

*American*

# WHITE WATER

JOURNAL OF AMERICAN WHITE WATER AFFILIATION



**AUGUST 1959**



Tyro ~~Marge~~ ~~Tucker~~ sits back to enjoy her first ride through some Delaware haystacks.

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# *American* **WHITE WATER**

Sponsored by *The American White-Water Affiliation*

August, 1959

Volume V

Number 2

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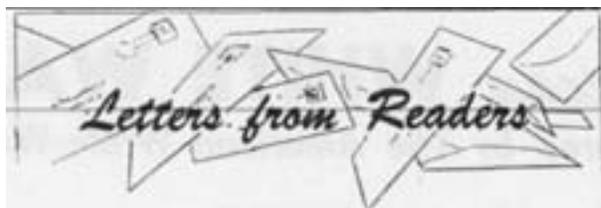
American WHITE WATER is mailed to all members of the American White-Water Affiliation in May, August, November and February. Membership is open to all who are interested in river sport, for the sum of \$2.50 per year.

The magazine welcomes contributions of articles, photographs and drawings, but assumes no responsibility for them. Address all editorial material to the Managing Editor or to the nearest Regional Editor. Correspondence regarding the Affiliation or boating information should be sent to the Executive Secretary, Maurice Posada, 417 Riverside Drive, New York 25, N. Y.

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COVER — Photo by Wolf Bauer



Sandy Pond Road  
Lincoln, Mass.  
June 29, 1959

Moore, Roland **Palmedo**, Richard Reed  
(representing the Maine Development  
Commission).

Dear Van.

Inasmuch as I have already participated in the "Second Annual National White Water Championships", I am puzzled by Steve Frazee's letter, which appeared in the last issue, and which advertised "The First National White Water Championships will be held on the Arkansas River, June 14, . . . ." Steve's "First" is in 1959, while my "Second" was in 1941. This has all been done without benefit of a time machine.

In 1940 and 1941 white water races were held on the Rapid River in Maine. These were called the "First" and "Second Annual National White Water Championships." It is true that the participants came mainly from the East, but they represented the most active white water enthusiasts in the country at that time, and some of them (such as Zee Grant) had already extended their white water activities onto Western rivers. The races were called "Annual" because it was intended that they be held every year, but the war interferred.

The races were well organized and conducted. A great deal of attention was given to safety and rescue. With the exception of some special events for Maine guides in 1940, the races were amateur. The committee in charge of the 1941 race consisted of A. G. Grant (Chairman), Alexander H. Bright, W. B. Van Claussen, Eugene DuBois, W. S. Gardiner (then of Salt Lake City), Lawrence I. Grinnell, Kenneth A. Henderson, Gerald Hopkins, Marjorie Hurd, Amy Lang, Royal Little, Lawrence C.

This list includes many of the leaders of the white-water movement in the pre-war period and many whose leadership has carried on into the post-war period. Certainly if they felt they could call their races the "First" and "Second National White Water Championships" the title should stick. Obviously these races have been forgotten, and it is no fault of Steve Frazee's nor of the Fibark Club that the earlier races were not given due credit.

At a later date I'll produce an article on the Rapid River races. They were fabulous affairs. Ken Henderson has some good photos in his archives, showing the river dropping like a staircase with more people in the water than on it.

Sincerely,  
Eliot DuBois

---

1616 Olive Street  
Santa Barbara, Calif.  
3 June '59

American White Water  
Gentlemen:

In regard to splash covers, and to Mr. Soudois' letter to you, my white-water experience is confined to 45 years on salt water and 5 times on fresh water (2 ways through Dinosaur, and the San Juan in Utah).

I always carried a cover on salt water but used it only as necessary — usually when taking waves on the bow, in which case a half cupful of water came aboard with every wave.

I have always used a cover on fresh water, whether necessary or not. My

covers have been the regular ones made for the kayaks, but not as watertight as the Esquimo type. Nevertheless in going through Moonshine Rapids at Split Mountain, enough water entered through small gaps to almost turn me over at the foot of S.O.B. Rapids.

From the above it can be assumed that a spray cover is a reasonable precaution, under which assumption I'm not inclined to give credit to those who get by without one. On the other hand, because a kayak is a sort of submarine boat, I give great credit to those who run Indian canoes through white-water.

In regard to paddle "funnels:" It is my experience that if paddlers don't carelessly dip their hands into the water regularly, "funnels" are like a fifth leg on a dog. I should add that my experience includes two 25-mile races across salt water, two 22-mile races along the coast, and much playing around in sea waves. I do use paddles which are longer than average and therefore less **efficient** for forward motion, but much better for maneuverability including recovering from **roll-overs**. And, after their breaks at the ferrule, they can be repaired without awkward shortening.

Respectfully,  
C. Shepard Lee

32 Dartmouth Circle  
Swathmore, Pa.  
June 5, 1959

American WHITE WATER

Dear Van:

We were much impressed with a canoe salvage trick that the AMC used recently on the West river. A canoe was firmly pinned on a rock so that the half dozen men available would have required a block and tackle to get it off. But one person had two carabiners in his pocket; the rope slides through them so easily that they could be used as blocks. The rope was strung so as to give a mechanical advantage of three. The canoe came off.

Yours,  
Bob McNair

### From your Editor

I wonder how many of you realize what a great bunch you have getting out your magazine? Caught in a squeeze between serving as Canoe Chairman of my own club, negotiating for and starting a new job, and moving to a new apartment, it was **mid-June** before I was able to notify staff and advertisers that plans to go on the Clearwater trip forced me to advance the deadline to July 1st. The group responded wonderfully. Maurice Posada had his copy in the mail within days. Dan Bradley, who was moving to a new city and new job, interrupted his own affairs to write a good Conservation Column. Regional Editors and Advertising Managers responded, and advertisers cooperated by getting their ads in early. My thanks to all.

Speaking of advertisers, it is due to them that we are able to publish this magazine; our small membership fee does not begin to pay printing and distribution costs. Let's try to make it worth-while for them to advertise with us. When you buy supplies and equipment, it's just as easy to buy from advertisers — and let them know you saw it in *American WHITE WATER*.

The center picture spread is reprinted from the *Prairie Club Bulletin*. Just to get acquainted — the character with his head in the kayak (top center) is your bashful editor; directly below is Business Manager Pat Vanderveen; the hairy-chested individual facing us in the swimming scene is Membership Chairman "Deacon" Kiehm; hiding in the top left picture are Lil Lasch and Allan Boz, authors of two of the articles in this issue. Have any other Affiliates done picture stories like this? Send them; we will print them in future issues.

Martin Vanderveen  
Editor

meet the  
**CHAMPION**  
see the Salom 59 on  
the inside back cover.

American WHITE WATER

# The American White-Water 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 **Foldboat** 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 growing 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).

## MEMBERSHIP

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

Tell your friends who might enjoy canoeing or cayoneering 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.

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## 1959 Dues Payable Now

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Boating club membership: \_\_\_\_\_

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

Mail to: American White Water Affiliation, 2019 Addison St., Chicago 18, Ill.

# MEXICAN HAY(stack) RIDE

by LILLIAN LASCH

Shortly after I boarded the plane to Los Angeles things began to happen. A motor quit, and we transferred to another plane at Denver. At Los Angeles I joined Georgie White, Marshall Bond, Orville Miller, Frank Rich, and Paul Kelly for a trip on the Aros River in Mexico. Smog delayed our departure until mid-afternoon, we had to wait for a magneto adjustment at Riverside, and we barely got out ahead of weather that was moving in.

We spent Sunday night, in the absence of hotels, in our sleeping bags on the lawn at El Centro airport.

Up with the sun, we took off at 7:30 in our twin-motored Bananza, headed for Hermosillo, where we were to clear customs and gas up.

The day began beautifully, but it was reported raining in Hermosillo, and gradually we ran into clouds, until we found ourselves sandwiched between them, above and below. Brad Pearson, our pilot, picked a hole and spiraled down, down, and down, until we broke out, a few hundred feet above the ground. We were flying up a valley with the mountains closing in. Rain came, and it was as if a curtain had been drawn. Brad turned and flew back down the valley, weaving between rock- ledges so close that you could see the cracks on the rocks.

He tried another valley, with the same result, then another and another, until we found ourselves at the ocean with gas getting low. When we looked for an emergency landing field, all we could see was water—floods had covered the runways. There was nothing but a two-lane blacktop road, looking like a black shoestring, but Brad put the Bonanza down, with about a foot of leeway on each side.

It was desolate country, with cacti growing on each side of the road. There was some gas left, so we taxied up the road; nothing living stirred and we

met no cars. Suddenly we had to stop because the road had been washed out.

Marshall, Orville and Frank started to walk, hoping to find help. Paul, Brad, Georgie and I waited in the shade of the plane. Finally a truck turned up, and you can imagine the expressions on its occupants to find the way blocked by an airplane!

To let the truck past, we had to push the plane off the road, and even then, it had to drive onto soft ground and under the wing of the Bonanza. From then on, we became a three-ring circus. We guided several cars past. Finally two policemen came and stayed until help could reach us.

A man who spoke English turned up, and took Paul to try to get aviation gas. While we waited, a truck arrived with men to work on that washout; they were a group that made us thankful for our police guards. The amount of work they did was negligible; one could understand about "manana."

Finally Paul turned up with fifty gallons of gas, which was transferred to the plane's tanks, and we took off. Fifteen minutes later we were at Hermosillo airport, where the search for the customs inspector began. He had gone home for the day, and could not be located.

Brad had come without a visitors' permit, expecting to return to Nogales the same day. After much head-shaking, the authorities let us go into town for the luxury of bath and dinner, which tasted good even though the cockroaches did dance on the wall while we ate.

Next morning, at the airport, we decided that the flood waters had made the Aros a bad bet for the present, so we decided to try the Rio Grande de Santiago, our alternative river. This meant a flight some 938 miles southward to Guadalajara. We considered flying commercially, to let Brad fly back to pick up the boats and gear, but

American WHITE WATER

found no reservations available for three days. We learned that no rail or bus transportation was moving—the bridges were all washed out. So we decided to keep the Bonanza and fly down, even though it would cost considerably more. Since the plane was gassed up, we decided to leave immediately.



**Author is third from left**

From the air we could really see what a flood this was. A hurricane had come in from the ocean to meet the floodwaters coming down; the worst deluge since 1907. The normal riverbanks could not be distinguished; the entire area from seashore to foothills was under water, including most of the roads and railroads. Muddy arcs could be seen out in the ocean a long way around the mouths of the rivers.

As we neared Mazatlan, Brad informed us that we'd been bucking a headwind and would have to land for gas. The authorities at Mazatlan would not let us take off again for Guadalajara as the weather there was closed in. They advised us to start next morning, as bad weather is common in the afternoons at that time of year.

We took a room for the night at a hotel. Georgie and I had a large room with comfortable beds. It overlooked a large patio luxuriant with palms and other tropical plants. But the blinds wouldn't close and there was no outside lock on the door. Inside, there was a latch, for which we were thankful because about 2 A.M. we were startled wide awake by some drunk trying to

get in. He pounded until friends convinced him it was the wrong door. There was a swimming pool, welcome in the hot muggy weather.

Daybreak found us impatient to get to the airport. We flew up the canyon to check it as much as possible in advance. The flood had receded, but it was still hard to find our way.

We were unable to see anything on the river that could not be handled. At the junction of another river the map showed a loop north and then back toward Guadalajara, and we decided to cut across it without looking. That was a mistake: it proved to be the only part of the river that was difficult.

Guadalajara is high in the mountains on a large plateau. As we arrived it was very hot, though less muggy than near the coast. Our waterproof bags aroused a lot of speculation about what we were going to do. Brad started back for the boats, but he ran into more bad weather, and that was the last we saw of him till Saturday.

Our group split up, the boys going to a motel, and Georgie and I to the best hotel in the city. We had a wonderful room, clean and airy, with comfortable beds. We ate all our meals at the hotel for fear of infection.

In Mexico women just do not wear pants, and neither of us had a dress, nor could we afford one. After dinner we went out to see the sights, and caused a sensation. I can't remember when I've been stared at so hard and so persistently, and even provoked a few whistles—not bad at our age!

Wednesday it was decided that Marshall would send back for money for all of us. While we waited for it, Georgie and I got information from the Hydroelectric Power Department, which had charge of building a dam on the river, secured a permit from the Government, and hired a truck to haul our gear.

Then we waited, expecting to hear from Brad momentarily and afraid to get far from the phone. However, Frank

and Paul came to town and insisted that we go with them through the native market. It was an eye-opener, showing among other things why Americans mustn't eat except at accredited places.

Baskets, shoes, food, clothing, fruit, candy, dry goods, everything imaginable was sprawled about. Probably the most surprising commodity was the barbecued ~~meat~~, of which everything including head and horns was piled up for consumption. With the non-sanitary conditions, and smells and flies, I was surprised at how clean people's clothes were and how well the streets were swept.

The storm had tied Western Union and everything else up in knots. By Saturday, no money had yet come, but Brad arrived. We got our truck driver, and arrived at the airport. Imagine our chagrin to find out that Brad had brought only two boats—the third one couldn't be squeezed into the plane. Georgie insisted that the trip could be done with two boats, with a reduced safety factor. She was right, though there were a few minutes when we were not too sure.

Anxious to get on the river, we started on the 35-mile trip to Santa Rosa as soon as the truck was loaded. We had permission to launch at the site of a dam. The sun was beginning to drop behind the hills by the time the truck was unloaded and the gear carried to the shore.

