiencing, the manipulation of the gates of Glen Canyon Dam has become one of the warmer political issues in the Nation. Secretary of the Interior Udall is under heavy fire from those downstream who want more water to supply Los Angeles with power and water; the Los Angeles Metropolitan Water District has refused to go along with a 10% decrease in consumption demands; upstream interests are clamoring for a share in the general scarcity. On May 12 — after promising 14,000 feet to a party of Sierra Club river runners — the Secretary abruptly closed the gates to all but 1000 c.f.s., and as a result the famous Colorado River this summer carried less water than many an irrigation canal.

No doubt these dry years will be conveniently forgotten when the hue and cry are raised again for the dams projected in Marble and Bridge Canyons. It evidently takes a great deal of Federal tax money to keep those Arizonans happy in their states-rights, anti-welfare Paradise.



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Sault Ste. Marie, Ont.
- Sierra Club  
W. Noble, Rep.  
1050 Mills Tower  
San Francisco, Calif.
- Sierra Club  
Great Lakes Chapter  
Henry Karels, Rep.  
609 Parkside Circle  
Streamwood, Ill.
- Sierra** Club  
River Touring Committee  
Ray De Saussure, Rep.  
3842 Brookdale Blvd.  
Castro Valley, Calif.
- Sierra Club  
San Francisco Chap.  
River Touring Section  
Peter Whitney, Rep.  
1544 LaLoma Ave.  
Berkeley 8, Calif.
- Viking Ski Club  
Ro'ert Weillrr, Rep.  
P. O. Box 57, Morin Heights  
Quebec, Canada
- Washington **Foldboat** Club  
Wolf Bauer, Rep.  
5622 Seaview Avenue  
Seattle 7, Washington
- Wildwater Boating Club  
of State College  
David A. Guss, Rep.  
368 Bradley Ave.,  
State College, Pa.
- Winnipeg Canoe Club  
Harry G. Nicholson, Rep.  
Box 57, St. Vital 8  
Winnipeg, Manitoba, Canada
- Wisconsin Hoofers  
Richard Snellgrove, Rep.  
2405 Fish Hatchery Road  
Madison, Wis.
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# The American Whitewater Affiliation

We are many individuals who wish to promote river touring, and to keep informed about wilderness waterways and the ways of white water.

We are an affiliation of outdoor groups, outing associations, canoe clubs, ski clubs, hiking groups, all interested in river touring for our members. Our groups range from the Appalachian Mountain Club in Boston, to the Washington Fold-boat Club in Seattle. These groups have pioneered in developing river know-how. They are the local sources from which flow the currents tributary to our **rowing** sport. Through group representatives, the knowledge of all is made available to all.

We are a non-profit organization. Our organizational simplicity permits all dues to go directly to the building of our magazine and services.

## OUR PURPOSE

To encourage exploration and enjoyment of wilderness waterways; to foster research, development, and teaching of improved techniques and equipment designs for safely negotiating white water; to protect the wilderness character of our waterways for the growing number who are discovering the rewards awaiting the river tourist.

## OUR PUBLICATION

All members receive our quarterly magazine "American WHITE WATER," which is a **voice** for all American boatmen. You are urged to contribute articles, pictures, cartoons, information and ideas (to increase the fun of our sport and ideas for improving our services to you). Subscriptions begin with Summer (June) issue.

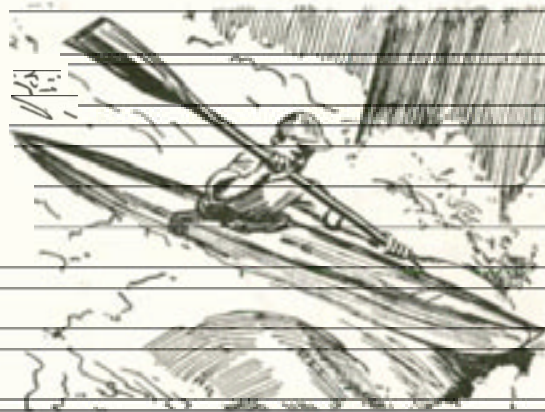
## MEMBERSHIP

Membership is on an annual basis with the new year **starting in March**.

Tell your friends who might enjoy canoeing or canyoneering about the AWA. Their \$2.50 will help foster enjoyment of wilderness water and bring each into the boating fraternity through the pages of "American WHITE WATER" magazine.

## COUNT ME

as a member of the American Whitewater Affiliation. As a member I will receive American WHITE WATER magazine issued in June, September, December and March. Here is my \$2.50.



Name: \_\_\_\_\_

Address: \_\_\_\_\_

Occupation: \_\_\_\_\_

Type of Boat: \_\_\_\_\_

Club: \_\_\_\_\_

Committee I'd like  to volunteer for: \_\_\_\_\_

Suggested articles: \_\_\_\_\_

Mail to: Amer. Whitewater Affil., 1925 Hopkins Street, Berkeley, Calif., 94707