The Mexicans working on the dam and their families were very curious about everything we had and did, so there was a gallery around us constantly, under our feet, on and around the boats until long past dark. While Paul, Frank and Georgie started to inflate the boats the rest of us kept an eye on the gear; we found the people exceedingly honest, but did not know whether temptation might prove too great if they saw something they needed badly.

Dinner was sketchy that night; with so many people watching us we hesi-

tated to pull too much from our bags. It was a beautiful evening, and by the time it was dark we had set up our bedrolls—Georgie and I between the tie-lines of the boats with most of the bags packed around us.



Our Public

We put one tarp down for a ground cloth, with the thought of pulling the other one over us in case of rain. Did I say "in case"? It rains every night!

It was not long till the heavens opened up. The top tarp proved inadequate, and soon our bedding was wet and it was raining too hard to get up and straighten things out.

Suddenly the water developed an angry sound that seemed to be right in our ears: we sat up and found that the river had risen several feet; the boats were floating freely, and the bags were within inches of tumbling in. We called for the fellows and scrambled to pull everything back on the beach—including our beds. By that time the rain had stopped, and the stars were shining beautifully. We had finally—though not for long—lost our audience. So uncomfortable were we that when Georgie and Frank made a fire we were all ready to get started. We finished breakfast just before our first onlooker appeared with the fading of the last star.

Mornings were always damp along the river, so our bedding and tarps were always wet when packed. Before long they began to smell musty. Some of the things never did get dried out.

## American WHITE WATER



One job Georgie always does herself is to tie the boats together with nylon rope. She soaks it thoroughly and then pulls it as tight as possible.

She got a lot of assistance and curiosity from the Santa Rosans, who had never seen rubber boats before and couldn't get enough of sitting in and on them, and walking along the gunwales. Every time we carried a bag aboard we had to push our way through little boys and men. The women didn't get courage enough to come close until just before we left, and then they came in large groups, as friendly as could be, although we could not understand a word they said. By the time the last bag was tied in, we counted 151 on-lookers.

They laughed and teased each other about going downriver with us, but only one of the younger men admitted that he would like to go, and that earned him an unmerciful teasing. A group tried to push him onto our boat as we moved off into the eddy. You never saw anybody flounder off so fast!

They all waved **goodby** when we started down the river, and by the time we were through the first rapid, they were out of sight.

Because of the crowd at the campsite, sanitary facilities were impossible. We looked for the first sandbar that seemed to promise solitude, but before we were moored, we saw a whole family watching us from an ancient grandfather with an immense machete to a

little naked boy of two or three. We saw quite a few such naked boys; apparently they don't bother about clothes until they are quite large, **but** we never saw a little girl unclothed.

As usual, this family was friendly. Apparently the machete is as much a part of their jungle outfits as the eternal sandals.

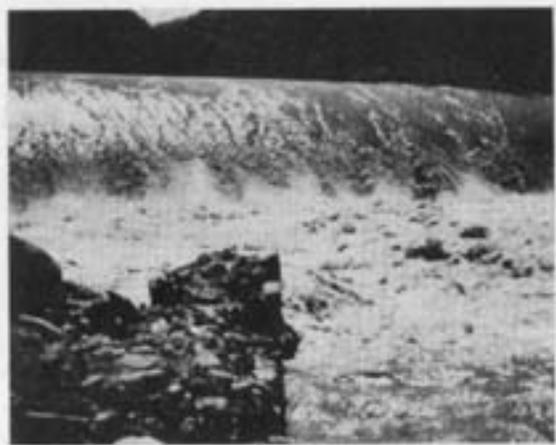
The first day, we ran into some spectacular rapids, had some nice rides, and did a lot of bailing. Our little motor pushed the boats along briskly with the help of a 12-mile-an-hour current. We stopped for lunch, dug out our bedding and dried it. The last hour of the day rapids were almost continuous, and we pulled ashore in an eddy at the head of a big one. When a check disclosed that there were more around the bend, we decided to stop for the night.

All our water had to be boiled for twenty minutes and then put into canteens for the next day—Paul said it always had a slightly broiled taste. Luckily we found several small seepages at the head of the rapids and so had clear if not good water. We didn't carry stoves, and it was a herculean task to keep a fire lit to boil all the water. Then our nightly rain came, and we all crawled into sleeping bags. These tropical rains always came down as if some one upended a bucket, lasted half an hour to an hour, and were followed by clear stars.

At this camp we saw what seemed to be rocks floating in the water. They turned out to be pumice.

We were up before first light, but this was a pleasant campsite and we didn't hurry with the chores, so we left at the late hour of 8:30 A.M. For the first hour the rapids kept getting bigger, and bigger, and finally the boats were awash and we just floundered through the waves instead of over them. Finally we managed to work our way into a small eddy for bailing.

A stretch of smooth fast water worried us just a little. We began to wonder if it meant a dam nobody had told



**We almost ran it**

us about. The water ahead disappeared abruptly and we could not see any splash beyond, though we heard a muted roar. Standing at the motor, Georgie said she could see the water beyond; we were in the middle of the river, going ahead, when some men at a silver mine on the canyon side shouted "Presa!"

The boys recognized the word for dam. Orville and Paul grabbed the oars and really bent them in a sprint for the bank while I balanced on the front of the boat to jump ashore and moor. We made it in to a banana patch several hundred feet above the dam.

When we went down to look, we realized the hydroelectric people had "lost" a 30-foot dam, built in 1907, which now had ten feet of flood water running over the top. Georgie insisted the boats could have made it, but we were unwilling to try to prove the point for her.

There was nothing to do but portage. There was a good mule path all along the river, and about a mile downstream we found a rock ledge that we could use. It was very hot and humid. We were able to hire some of the mine workers to help carry our duffle, including the boats, which weigh 400 pounds apiece. We tried to figure some way of carrying them inflated, but the path was too narrow. We let out enough air to roll them up, and then with Frank, Paul, Orville and five of the miners getting under the roll, they

could walk along the trail looking like a giant sixteen-legged caterpillar.

By the time the portage was finished, it was nearly 5 P.M., time to call it a day. The boys carried their bags to the banana patch for the night, and Georgie and I settled near our gear on a slanting cement slab. We had to take care not to roll over because on one side was a deep hole and on the other a four-foot drop. The insects were voracious that night; we came off with dozens of bites that did not heal as long as we were on the river. For a change, the rain was not very hard. And for a luxury, I found a place to take a bath after dark.

This was a trip of "Water everywhere but not a drop to drink." I became quite proficient at drycleaning my teeth.

Inflating boats and retying bags took most of Tuesday morning. Orville and Marshall hiked down the mule trail and found that it ended in a cable that hauled mules and men across the river. The mules didn't seem to like it much.

We saw our first alligators that day. At Guadalajara they had told us about them, but we'd discounted the talk and didn't expect to see any until we reached sluggish water. But this afternoon we got a good look at two of them asleep on the bank—very small ones, maybe six or seven feet, and very alert. The natives told us they had caught caymen up to eighteen feet, but that they didn't think many were left that large, because they hunted them for food and had practically killed them off.

Several sharp, short rapids proved less exciting than those of the day before. About mid-afternoon we reached the junction with Rio de Dacanos and a village of thatched huts called Pers Delia Yerca, of Jalisco. It was the largest we found, having twenty huts.

The people came down to help us beach the boats, and in sign language invited us to their houses. I stayed by the boats while the others went up; since it was very hot I settled down into the river to keep cool. When the

others returned they said the villagers had treated them to some of the rawest tequilla they had ever tasted. They brought me down a bottle of coke—warm but good. It must have been hauled a long distance on muleback.

When we pushed off, one of the village men asked to ride to the middle of the river, then dived off and swam back.

It was getting late, so we stopped at the first good camp site, a beautiful sandbar with lots of driftwood for fires. That evening it did not rain, though a thunderstorm passed nearby. We managed to fill all our canteens for the first time. Frank wandered up a canyon and found some tiny orchids.

We were not to escape without rain, for just after daylight the heavens opened up, luckily after our bedding was packed. But we had to fill the gas tank while holding a tarp over it during a letup in the downpour. Occasional showers continued and after two hours we stopped on another sandbar to light a fire and dry out.

Just as we started again, the propeller hit a rock and snapped a blade. We changed it, but then Georgie discovered that worse had happened—a stripped gear that we could not repair. So she decided to resort to the oars exclusively from now on. We removed motor and mount and lashed them down. We ate lunch, and again had an audience of half a dozen who appeared from nowhere and watched every move.

Shortly after lunch we found two young Indian men, absolutely naked and not at all self-conscious about it, hauling pigs across the river in a dugout canoe.

We saw such dugouts all along the river, all looking weathered and very old. They seemed to be highly valued possessions, since they were always fastened with heavy chains and we did not see any trees big enough or straight enough to make them now. Paul asked one man how old they were; the only reply was—with a shake of the head—"very old."

In the afternoon the clouds got thicker and blacker, and when we came to a sandbar we scattered to find water, wood, and rocks for a fireplace. Paul and Frank joined their ponchos in a tent of sorts, Orville and Marshall tied up a small tarp for shelter, Georgie made her bed on the boats and I made mine on the sand, covered over and under by my tarp.

The wood was wet and hard to light. A hurried trip to the bags before the storm broke brought a can of macaroni and cheese and a can of pineapple. Most of the rainstorms just dripped soggly, but this was heralded by a terrific wind, and first thing I knew I was trying to hold down my bed and with the other hand to grab my runaway cup and bowl. And then the rain really came!

In self-defense I grabbed the carefully made bed and dragged it behind the shelter of a big rock, and then begged shelter with Orville and Marshall. Luckily, Georgie and I had been able to finish our dinner which was in cans and did not need boiling. But the boys had only gotten their kettles well started when it rained so hard that the fire-pit filled with water. Finally they dined on one can of cold spam and one of cold corn, divided four ways.

By the time it was dark the rain had stopped and we crawled into our bags. The river had risen; I took a reef in the boat lines before retiring, and next morning had to do it again.

We had to use some of the **now-surplus** gas to start our fire in the morning, and to pack everything away soggy. During this morning we passed between steep cliffs of a startling red that reminded us of the Colorado Canyon, far different from the jungle green of trees and vines. Although we were no longer hitting such large rapids, the river continued at **10** to 12 miles an hour.

We passed a beautiful waterfall cascading from a high cliff to the canyon floor. But a rapid roared past the mouth of that stream, preventing us

from getting in to the foot of the waterfall.

We stopped at a large flat bar which we thought would be a good place to dry out our soggy bedding. Each picked a spot for himself, with Georgie on a little sandbar near the river's edge. Suddenly she had to dive for her things, because the river had come up fast. Before we left, her little sandbar was under water.

While having a leisurely lunch in the sun, I suddenly saw Paul, Orville and Georgie make a simultaneous dive for their cameras. I looked, and dived for mine. Some people on the other side of the river had driven their cattle in, trying to swim them across to the other side for pasture. The current was so strong that all we could see were noses, horns, and the tops of heads. They were carried around the bend, and we think they got ashore on the same side they had been herded from.

No longer having the motor, we drifted with the current, using the oars only to steer. Because of the high water we missed most of the rocks and bad holes. We saw little groups of thatched huts with natives working or sitting around. There were a lot of range cattle, often with vaqueros on their small ponies or mules, trying to herd them. It must have been a terrible job in all that heavy undergrowth. Most of them carried guns or machetes shoved into their belts, and looked as if they could use both. Luckily for us they were friendly.

We traveled fairly late Thursday night, hoping to get pictures of alligators, but evidently they had been completely eliminated. Finally, in order to beat our regular evening storm, we located a nice flat spot on a low bank with a high cliff behind on which some jungle plants were growing. Our luck was better, for the rain didn't come until beds were made and dinner partially warm, so we crawled under Orville and Marshall's six-foot tarp for dinner—a snug fit, to say the least.

It rained for about a half-hour so hard that everything was floating then

stopped and we had a beautiful evening.

All the trees had big thorns, making it uncomfortable to move around; early in the evening, when the river had risen about two feet, we had to pull the boats hurriedly out of a thorn tree they were drifting into.

Next morning Frank decided to go up a little stream for water, and started between two big rocks. He came backing out with a peculiar look. "There's a black snake in there at least eight feet long and as big around as my arm." As he was accustomed to jungle travel, he wasn't particularly frightened (as I would have been), so he went carefully back in, but by then the snake had gone.

After a map check the next morning we thought we should come close to the end of the trip that day. About mid-morning we rounded a bend and saw one of the largest villages yet, up on a high bank, and decided to stop. By the time we had maneuvered our boats around, a dozen people were down to greet us. They invited us to their village, and we gladly accepted.

The doors of most of the houses stood open and the pigs and chickens went in and out as readily as the people.

We noticed three women carrying water in buckets on their heads without spilling a drop. One of them invited Georgie and me to sit on a bench in a pleasant thatch-roofed, dirt-floored building whose door she kept shut—apparently hers was a home in which chickens and pigs were not welcome. We were amazed at the cleanliness of the bare room, which appeared to be the kitchen. The stove and oven had been covered with adobe and white-washed. The only spot of color was a magazine picture of Kim Novak. There was no evidence of beds; apparently they slept in another building.

There was a flat contraption of basket-work swinging from the roof, and she showed us with signs that she used that for storage. It was the first indication we had of what they used for closets. Hers was empty, however, and

we gathered that there is little to store. Their lunch that day consisted of one ear of corn per person, and they invited us to stay, but we declined. Apparently corn was a substantial proportion of their diet, for we saw no other vegetable growing.

Shortly after starting off again, we came to the junction of another river, and from there on it spread all over the landscape, still being in flood stage. We began to see large banana plantations, and evidence of irrigation. A single-track railroad appeared, following the river for some miles. We could hear a train whistling but never saw it.

Our daily shower broke a little earlier than usual, and the worst of it came while we passed under a railroad bridge which was high enough to survive the flood that had washed out so many others.

We landed a short distance above the highway bridge, and looked for a take-out spot where a truck could get to us. It had rained so much that most of the road near the river was soupy, and no truck could get down. We speculated on carrying the boats up the bridge abutment, but felt that its thirty feet of rock were too much of a chore. Finally a Mexican walking across the bridge advised us that at Santiago Ixcuintla we could land right at the foot of one of the streets.

Just before the bridge we noticed a number of iguanas in a tree, some of them three to four feet long. They apparently climbed out on the smallest branch that would support their weight, and there they slept. Later we learned that they did this for protection; if danger got too close they just dropped off into the water. We also noticed a number of Roseate Spoonbills feeding along the bank.

Just before dusk we arrived at Santiago Ixcuintla and landed at the foot of the street. The river was so high that the regular landing place was under water and it smelled like a pig pen. There were broken bottles, bottle caps, and other sharp things that would have cut the boats, so we had to jump

into the soup and ease them in. We had landed at the foot of the "Street of the Senoritas," and we certainly spoiled their business for the first part of the evening.

We found a police officer who spoke English, and Georgie showed him the letter from the Government office in Guadalajara. He stayed and watched our things for the entire time we were there. He also found us a truck for the trip back to Guadalajara.

We were certainly seven-day wonders—I think most of the town came down during the evening to watch us and to stare at Georgie and me in shorts, working with the boys unpacking gear, deflating and rolling up the boats in the dirty, slippery mud.

We were, of course, complete messes when we finished, and the villagers courteously showed Georgie and me where we could clean up and change clothes; but after one look we decided to remain dirty and we put overalls over our shorts. The truck, supposed to get there at 7:30 P.M., arrived promptly at about 9:30. All six of us climbed in with the gear for the trip to Guadalajara.



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Canoeing on the C & O Canal - National Park Service Photo

# CONSERVATION COMMENT

DAN BRADLEY, CHAIRMAN

*Conservationists are often accused of standing in the way of economic progress, seeking to save the birds and the pretty flowers at the expense of profitable developments. How frivolous is such a biased fabrication is amply demonstrated by a remarkable 48-page booklet recently published by the Citizens Committee on Natural Resources. Prepared by a committee of active conservationists living in the area under the direction of Anthony Wayne Smith, it sets forth an Outline Program for the Use and Enjoyment of the Potomac Valley.*

*Taking the recreational values of the Chesapeake and Ohio Canal only as a point of departure, the Report goes on to discuss the separate problems of highways and metropolitan planning; dams, hydroelectric power, water supply and pollution; economic development of the Valley—timber, agriculture, mining, education, industry; social organization, including the arts and population control; and finally the coordination of all these toward an integrated policy of watershed management. This is conser-*

*vation in the grand manner, and the kind of imaginative thinking that could well be applied to other watersheds.*

*The key paragraph from each chapter tell the story more eloquently than can this poor writer: let the Report speak for itself:*

*The thought is, first of all, to preserve and restore the Canal as closely as possible to its 19th century form.*

*We believe it is good and important for people to have places readily accessible from the city where they can [enjoy outdoor recreation] at leisure through the woods without being interrupted or endangered by automobile traffic.*

*The dam and road builders who talk about recreation . . . are primarily interested in dams and roads for the sake of construction, production and development—all good things in their place, unless they are carried to the point where they destroy the world people live in. . . . A genuine recreation program for the Potomac—as for any other region in America—and a true policy for genuine good living for all people, will focus not upon artificial facilities . . . but rather upon the pro-*

tection, restoration, and care of the natural setting . . . for human life.

Good living is much more than good recreation. The fullest use and enjoyment of the Potomac Valley for its people . . . will mean the development of a high cultural and material standard of living there. A good program for the Valley will mean good farms, good forests, good towns, good industries, and good cultural institutions.

It is a bad thing for cities to bring the big highways down to the center of town. The destruction is tremendous . . . the big traffic arteries are self-defeating. . . . Skyscrapers will be advocated to absorb the increasing crowds . . . and then more roads will be recommended to serve the crowds . . . the parks will be abolished entirely. . . . The problem of the modern big city is to thin itself out, . . . to clear its air, to grow some grass and trees; to quiet the stupendous din of its nights.

The water level route [favorable to steam locomotives] is not suitable to automotive transportation because of curves and the danger of flooding. If speed and safety are desired, the best routes are through the low passes and across the tablelands of the mountains.

No parks, no highway, no railroad, no forest, no farm, no factory, can stand in the way of the big dam program unless the people of the Valley and the country realize that the supposed benefits of such a program are an illusion and a fraud. None of the landmarks of a good civilization, past, present or future, can survive against the inundation unless the people of the region stand together to protect the good things they now possess.

Water supply, pollution, power, and dams are essentially local problems, but the Report includes some interesting comments on the potentials of underground reservoirs, desalination of ocean water and use of the Potomac estuary after elimination of pollution, to ease the drain on the Potomac River. The report also refers to the dangers of atomic power through underground radiation from the enormous volume of waste material, and urges research in alternative solar energy and wind-power devices.

The philosophy underlying the whole Report is summed up in its final pages:

The small rural community still offers opportunities for good living which have been lost as the big city swallows up even its identifiable neighborhoods. The idea of a small watershed as a unit within which the resources of an area may be effectively served and utilized is another fertile concept which proves more and more valuable in modern social reorganization.

It is not within our province to propose remedies or solutions for the tidal wave of increasing population which threatens to submerge the world; . . . Concerned as we are, however, with the preservation of a reasonable amount of the natural environment, . . . we cannot avoid . . . a warning comment if the population of the country . . . continues to increase at present rates for any extended period of time, all possibility of preservation of any significant amount of natural outdoor environment will be destroyed.

The Report concludes with seven recommendations toward an integrated policy, which may be summarized as follows:

A Potomac Valley Conservation Agency, charged with responsibility for the conservation and management of the natural resources of the region [with] emphasis on conservation, not on exploitation, [with] a grant of authority which would define a clearcut and comprehensive policy and a system of priorities in resource management . . . [and] powers to develop general and specific plans for the Valley and the use and enjoyment of its resources . . . [with] sizable funds available for research . . . [and] a simplified system of public hearings . . . and a fair process of appeal.

This Outline Program sets forth so eloquently many ideas of general significance in which we in the AWA also believe. There may well be differences of opinion over details, but this is the sort of imaginative thinking so sorely needed in the solution of many critical problems in metropolitan and watershed management all over the country. Conservation is the wise use of our natural resources--our land, our rivers, our wildlife, minerals--towards the ultimate conservation of human beings and a healthy environment for more of our people.

# Let's Go Upstream

by PETER WHITNEY

To recommend to foldboaters and canoeists the virtues of going upstream in swift rivers may seem paradoxical. Ours is a sport in which the essence is descent, with the whitecaps dancing over the bow. Yet my own experiences have made me an ardent advocate of learning and practicing all forms of upstream progress, precisely in order to learn how to descend with safety and grace.

I fell into the habit of making my river journeys round-trip at a time when I knew no other river men, worked odd hours, and couldn't pry my wife loose from the household routine to chauffeur me. Perforce, I had to make my own way back to the car after the descent. Sometimes it was by portaging; often I used a little folding wagon. On the Potomac, where I often paddled, I was lucky enough to have a parallel canal judiciously placed for return journeys. Once I hid a bicycle in the bushes, and hid the boat in turn at the end of the journey, while I pedaled back for the car.

But more often, I had to resort to the upstream paddle, wading and lining up the rapids when required.

Even in those beginning days, I could see virtue in it. I found that when I turned around and shot rapids I had surveyed on the way up, I had more confidence and made better runs. It taught me things about currents; I saw deep into the slicks and knew where the gateways were and where treacherously "pillowed" rocks lurked. And above all—important to the **neophyte**—I knew there were no unforeseen dangers in the river I had so painstakingly paddled and trodden up only a few minutes before. The ability and willingness to go upstream, taken for granted from the first, made it routine for me to repeat rapids as many times as I liked.

Then I went to Maine. By chance.

I camped out with my family across the river from one of the authentic white-water professionals, a man who contested against French-Canadian river men in international meets. He made his living by running dudes up and down the river to hunt and fish, and by running heavy loads of supplies in a cargo canoe down to the lumber crews "cleaning up the rear" at the end of the spring drive.

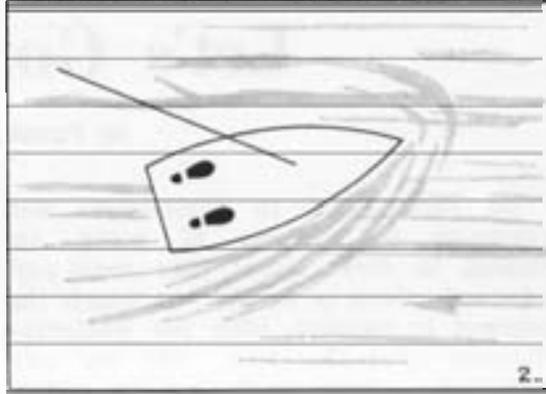
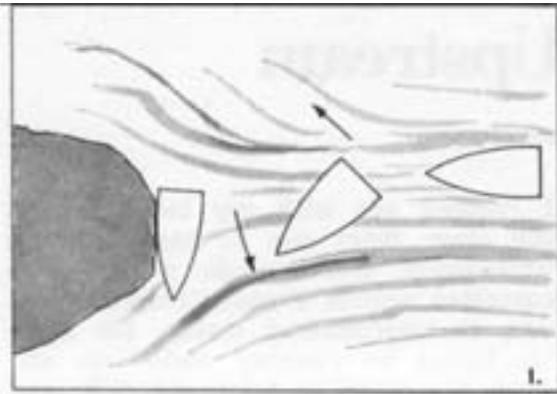
The waters of the East Branch here were shallow, swift, and rocky. I saw this man poling his canoe upstream with an easy grace that led me to acquire a pole and see what I could do. I stood up on the broad and stable bottom of my Kissner double foldboat, one foot placed logically—as I thought—behind the other, and pushed my pole down to the rocky bottom.

The result was worse than disconcerting. Instead of cleaving the swift current upstream, as did my neighbor's canoe, the bow immediately swung across current, broadsiding the boat, and I was over the side into the water without ceremony.

Evidently there was art that I hadn't appreciated. I tried again, with the same result, always supposing that there was some trick to the placing or handling of the pole that made the difference. But the result was always a dipping.

As it chanced, about the fifth time, the veteran river man hove into view, far down the dancing whitecaps, in a seventeen-foot Old Town, a burly fisherman seated in front. Easily, rhythmically, hardly slackening between **pole**-strokes, the canoe came up the hissing white water almost as fast as if it were descending.

The water passes under the road bridge in a hurry there, and a local citizen in a truck stopped on the bridge and hailed the canoe. The river man



looked up and halted in his stroke. He stuck the point of the pole into the riverbed and leaned on it like a gardener leaning on a rake. The canoe stood rock-steady amid the whitecaps. Not one minute, not five, but ten minutes, the river man held forth with his chum, discussing the weather, politics, the outlook for the forthcoming bear hunting season, and who had recently been caught jack-lighting deer. All this time, the boat might have been moored to the river bottom, yet not a muscle seemed to move. The river man's feet, planted on the canoe bottom, may have shifted slightly as the current thrummed against it, but one couldn't be sure.

The locals insisted that my river man neighbor could often be seen in the spring, when the river was in spate, poling with one hand while he bait-cast for trout with the other.

That was what taught me that, to a real canoeist, a river need not and ought not be a one-way street. The oldtimers more often than not had no road to go back by, and had to use the river as their highway up as well as down. And it seemed to me a wonderful skill, which a modern sports canoeist could be proud to acquire.

A man would have to be an acrobat to use the pole in a single-seater slalom foldboat, though no doubt it could be done. But the double-seater can be poled, though less successfully than the canoe with its keel. As a believer in cross-fertilization between the canoe and the kayak, I advocate the single-seater slalom competitor's acquiring the poling

technique in a canoe, if necessary, for the sake of the lessons it gives in reading the current.

So much of the justly acclaimed Dufek technique (which itself came over from the canoe) depends on the knowledge of current differentials that the single-seater slalom man probably can get more benefit from its study than anybody else.

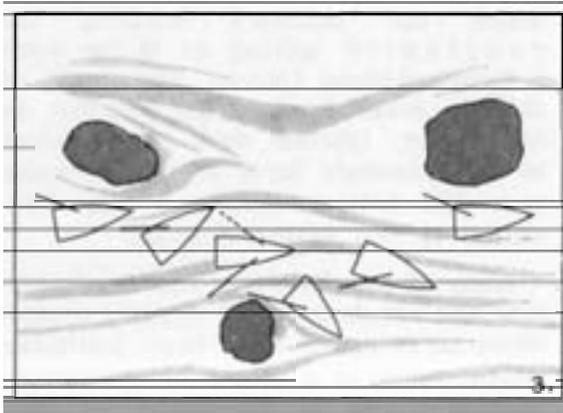
What are these lessons? The ways of currents and eddies are grasped only hurriedly in the descent of a rapid. A boater who tries to "schuss" straight down every drop will find himself puzzled by complex turns and openings, and may find himself goofing badly, even tragically, yet never be able to grasp what is wrong.

The commonest error of neophytes, in my observation, is to paddle out of fast-moving current into slower water nose-first, resulting in a broadsiding boat. (Figure 1) This frequently happens on curves.

This is a mistake that a day with a pole should eradicate from a boater's reflexes as surely as a touch of a hot stove will cure carelessness with fire. For the poled boat has to go up this kind of current with the bow slightly "off" the current, the stern edging slightly into it. (Figure 2)

Thus the effect of the current on the stern is constantly to straighten out the boat, instead of to broadside it.

The way this trick is achieved in poling is to keep the feet planted parallel in the stern, a comfortable distance apart. (Figure 2)



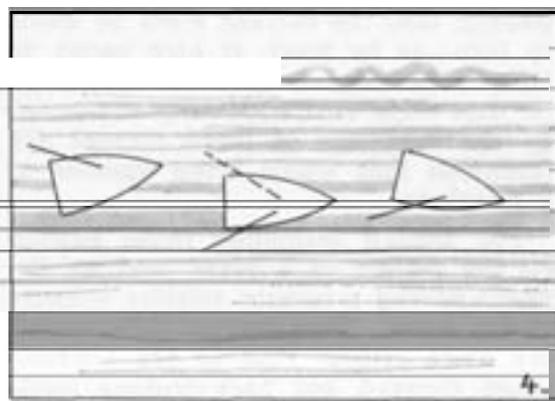
The pole is pushed on the side opposite to that on which the paddle would be used if one were trying to hold the boat on the same course, because a boat turns "away" from its paddle, but somewhat "toward" its pole (in the case of a single poler in the stern).

The poler can control the swing of the boat through his knees, and can augment the turning effect by lifting one gunwale slightly while lowering the other.

The time comes in upstream poling when the canoe has to be taken from one "tack" to another, when conditions in the stream or on the bank force a crossing of the main current. The upstream progress of the poled boat is achieved by "eddy-hopping," in which the amount of time actually spent fighting the full force of the current can be greatly reduced. (Figure 3)

In this maneuver, it will be seen, the bow is never surrendered to the fast water before the stern. At the moment of tacking, however, a danger point has to be passed. At the critical moment, the boat should be at mid-current, with sufficient headway so that the pole can be shifted to the other side as the bow goes over and the boat falls into its new upstream attitude. (Figure 4)

In going up ledges, the poler looks for V's just as he does when paddling downstream; but he chooses quieter ones and avoids high waves and the rolls at the foot of steep pitches. You will be surprised how often you will find negotiable water at the edge of



stiff rapids.

The lessons learned in this upstream maneuvering bear strongly on the problem of current differentials, so important in slalom and in the use of the Duffek strokes. One objective is always to let the river do as much of the work as possible, and hence to present the boat to the current in such a way that it cannot be broadsided unless you want it to turn. That means planning every move from swifter into slower water or vice versa.

Upstream paddling, as distinct from poling, is necessary in slalom, and it hardly is necessary to argue in favor of practicing it hard and often. The kayaker or canoeist who is preparing for competition should make it a routine to "play" the water at every rapid, particularly where obstacles present a chance to extemporize a slalom course. This can be done competitively by clubs, or in the spirit of emulation among friends.

I have seen Paul Bruhin, the Swiss kayak star, run a rapid on the Housatonic that the rest of us thought problematic if not difficult; then turn and paddle up it again, cross it repeatedly, and draw the teeth of each of its separate problems. Paul gets five rapids' worth where the rest of us used to get but one. But we have taken to "playing" the water ourselves.

In this upstream slalom play, naturally, the expert doesn't observe as a blank prohibition the rule not to surrender his bow to the current. Rules like that are, for experts, advisory and subject to interpretation. The skilled

paddler uses the current when he wants to turn—as he must, at high speed, to clear a 360-degree pole. In doing so, he uses skills that have been sharpened by the challenge of those current differentials that would bring disaster to a neophyte.

The Duffek technique relies heavily on the paddle as a pivot, and on the boat's having a certain relative velocity in the water. Thus current differentials are more critical than in the old-fashioned forward and back-stroking methods.

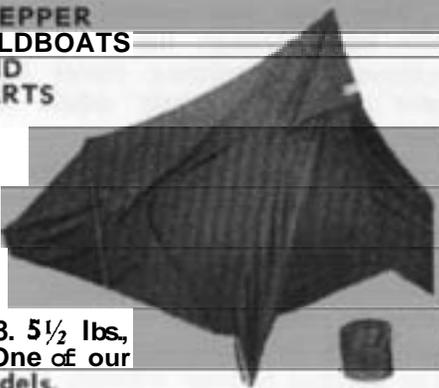
The skilled Duffek kayaker reaches out to plant his paddle in still water, or, when paddling in an eddy, reaches out for a patch of fast water. The motion is relative in each case; the boat and paddle are elements in a vector

which the paddler's instincts are constantly solving as if he were a flesh-and-blood Univac. The zenith of skill is reached when the paddler, in fast water, reaches deep for a pivot in the boundary layer of slower water near the bottom, adding a new dimension to the vector diagram.

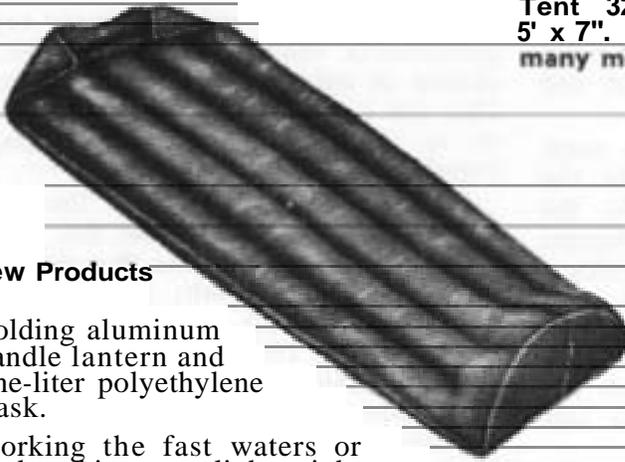
Many of us who never will be champions and are doubtful of carrying competition to extremes have been justifying slalom races as a means of sharpening technique and of presenting us with river problems we would not encounter in normal white-water cruising. I realize that I have been turning that argument upside down, and justifying up-river practice as a means of preparing for slalom.

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## BOOK REVIEW

CANOEING WHITE WATER in NORTHERN VIRGINIA and NORTH-EASTERN WEST VIRGINIA, Randy Carter, Warranton, Virginia, 90 pages mimeographed, \$1.50 from author.

This book meets a constantly growing need for factual information on our rivers which can be useful both to the beginning white-water enthusiast and the more experienced. While primarily a guide book, the brief narrative sections give glimpses of rivers which are historically interesting.

This book covers streams in the Potomac River Basin and smaller and less well known streams on the head waters of the James River. The area is rapidly becoming known for some of the finest white-water rivers in the east several of which would rival the western rivers.

This book is the result of the deep personal interest of the author in making white-water cruising a better known and more popular sport, and through factual and correct information to make the sport safe for novice and expert. Safety is featured in the hints in several sections and by providing accurate reports on the average drop per mile, difficulty rating according to AWA standards, distance in miles, time and water height. In preparation of the book the author, in cooperation with members of the Canoe Cruisers, Washington, D.C., has marked all of the rivers covered with gauges which can be viewed from the highway and has taken that one additional step which is usually lacking; that is, to arrange with people living along the rivers to furnish information on the basis of telephone calls. Thus it is now possible by using this book to get an accurate

meet the  
**CHAMPION**  
see the Salom 59 on  
the inside back cover.

reading on the level of water on any given day by the simple expedient of a call. This last was no small task and all canoeists who may be using these rivers in the future owe a real debt of gratitude to the author for his leadership in this field.

The guide is pocket size and loose-leaf bound for easy use. Careful descriptions are given of individual sections where the length of the river could involve major water changes.

Of particular interest to canoeists using aluminum craft is the section on waxing which has been proved so effective by the author.

From personal experience on the rivers covered I have found the information accurate to a fine degree and the notes useful even to the experienced canoeist. This is another of the fine contributions being made to the growing text on our rivers. It is highly recommended not only to those living in the vicinity of these watersheds but to canoeists who are looking for new areas to cover.

Reviewed by **Ramone S. Eaton**,  
Vice President,  
American National Red Cross

### WANT ADS

THE WANT-AD DEPARTMENT WILL BE A REGULAR FEATURE OF AMERICAN WHITE WATER, FOR THE USE OF MEMBERS WHO WANT TO BUY, SELL OR SWAP EQUIPMENT. THIS DEPARTMENT IS NOT AVAILABLE FOR COMMERCIAL ADVERTISERS. RATES ARE 15 CENTS PER WORD WITH A MINIMUM CHARGE OF \$2.00 FOR AN INSERTION. \* \* \*

Racing Vest Preservers, leg straps, red & white, unused, two @ \$8.00. Dave Toeppen, 1206 Elmwood, Wilmette, Ill.

\* \* \*

Double seater Klepper Aeriuss Foldboat in excellent condition for sale. This boat has been used only a few times. Box 489, Wenatchee, Washington. Dr. F. E. Kells.



We can't wait to

Here is an ardent and avid group of river runners

Even before Spring has had time to warm the air and thaw the rivers, that dedicated group known as the Prairie Club Canoeists are getting their boats and gear ready for boating—idyllic floats on quiet streams, invigorating runs on the rapids, and camps where Nature with the skill of a Maimonides brings peace and repose to city-wearied souls.



We visit and revisit ma



We often stop on a sandbar for a refreshing swim



A little mud c



Let the snow melt



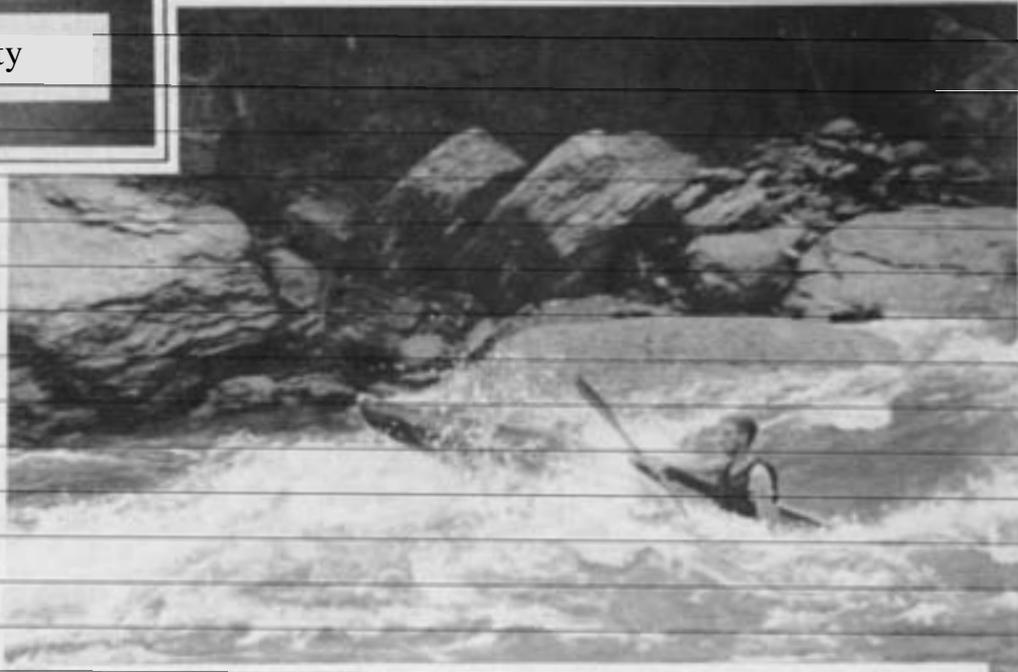
Sometimes we have to clear a path down the river



Many scenes of tranquil beauty



Don't discourage us



We find some spine-tingling rapids to vary the fare

# Carry Your Boat Without a Rack

by CHARLES MOTTIER

THE NEWER CARS, MANY OF WHICH DO NOT HAVE RIGIDLY-FASTENED GUTTERS SUITABLE FOR THE ATTACHMENT OF CAR-TOP RACKS, HAVE CREATED A PROBLEM IN TRANSPORTING BOATS. THIS IS HOW ONE GROUP HAVE SOLVED THIS PROBLEM. IT IS HOPED THAT OTHERS, WHO MAY HAVE WORKED OUT OTHER SOLUTIONS, WILL SEND IN THEIR IDEAS.

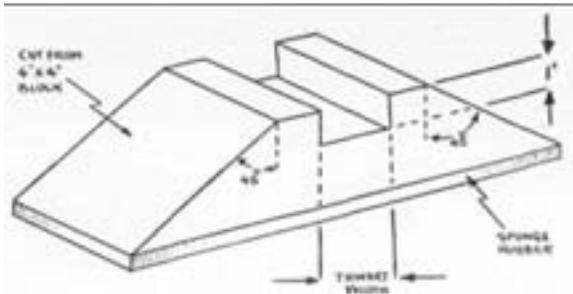
Car-top racks for carrying canoes are difficult to install, even more difficult to remove, and are unsightly while in place. We in the Prairie Club have found canoe carrying blocks far superior to conventional racks in every way. These blocks, of which three are required, are cut from a piece of 4x4" lumber. Cars vary, and if additional height is required, as many 1x4" strips as are needed may be nailed to the bottom of the block. Next a slot is cut about one inch deep in the top of each block wide enough to receive the canoe thwarts. A piece of foam rubber is glued to the bottom of each block to complete the job.

The blocks are positioned on top of the car; one on each side in front and the third one centered toward the rear of the roof. The canoe is lifted by two persons and simply set down inverted on top of the blocks. Experience will quickly teach where to position the

blocks to receive the thwarts. If the boat is to be loaded by a single person, position the two front blocks normally, but place the rear one at the edge of the roof just above the center door post. The canoe is raised to the shoulders in the portaging position and the rear thwart is placed in the rear block at the edge of the car. The block is then slid into position by feeding the canoe hand-over-hand over the head. In this instance it is well to wear a hat and rest the bottom of the canoe on your head while securing new handholds. After mounting, the canoe is secured to the car fore and aft by four cables which hook at one end to the car bumpers and at the other end to a single 8 or 9 inch turnbuckle, which is hooked to the tow ring at each end of the canoe.

Securely fastened in this manner, with the cables forming a wide "V" to the bumpers, the canoe can cruise on your car at 70 miles an hour for days on end without need for further attention. The original blocks and cables are now in their tenth season and have given service for thousands of driven miles. One last suggestion—it is a good idea to either tie the turnbuckles or to use a back-up wing nut to prevent their loosening from road vibration.

EDITOR'S NOTE: A few of the Prairie Clubbers have further modified Chuck's invention by enclosing the slots in the blocks so they are free to revolve around the thwarts. Thus, when the canoe is inverted for loading on the car, the blocks drop into position to support it; when the boat is right-side up, the blocks hang down inside the craft, out of the way.



# Improved Car-Top Carrier

by ALLAN BOZ

If you're still floundering with a carrier handicapped by flimsy, stretching straps, and flapping guy lines which mar your car, here's a simple, inexpensive remedy. However, explaining it will outdo the tortured inventions of Rube Goldberg himself, so don't let it scuttle you, **because** you'll wind up with a quick and safe hitch for both canoes and kayaks.

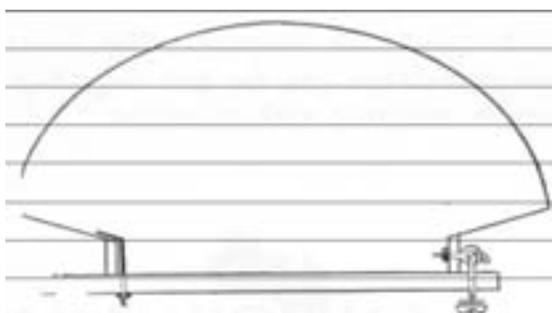
Assuming you have a standard steel or wood cross bar carrier, **discard** all straps, attach a  $\frac{1}{4}$ " screw eye bolt near the end of the bar and countersink the nut at top for flush mounting. Fasten to the car gutter with a 3" turnbuckle, using your present hooks. Mount your boat near the side of the car and mark your mounting holes on the carrier at a gunwale slot. This puts your boat way off center for a clear view and for easier handling. The mounting bolts will vary in length and in style, according to the boat. For aluminum canoes use a regular  $\frac{1}{4}$ " machine bolt, inserted through a hole made in the gunwale; tighten with a lock washer and wing nut.

For wooden canoes, use a  $\frac{1}{4}$ " oval head carriage bolt 3" long, but file the head even with one side of the bolt. This bolt should incorporate an iron

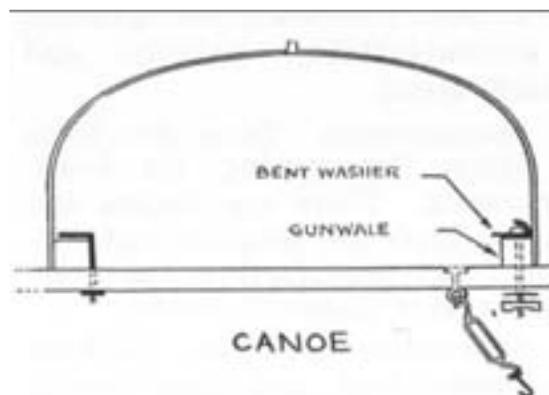
washer for better grip, and to avoid separate pieces, insert the washer in a vise up to the top edge of the hole and hammer the protruding part over to a right angle. Now slip the bolt through the washer and insert in the vise with only the bolt-head and washer showing; hammer the upright part of the washer over the bolt head, and you have a one-piece fastening bolt. This arrangement gives a large holding area, and is used on the outside of the gunwale by inserting the bolt through the gunwale slot and carrier hole and tightening with lock washer and wing nut.

For folding kayaks carried assembled, replace the two gunwale bolts on one side with  $\frac{1}{4}$ " screw eye bolts, eyes outside (or add two bolts) and fasten to the carrier with similar bolts whose eyes have been opened. The opposite gunwale can be held down like the canoes, but bend the angle hook so it doesn't tear your deck. Optionally, you can anchor the kayak by drilling a  $\frac{1}{4}$ " hole in the gunwale at the proper spot. The same principle would apply to carrying a rigid kayak.

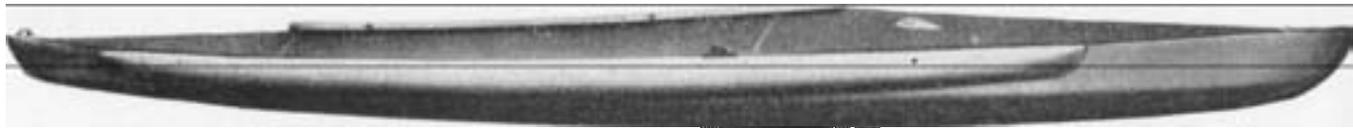
The author uses both canoe and fold-boat and has used this system of loading successfully for a number of years.



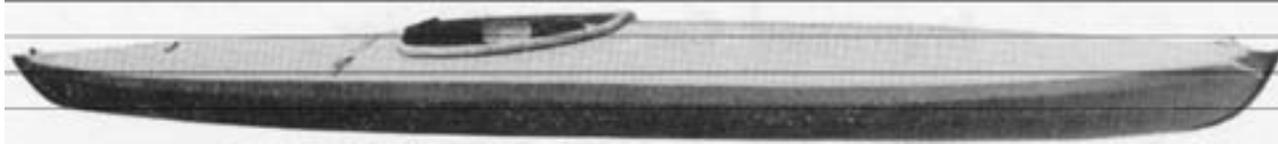
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# Basic Features of Channel Flow

by WOLF BAUER

In our efforts to simplify and classify the apparent confusion of white water into a minimum of basic elements for purposes of field recognition and understanding, we must not become confused in the divisions of the subject matter itself. Thus in our teachings and instructions let us keep separated the study of elemental hydraulic phenomena from the broader aspects of river sections and channels and let us not confuse paddling and boatmanship with the art and technique of river navigation. Thus far we have only dealt with the hydraulics of water action in itself. To ease into the river and its navigational problems as a whole, let us first note some of the predictable features of water-on-the-move when it is confined to various types of channels.

## DEFINITION

Any elongated depressed area or trough which acts to guide

and confine downward flowing water within its course may be called a channel. A river bed is a channel when filled with running water. However, a river bed may be partially dry, may contain islands which split the current, or may have several parallel-flowing streams within its bed. In each case, it can be made up of several channels confining, or having confined, separate streams of water. In navigation, the term is often applied only to that portion of the stream or body of water that is navigable. In this particular discussion, I am defining the channel as that trough or depression actually wetted at the bottom and sides by the flowing current.

## WATER FLOWS IN LAYERS

Basically, when water flows down a simple sloping straight channel

we would best think of it as sliding and slipping in many thin layers as would a series of lubricated inter-nesting troughs such as flaring rain troughs, each inner trough slipping on and over

the next outer trough below or around it. Since the next outer trough moves downhill also, each inner one has greater speed than the outer next to it in relation to some fixed object or point. This telescoping effect of differential flow in concentric layers therefore causes the highest and center-most layers, namely the ones furthest removed from the friction or slowingdown surfaces in contact with the water to move at the greatest velocity, and the outermost layers near the channel surfaces at the slowest speed. In a uniform straight river channel where the width is greater than the depth as is most usual, the fast sliding layers are in the exact center and near the surface of the stream. See Fig. 1 & 2. Air friction and surface tension, however, actually slow down these fast surface layers, especially if the surface is somewhat rough; and the fastest current is just below surface layers.

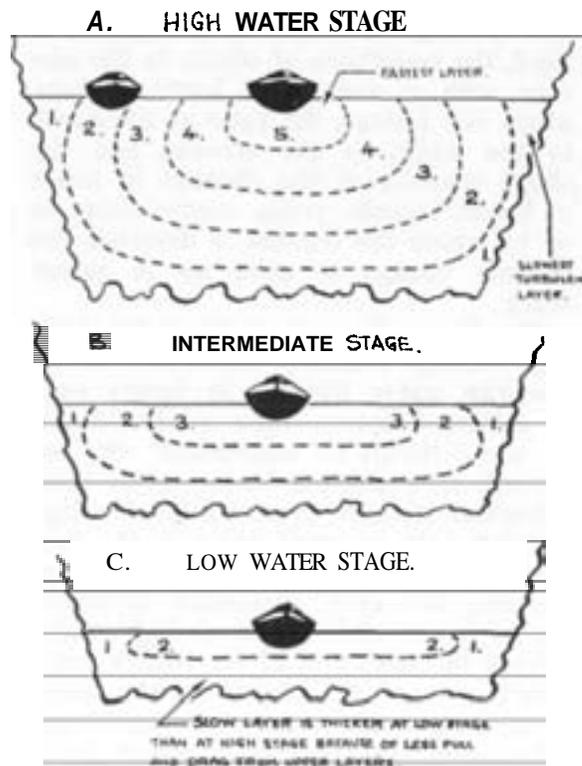


Figure 1

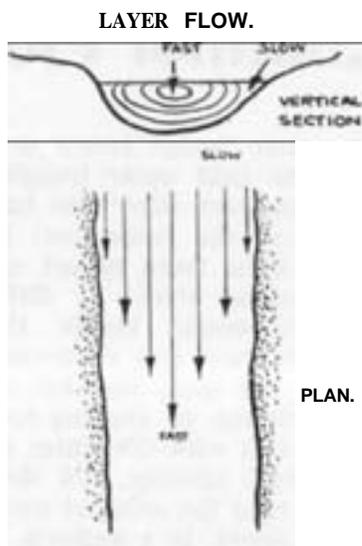


Figure 2

### HOW FAST FLOWS THE RIVER?

Slope of channel, and opposing friction and impact surfaces affect the speed of currents in channels. In terms of rivers, the average current speed is influenced by the gradient of the river in terms of drop in feet per mile, the roughness of the river bed in terms of coarse or fine gravel or sand, the resistance of objects in the current such as rocks and boulders, logs, piers, and pilings, the ratio of the depth to the width of the stream, and the shape changes of the channel in terms of bends, islands, pools, constrictions, in or by which the current is diverted and velocity energy is used up in turbulence.

The force of gravity pulls water down the sloping channel. However, if we visualize water flowing in layers each at different speed, then it should not be too difficult to understand why water will flow along a horizontal or level trough or channel. If such a level trough is filled with water at one end, the first bottom layers will not slide because of friction, but each successive layer on top of it can slide off at a slight angle toward the open end of the trough, until finally one of the higher layers reaches the end of the trough and spills out. By simply maintaining a water layer at the filling end higher than a water

layer at the discharge, a "hydraulic gradient" has been established down which water layers can slide upon themselves, irrespective of the bottom slope of the channel. Because of the great length of a river channel compared to its depth, the average surface slope of water can be assumed as being parallel to the channel bottom except at stretches where the slope of the channel bottom changes. Since the foldboater is affected only by the top current or layers of water, the velocity of this surface current is therefore a function of the hydraulic gradient. The steeper the slope, the more purchase will the constantly pulling force of gravity have on each sheet of water. As the slope approaches vertical, the weight of water becomes less and less against the channel bottom and the pulling force in the direction of flow increases from zero to the full weight of water as it falls over a waterfall, at which time the water reaches its maximum velocity. So the first factor affecting current speed is channel slope or hydraulic gradient.

The next factor is friction force which opposes the force of gravity. For the sake of simplification, let us consider friction to be primarily a shearing resistance between the millions of layers of water; the greater the pressure of one layer against another, and the greater the speed difference between two contacting layers, the greater this frictional resistance force tending to slow down the layer speed. At the bottom of the channel pressure is greatest, and the roughness of the channel surface causes the greatest slowdown of the layers and the greatest layer shearing. Every time there is turbulence in the water, there is layer shearing, and consequently a slowing down of layer velocity or slippage, and a loss in velocity energy. The paddler's downstream speed is therefore often slower in the more turbulent white water sections.

Even the smoothest channel presents considerable friction. Furthermore, it is of interest and importance to realize that not only does the friction force increase with the velocity of the current directly, but it **does** so at an increasing

rate, namely as the square of the speed. This means that if the velocity is doubled, the friction force is quadrupled. If the current is speeded up three times, then the frictional resistance forces are nine times their former value. So it should become apparent that soon a current speed is reached in a channel where the friction force will balance the force of gravity, and at which time the current speed is maximum and will not increase further. Since friction plays such a predominant role in slowing down stream velocity, the reader with river travel experience will understand why a white water or boulder blocked stream running fairly shallow but steeply over coarse gravel may be slower in average current velocity than a deeper smoothly flowing river having a lesser gradient. See Fig. 3.

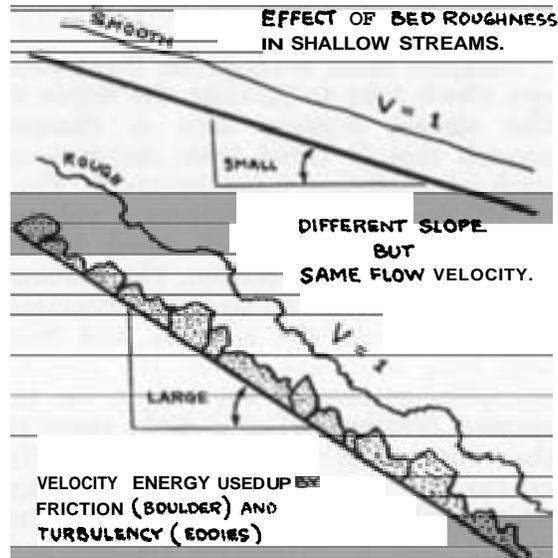


Figure 3

For the same bed roughness (friction) and channel slope or gradient, the shallower river is the slower, the deeper is the faster. Under the same conditions, the bigger and wider river is no faster than the smaller and narrower river, providing that the depth is the same in each case. This may seem a contradiction on the surface, — the shallow

stream will approach a stretch of increased channel roughness that will cause it to slow down, and in so doing it will rise and increase in depth. However, it is only necessary to recall that the total volume of water or the flow always remains the same, and so if the current slows down due to friction, the depth of water or the width of the

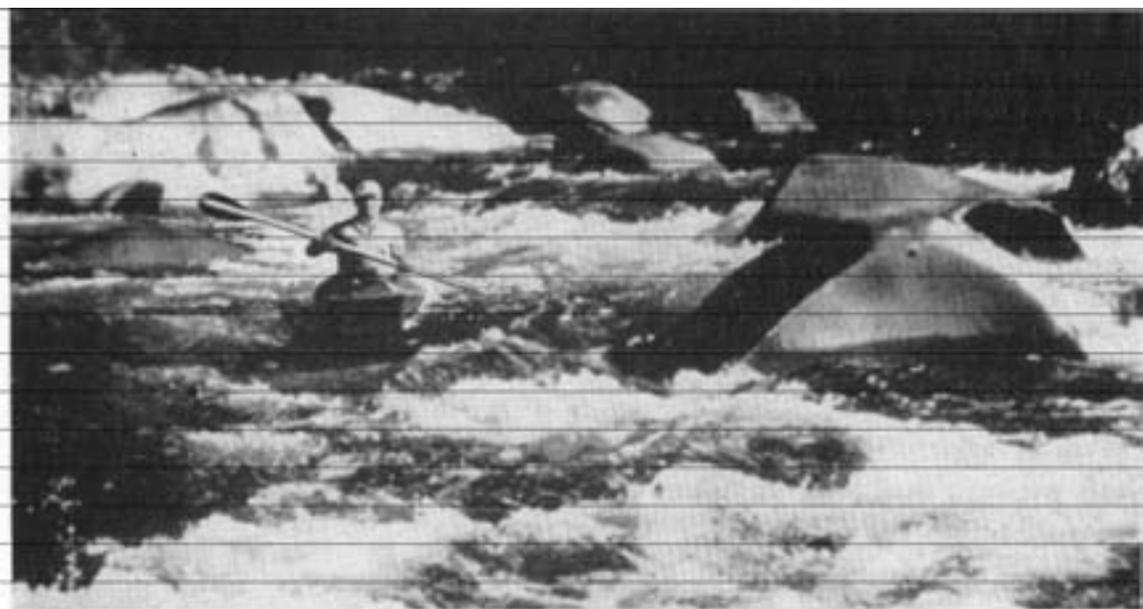


FIGURE 4. Despite steep gradient and turbulency at low (green eddy) stage, these boulders and their back-eddies have deepened the water and slowed down its average velocity. This is where back-paddling and a "skid-stern" type single seater combine to make mastery of the descent sheer joy.

stream, or both must increase to maintain the flow constant.

Actually ~~there~~ seem to be three factors which tend to increase the depth of the stream flowing thru a channel stretch that is filled with obstructions such as numerous large boulders. First of all, each boulder displaces a volume or crosssection of water equal to its own volume or crosssection. This amount must be added to the stream crosssection at any point in the channel, and thus will both raise and widen the stream. Secondly, as pointed out before, the increased friction will slow down some of the water layers, converting velocity energy to static or pressure energy which makes possible the raising of the water surface, keeping the energies and flow balanced. Thirdly, each boulder forms an area of static or reverse current eddy as well as an impact zone thru which no water flows downstream, and which further reduces the active downstream channels of flowing water within the total stream section, and thus causing a deeper stream condition. See Fig. 4.

Not only may boulders have such slowing down effects on the current speed and raising of the water level, but the presence of alternate sharp bends in steep-bank channels may have similar effects. In all these discussions, the term "current speed" is the average surface speed of the current moving downstream, and the river paddler and his kayak will come to float in both faster and slower currents continuously, and so average out over a period of time. Under racing conditions, and when extreme care is taken to hold the boat always in the currents of maximum velocity, then the floating speed can become considerably greater than the "average" current speed.

## **THE RIVER SQUANDERS ITS ENERGY**

To an engineer, the turbulence of streams and rivers is one of the great displays of wasted energy in nature's showcase. We hear a lot of the large amount of work performed by rivers in moving gravel and boulders, carving out canyons, and in carrying the

ground-up silt to the seas. Yet actually, this work is insignificant when compared with the energy lost or transformed in the turbulency of currents as they move downhill in the river channels, energy which is completely wasted and performs no actual work upon the landscape, nor for man himself. The amount of this great energy wasted upon itself is equal nearly to the work required to lift the mass of water in any length of river stretch from the low point on the stretch to the higher level of the upstream point. Only a tiny amount of this is used in rolling some gravel and performing erosional work. The rest is spent in raising water in waves and hydraulic jumps, in rotating big and little eddies and whirls, and in shearing water layers or in shredding it into droplets in white water. If the reader has difficulty in visualizing the scope of this internally-squandered work energy and power, let him or her consider for a minute just how many steamship engines or motors coupled to large propellers would be required at every turn of even a small turbulent stream to similarly churn up the water, to push it upstream against itself, to rotate it vertically or horizontally, to beat it into froth, let alone to force it along the rough channel or around a bend, or to continually boost it at great speed in smooth channels without loss in velocity.

The river-touring and sport-seeking paddler also contemplates this display of internal energy "losses" of rivers in which such huge forces are spent in turbulency, but to him there is no sign of "waste". No indeed, here is the real living and pulsating water that WILL perform useful work and recreational sport for him, that will spin him and his trusty kayak in merry whirls, that will back up for him to carry him effortlessly upstream at times or anchor him securely in the midst of swirling foam, shoot him in swooping glissades thru rapids or high-speed jets, bounce him skyward over the crest of a "haystack", drop him gently into the quiet and playful crosscurrents of the deep pools, or sweep him in graceful arcs around the bends.

## EFFECT OF CHANNEL SHAPE

The skipper piloting his boat along irregular inlets or arms of

the sea, or along narrow twisting lakes, moves past the shore at a more or less constant speed as determined by himself or limits of his motive power, be that motor, paddle, or wind. Not so the river traveler. His speed past the shore or bank is mainly regulated by the speed of the current at any particular point. Under his hull there moves a fixed volume or mass of water flowing always at a constant rate of so many gallons or cubic feet per second, but due to channel changes, his speed changes continually.

In order first of all to simplify the complexity of current phenomena explained so often in contradictory terms, I shall introduce the river current student to the concepts of "STREAMING FLOW" and "SHOOTING FLOW". The channel may widen or narrow, become deep or shallow, or change in slope, yet it cannot positively be stated by anyone that under each simple change of channel, the current or stream will do so and such. The resulting stream action depends on whether the current is streaming or shooting. The shallow and fast stream is in shooting flow, and the deeper and slower stream is in streaming flow. The critical water depth at which one flow changes to another is more or less established by the relationship between the velocity energy and the pressure energy of the water. (Flow is said to be shooting when the velocity energy of the water is greater than half of the static or pressure energy.) Naturally we are not going to compute whether a river is streaming or shooting, even if we had the means to do so. What we, as river paddlers are concerned with is rather the fact that the current WILL behave differently under these two more or less extreme velocity-to-stream-depth ratios or conditions, and that an observation or speculation on what a current will do under certain channel changes must be preceded by a quick evaluation of whether the current is one type or another.

## THE CHANNEL WIDENS

When a channel widens gradually for a considerable distance and then

narrows again without changes in channel gradient, then the average current flows slower in the wide section than in the narrow section under each type of flow. Under streaming conditions, the current speed is slowed down in the wide section because additional cross-sectional area has been added on each side without changing the hydraulic gradient or depth, while in the faster and shallow shooting flow, the current is slowed down not only due to widening but also due to increased surface friction of the wider bottom area and a possible raising of the water surface or deepening of the stream. Of course, if the channel widens suddenly for only a very short distance, then the creation of side eddies may partially offset the widening effect and larger stream cross-sectional area, as then the total area is not effectively used for downstream current movement. This may hold for shooting flow but not for streaming flow. Long side eddies with shooting flow in the widened zone could have virtually the same effect as though they were solid rock or gravel banks of the same width instead of revolving side eddies, and so the stream velocity in this wide section may hardly be reduced under such conditions. In streaming flow, if any eddies are created at all, they would be less distinct, smaller, and prone to form and disappear in surges, and the stream velocity in the wide zone would still be reduced.

## THE CHANNEL NARROWS DOWN

Assuming the channel gradient to remain the same in all

cases, four extreme but simplified conditions may be set up, namely a gradual narrowing into an elongated narrow channel section, and an abrupt constriction into a very short narrow passage followed by an abrupt widening, both under either streaming or shooting flow conditions. The reader must take into consideration that there is actually a very wide range between max-

imum and minimum streaming, as well as maximum and minimum shooting flow conditions, and the discussion here is based on an average condition in each example of channel constriction.

Under gradual narrowing and streaming flow, we may expect both a slight flattening of the water surface slope upon entrance into the constriction zona (a slight raising of the surface above normal surface gradient) often maintaining a narrow center section of the current. This center layer may extend to considerable depth if the stream is very deep in relation to its width, as then the side wall friction of the channel will be as effective or more so than the bottom. If the flow is shooting, as in a faster and shallower stream entering a gradually narrowing channel, these aforementioned effects become more pronounced, and there may be added a slight concave raising of the water surface at the sides.

In the case of an abrupt entrance constriction and also widening thru a short narrow funnel passage, streaming flow will show a distinct smooth upward bulge of water thru the gap, with a fast and deep current under high pressure causing subsurface turbulence downstream from the narrowest section. The surface gradient will likely drop in a steep and smooth curve at the outlet, with slow but strong side eddies to each side in the widening section, and the presence of turbulent reaction waves or swells (small haystacks) following the regain of the lower water level in the wide section.

Shooting flow conditions upstream from such an abrupt constriction may cause the stream to act up vigorously. See Figure 5. Strong impact **pressure** is brought to bear upon the side constrictions, and the resulting current deflections toward center at the throat or entrance will pile up the water in a sharp crest, creating a raised and **high-velocity jet** thru and just past the constricting passage. Strong side eddies, whirlpools, fences, plus a probable roller from a jump condition may be formed in the widening discharge zone of the funnel, a combination of dynamic for-

ces that may make such a spot impassable under extreme conditions of channel change and stream velocity, and volume of water involved. It should always be remembered that any phenomena of flowing water described so far, or to be discussed later, may range from **minature** to very great dimensions. Thus a description of extreme conditions of any phenomena is not one of size, but of characteristics. On the other hand in relation to navigation and safety, the size of the phenomena, not the hydraulic conditions, are determining. Any here again, size is relative to the craft size and type used.

**SURGING** of water, whether noticeable on the surface or not, is generally present in river stream flow, and is caused by the many irregularities in the bottom or sides of a river channel, the forming and breaking up of eddies and jumps. In rapids and near changes in channel shape this ununiformity shows up often very distinctly in the form of periodic rising of water surface, or a **s**peeding up and slowing down of the **c**urrent momentarily, often very plain when two boats drift along side by side. Since eddies may be considered part of a channel obstruction as they occupy space in the channel in which water does not flow downstream at all, or at least not at a normal rate, then any eddy that is unstable as to size, position, or formation should cause considerable surging condition in a stream below it. I have felt this surge cycle many times, and once while on a scouting trip thru the canyons of the **Fraser** river in British Columbia where even at low water stage the depth of the river is often more than its width, the boat and I ~~were~~ lifted up and **down** alongside the canyon wall two or three feet in slow periodic cycles, the water being under slow verticaleddy **and streaming** flow condition with a relatively flat and calm surface. There are other daily gradual surges which we shall discuss later in the chapter on rivers in general. When we take up the navigational phases of river touring we will take up this surge phenomenon again and show some photographs of its action

## THE CHANNEL CHANGES DIRECTIONS (Bends)

To ~~any~~ traveler, the bend in the road or trail ahead of him brings on a sense of curiosity and anticipation while in his prog-

ress around the bend there open up to his eye and mind new vistas and plans of action. On a river tour this is especially the case, for not only does the bend represent a change in scenery, or shift in wind or sunlight direction, but it affords a change in pace and current action, often additional pleasure and sport in the art of negotiating the turn itself.

Basically, the action of the water flowing around a symmetrical turn in a uniform smooth channel is rather simple. But rivers usually flow in anything but a uniform channel, and the currents in a bend may seem unpredictable at times, especially to the beginner. One can well believe this in watching the often comical antics and exhibitions of utter frustration of newcomers rounding a new type of bend. Later on we will see what we can do for them, but first let's analyse the conditions step by step.

In the faster currents and shorter radius channel turns, a new force enters the picture, namely centrifugal force. This force causes the layers of water to slip and slide not only downhill and downstream, but also at right angles toward the outside of the turn, and not necessarily downhill. We all have at one time or another seen or taken a pail filled with water and swung it around by the handle at arm's length in circles without spilling its contents. The centrifugal force acting outwardly against the bottom of the pail must have been stronger than the force of gravity acting to pull downward on the water. If there had been a hole in the pail bottom, water would then have been pulled out by the centrifugal force. Just as in the case of the pail bottom, the outside or concave side or bank of the curving stream channel resists the additional pressure built up by centrifugal forces. However, in this

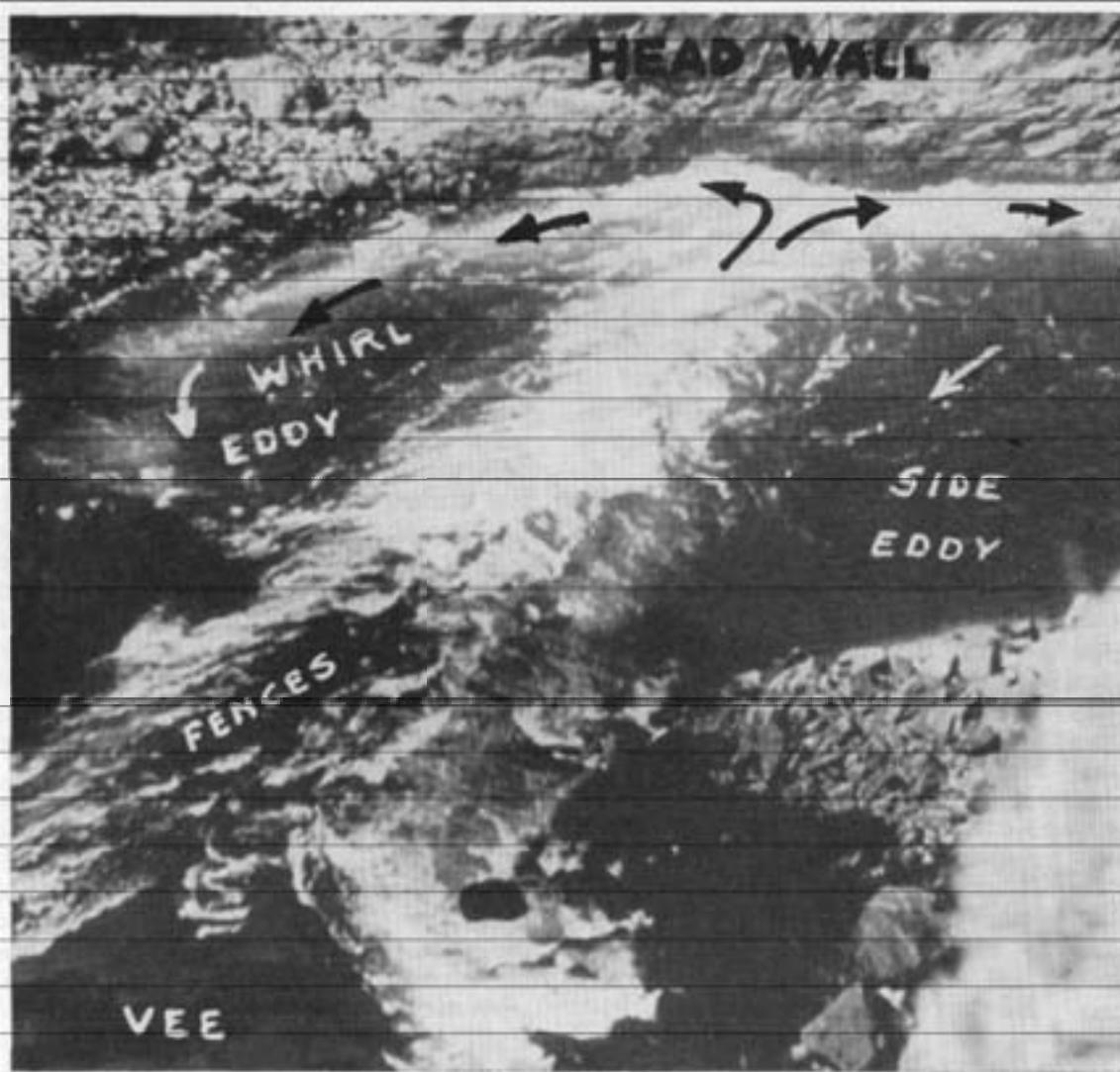
case each horizontal layer of water is free to move slightly uphill toward the surface and the outside while being forced to change direction, and therefore there is a piling-up effect which causes the surface of the water to become elevated at the outer rim against the concave bank.

Since an actual slippage of surface water layers under centrifugal action takes place in the direction of the outside bank, a top current is produced in this direction which is at right angles to the stream direction. In view of this top current and the additional downward acting pressure at the outside edge of the stream caused by the elevated water level here, a downward traveling current is formed causing flow from the surface to the channel bottom alongside the concave bank. This current must also then rise again toward the inside shore after crossing the channel bottom, and the whole combinations acts as a slow current circuit. Since the stronger and faster downstream river current and the slower and weaker circulating cross current take place simultaneously, the net effect is a slow spiral rotation of water around the bend. This centrifugal force also shifts the fast central current from its normal midstream position to one closer to the outside perimeter of the turn, the amount of such shifting depending on the stream velocity and the radius of the bend, high velocity and short radius creating greatest displacement. Thus if the boat floats in midstream approaching the bend, it will be shifted toward the outside while turning the bend.

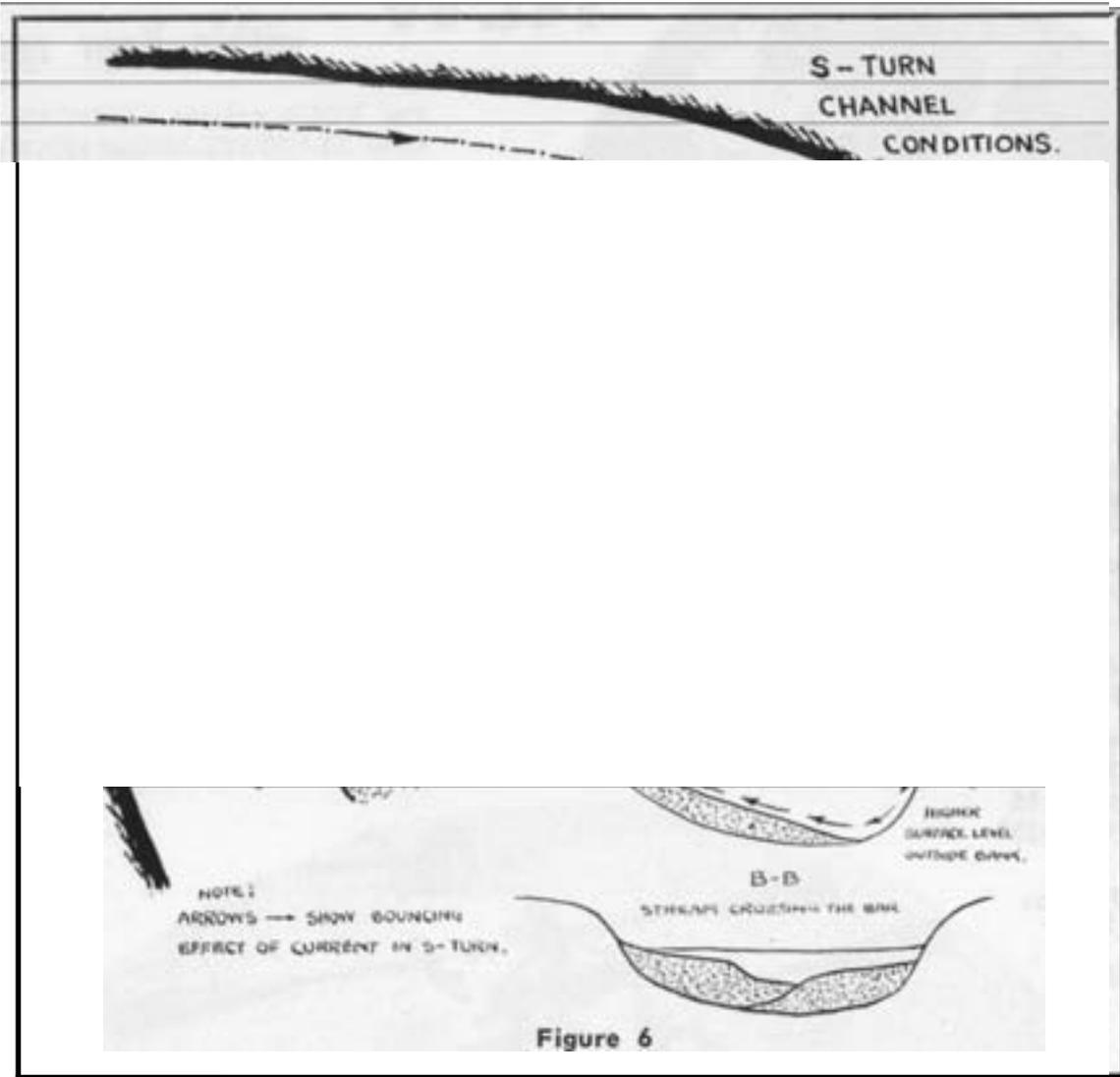
The action and reaction of a stream as it enters, rounds, and leaves a bend is not only dependent on the channel shape, current velocity, and sharpness of radius of the bend, but also on the direction of the current as it approaches the turn in the channel. Quite often the current has to cut across the channel from the inside to the outside because of the effects of other bends and diversions upstream. Often there are many bends following one behind the other in winding and twisting river courses, and any particular turn or bend

may be then part of one or more figure S curves. Under such conditions, the current will likely not enter a bend uniformly, but may flow directly against the center of the concave bank from which it will re-bounce or twist in a very tight turn, and be bounced back across its channel to the other side. This so-called "bouncing" tendency is a contributing factor toward formation of twisting S-turns in the bed, and the carving of a winding channel. When the water is directed so as to hit smack head-on into the bank at more or less right angles, the fast current lay-

ers on top of the stream will flow directly against the bank and then turn under in the spiral motion referred to earlier, provided the stream has carved out a deep channel at this point, and the water against the bank has sufficient depth to permit such a current to form. If it has, there may be relatively little surface commotion at the point of twist and bounce. If, on the other hand, flow is more or less shooting, and the channel bottom and bank are not gouged out at the impact point of the turn, (if the bank is of soft material, for example) then the current cannot turn under and



**FIGURE 5.** Text-book type illustration of channel constriction at shooting flow. Note reaction fences on each side of jet and impingement on head wall to form typical whirl-eddy. Upper left hand corner shows whirl-eddy pocket uncovered by low water stage.



slow down, and the water will pile up high against the bank with breaking impact waves forming rollers and fences, especially under unsteady surge conditions. See Figure 5. The river traveler must learn to interpret the surface conditions and stream flow direction in order correctly to judge and foretell how the current is likely to behave at the point of impact, and before he arrives at this point. In hard rock formations and old channels, the reaction currents from this bouncing impact may have carved deep pools at this point, and slowed down the current speed, while in a newer channel all the velocity energy may be concentrated in the pile-up of twisting water in a

narrow but very fast stream section.

In future issues we shall finally come to grips with the problems of mastering the hydraulics as related to our boat, and the navigational approach to river sections of all kinds. I shall also give an outline of our training courses and how and what we teach in the field.

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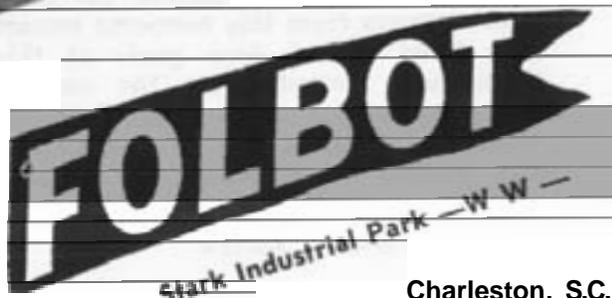
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# Some Thoughts On Safety

Reprinted from THE SPRAY

publication of the Colorado White Water Association

## SWIMMING AND SAFETY

by DAVE STACEY

I have a very good friend who wants to take up whitewater boating. He is well coordinated, loves the outdoors, and would get a great deal out of our sport. There is just one drawback — he can't swim. After some soulsearching, I told him to forget boating and refused to take him on trips on our rivers.

A number of us have the difficult problem of what to do with non-swimmers. Are we being mean, or are we acting in their best interests when we worry about drowning?

To me the answer is crystal clear. Anyone who takes a **non-swimmer** on a river of any depth must be ready to bear the responsibility for that man's death. Regardless of what releases have been signed, any dry-land jury will take one look at the "non-swimmer" and hold the trip leader responsible.

Let's take a look at some unpleasant facts. If a man is pinned under a log and struggling to get loose, he either is free or dead in about **60** seconds (sometimes he can be saved at this time, but don't count on it). If you are sitting in a boat **50** feet away, and just by chance happen to see the whole thing, how often do you think you could save him? The answer is not too often. From the trips I have been on, people being this close and this observant is the exception rather than the rule.

For many years, a number of us have realized that only the person himself can do the right; thing in the short times available. In many cases it is all over by the time rescuers can arrive. To be safe in the water, a boat-

man must not lose his head when submerged in churning water, must be able to swim vigorously to a position of safety, and must be able to breathe when his face is under water most of the time. People who have tried to learn to swim and failed usually lack one of these essentials to safety.

One may ask whether a **lifejacket** changes this. My answer is that sometimes it makes things better and sometimes worse. If you're caught by something, a jacket is worse than useless.

These are pretty cruel words for those who love the water, but who can't learn to swim. But what would you say to someone who loved to fly, but whose eyesight wasn't good enough to make a landing? It's hard — but you'd tell him to give up flying.

In almost every camp, kids must be able to upset a canoe and swim it to shore before they are allowed to go out alone. We should do this too. I therefore propose the following by-law to be added to the CWWA rules:

**NO PERSON SHALL BE ALLOWED ON A CWWA SPONSORED TRIP UNLESS HE OR SHE DEMONSTRATES THE ABILITY TO CAPSIZE A BOAT AND TOW IT 50 FT.**

This is tougher than the proposal of the safety committee, who propose a period of grace of six months, to learn to swim. If non-swimming is dangerous then, isn't it dangerous now?

## WHAT'S WITH SAFETY

by AL B. DIRT

Paddle HO! and a 'Bottoms Up' to you, old boating buddy. How is that new boat you were going to put into commission this season? You say that's

it over there? Sorry, I didn't recognize it in that position. How goes it otherwise? Pretty good, eh?

There has been such a scuffle and flurry of safety talk this spring that I have been wondering what was behind it and where it is going. This boating being just exactly what us damn fools in the sport make it, shooting the white water is probably the last thing we should be doing if we really put safety first and foremost. Is this a sport for timid seniles and retarded infants? The dashing, devil-may-care, adventuring spirit which leads us down the rivers preresquires a certain abandonment of the asylum of safety. However we prefer to think that instead of abandoning safety completely, we possess sufficient skill to handle our boat in the white-water situation so that the calculated risk is at a minimum and we really are as safe as we would be at home in a rockingchair. If this is true, then fine. If this is not true in our own case then we should think again.

Can we really read the river well enough to understand and anticipate the stretch immediately ahead? Then can we handle our boat well enough to miss the obstructions that should be circumvented and not go through that big hole sideways? Can we bank into the current and lean on the paddle for stability as well as for thrills? And if we do happen to upset are we cool-headed, and can we either recover or else kick loose and get our own boat competently to the shore?

Safety is more than possession of mere equipment. Safety is primarily competence based upon humble learning and routine **practice**. Safety is the knowledge that you can do what you can do and can not do what you can not do. Safety is the gleanings of pearls of wisdom from those who have lost boats or competitions or possibly even friends to the almighty rivers. Safety is respect, and is proportionate to time invested. Safety is the recognition of our own limits and the act of staying within these limits.

"Then how to groom?" asks Beginner Ben. "How to get experience from that which is out of bounds?" The answer to that depends on his own particular limitations and his eagerness to broaden those limits. He should learn how to handle his boat in still water before he chances being washed against some obstacle in a powerful river. He might benefit by watching treacherous river currents and what they do to logs, which is the same thing that they try to do to boats. He might purposely float broadside into rocks or through small holes to find out which way the current tends to throw him. Possibly his limits are even more basic than currents and he feels the need to improve his water-confidence and his swimming ability. Whatever his limits are caused by, these factors he must discover for himself and improve as suits the situation.

This broadening may be aided and abetted by material things, but these aids should never be considered to be of primary importance. A life jacket may help one float or swim but it certainly can not paddle or grab or lead one toward the bank. Flotation tubes or bags are helpful but will not float as high as a boat that is maintained in an inverted position. A better boat may help one avoid **obstacles** but will not do it without a boater in it who knows where he should go and where he should not go.

Safety in whitewater boating is adherence to a policy of boating only in circumstances for which we have physical and mental preparation. The paddle must be backed by muscle and the muscle must be backed by knowledge. Pardon me a minute while I try to shake this water out of my ear.

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# POSADA'S PODIUM

BY MAURICE POSADA EXECUTIVE SECRETARY, AWA

**ANOTHER** Ever since the canoeing section of the Cornell Outing Club joined as our newest Affiliate I've been wondering if "Cayuga's waters" are white. We look forward to hearing about them. In the meantime, hearty greetings and welcome. This Affiliate may be contacted through Peter M. Stockman, Cornell Outing Club, Willard Straight Hall, Cornell University, Ithaca, New York.

**WOW!** Penn State Outing Club has been coming along by "saults" and bounds. Only two issues ago we read that until last year regular club trips didn't go on anything above a Class III river. This year, after starting out on February 8th and running trips every weekend into the spring, they graduated to Class V. They've given rave notices to the Black Moshannon Creek — 16 miles of wilderness . . . 870 feet vertical drop . . . the last 5 miles continuous Class V rapids without letup . . . and the start only a half-hour's drive from the college! Tom Smyth, faculty adviser, writes, "It has taken 4 years to develop a group with enough skill and experience to make a reasonable try at the run." Bill Bickham, chairman, says that Tom has done a lot to get the Canoe Division on its feet. We hope to get a full article about this Affiliate. It should prove useful and stimulating to other college clubs and groups who are in their early whitewater years.

**WHITE WATER STEEPLECHASE** That was the Prairie Club Canoeists' pioneering contribution to white water sport this year. This Chicago affiliate, not to be outdone by others who are favored by more rugged terrain for their well-known races, decided to have a race of its own — with a difference. It seems that the Little Calumet, besides having hazards of the usual sort, also has a slew of deadfalls. This meant that to go down the river, racers not

only had to go through the rapids but also up and over logs. Here's a toast to "a river race, eight hard, hot, hilarious, competitive miles, the first such race in Chicagoland," to quote PCC's "Cruise Card," and to the winners — Harold Kiehm and Howard Labrant in a double C, Judy Fancher in a single C, and Martin Vanderveen in a single K.

**HIGH SEAS** The spirit of adventure is strong in Vancouver's B.C. Kayak and Canoe Club. Two members who have already been on a little spree by kayak down to San Francisco are planning a longer sally. Their destination: Cape Horn, the southernmost tip of South America. With side trips to explore some South American rivers, they figure they may be away for 2 or 3 years. They plan to put into almost every town along the West coast. If we knew something about their estimated schedule, perhaps some of our western members and Affiliates could cheer them on and wish them well for their long journey. Good luck! Let's hear from you!

**UNDERWATER** The Colorado White Water Association, one of our veteran and most dynamic Affiliates with a number of champions among its members, has been doing some soul-searching in the matter of swimming. Its safety committee has decided that all members must know how to swim and has given non-swimmers a period of grace to learn. Dave Stacey, our former editor, proposed that "no person shall be allowed on a CWWA sponsored trip unless he or she demonstrates the ability to capsize a boat and tow it 50 ft." The New York AYH requires all white-water members to produce a satisfactory certificate or pass a swimming test which, among other things, calls for swimming under water.

Two of the articles on this subject were considered to be of considerable

general interest and are reprinted elsewhere in this issue.

**NO FILLY THIS AFFILIATE** The Kayak and Canoe Club of New York has got off to a spectacular start. It seems that there was a great need for a kayak club in the East; and it's certain that its organizers have been enterprising. The proof: founded only this year, the Club attracted some 27 boats to its Delaware run on Memorial Day weekend. We're sure to hear more about KCCNY.

**WHAT NEWMINUM?** Owners of aluminum canoes will be interested to know of a method of soldering aluminum developed by the Bell Telephone Laboratories, which came to our attention through the Murray Hill Canoe Club, a division of the Bell Laboratories Club. The method is claimed to be feasible. A full account of it appeared in the Bell Laboratories Record, Volume XXXVI, Number 5, May 1958, pages 157-160, published by Bell Telephone Laboratories, Inc., 463 West Street, New York 14, N. Y. Inquiries about this back number, in case it's available, should be addressed to the Circulation Manager.

**CORRECTION** In case anyone wrote to me since the last issue came out and had his letter returned by the post office, it was probably due to a little slip: my address appeared in the Spring issue as 415 but it's 417 Riverside Drive, New York 25. N. Y.

**LAST CALL** Before long the General Committee should be voting on the official version of our name and initials. If you have strong feelings on the question put to you on page 44 of the Spring 1959 issue, please let me know so that I can pass them on to the General Committee.

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see the Salom 59 on  
the inside back cover.

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The Algerian explodes because he happened to have a bomb in his foldboat.

The American immediately quits this wet sport and returns once more to baseball.

Reprinted from "Au Fil de L'Eau", publication of the Kayak Club of Luxembourg, Winter, 1958-1959, issue.

*Memo*

**Do you have friends  
who should belong to AWA?  
Let us have their names  
and we'll send them a  
sample copy of  
American WHITE WATER**

# Coulee Trekkers and Canoes

by DON OSBORNE

Just what are the necessary requirements for a person to go on a canoe trip? The Coulee Trekkers, outing club of La Crosse State College in Wisconsin, was faced with this question and we think we have found a satisfactory answer. The Club has been active in outdoor activities and just recently has pushed the sport of canoeing. With the college located just **300** paddle strokes from the Mississippi River, there was little trouble in finding a proper storage place for canoes and room for practice sessions.

The Club's objective was to train a student so he would become interested in canoeing by being a part of the program; the student's objective was to become a canoeist so he could go on canoe trips. Our main concern, then, was first with canoeing skill, and second with canoe knowledge. We wanted them to be able to handle their craft with ease from any position under any conditions.

Over forty people passed the swim test; twentyfour practiced for the canoe test, nineteen took it, and seventeen passed with flying paddles. Of the seventeen who passed only two had ever been on a canoe trip. Oh yes, there were eleven girls who passed as against six fellows! Those who practiced the most were most efficient. Some fifteen to twenty practice sessions

were given; a lot of work, but a lot of fun. Here is the test:

## A. SWIM TEST

1. Swim five lengths of the pool, using any stroke, without stopping or touching bottom.
2. Surface dive and swim under water for at least **20** feet.
3. Tread water for five minutes, keeping both hands above the surface.
4. Dive in, swim and surface dive to bottom, retrieving a heavy object and bringing it back to starting point. A distance of **15** yards.
5. Disrobe in the water, shirt, pants, socks, and shoes.

## B. CANOEING TEST

1. Team unloads canoe into water, enters canoe, and departs properly from shore.
2. Paddle canoe for one block in a straight line with bow and stern men paddling on opposite sides.
3. Turn canoe around, using front and backward sweep strokes.
4. Paddle canoe in a straight line for one block with bow and stern men paddling on same side.
5. Stern man paddles canoe alone in a straight line for one block, using "J" stroke.
6. Turn canoe around with both paddlers using draw strokes on opposite sides.





7. Bow man paddles alone in a straight line for one block.
8. Both men back water on opposite sides and paddle canoe backward for one block.
9. Using a draw stroke, both men draw on the same side for a distance of one half block.
10. Team beaches canoe properly, changes positions, and repeats test.

#### C. PORTAGING

1. Using paddles as a yoke, one person carries canoe for a distance of one block, resting when necessary.

#### Id. WRITTEN TEST

1. Name the parts of the canoe and paddle.
2. In brief form outline everything you think would be important if you were going to teach a person canoeing. Just what should he know?

#### E. ACTUAL APPLICATION

1. Instruct at least one person in the skills of canoeing.

The swim test was included to avoid rumors that students had been going canoeing without knowing how to swim. Only those who have passed the swim test or have their W.S.I. are allowed to canoe without a life jacket. All others must wear jackets at all times on the water. The swim period offered a recreational activity before and after the testing period.

The canoeing test was designed to ascertain that each man could handle his canoe under any normal conditions. It showed that each man was completely familiar with his paddle as a source of

power to maneuver his boat into any desired position. Practice sessions were held on week-ends and after school, and canoes were used only when a group leader was along, with at least a one-hour practice session preceding a short jaunt. The test was taken in a river with a slow current and under moderate wind conditions. Emphasis was placed on paddling in a straight line.

The portaging test was given not as a test of endurance, but rather for familiarizing the students with portaging. The written test gave the students an opportunity to organize their thinking on the subject. They were given fifteen minutes to list the important phases of what they learned. There were no limitations and they were free to cover the subject as thoroughly as they wanted.

We realize that this is not the perfect canoe test, but in application we are fairly certain that those who did pass know how to canoe and are qualified to go on canoe trips. Additional skills must be learned before the canoeist can go on white-water, and a more rigid test must be developed. We are hopeful that more trips will be planned and an enthusiastic canoeing group will develop at the College.

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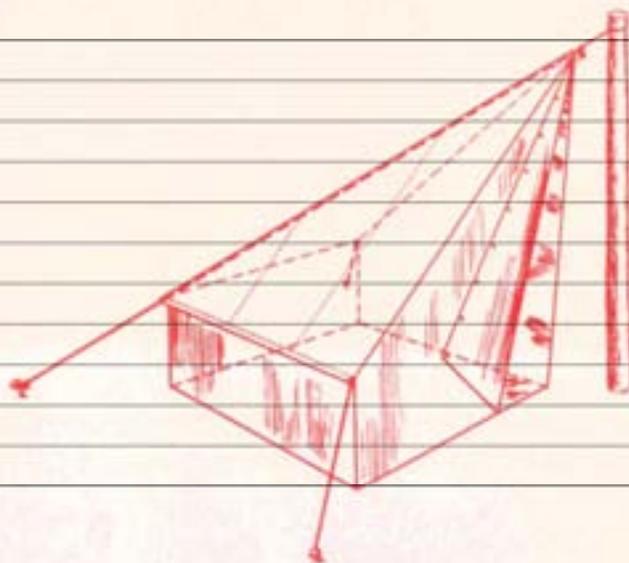
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